AH66T

Multi-Source/Multi Zone Controller

INSTALLATION MANUAL

ATON Technology in reach.™

Preface

Purpose of this Manual

This manual provides step-by-step installation instructions and connection examples, along with basic user information for installation and ongoing use of the AH66T Multi-Source/Multi Zone Controller. This manual is written for the installer of this equipment.

Please see the SystemWorx programming software Help file for programming information.

SystemWorx can be found at www.atonhome.com.

Organization

The following information is contained in this manual.

Safety Information	Provides a comprehensive list of safety practices and procedures allowing for the safe installation and operation of ATON's AH66T Multi-Source/Multi Zone Controller.
AH66T Introduction	Provides an introduction to ATON's AH66T Multi-Source/Multi Zone Controller, along with system features to include Front and Rear panel controls, indicators and connections, along with a short description of each.
AH66T System Design Overview	Provides a system design application overview of the AH66T Multi-Source/Multi Zone Controller for use in audio applications.
AH66T Connections	Provides a description of the AH66T Multi-Source/Multi Zone Controller system connections and direct connections from the AH66T to other components.
System Expansion	Provides information about integrating the 3rd party audio, video, lighting and control devices.
Operation and Settings	Provides location and function description of DIP switches, LEDs and the B1 Test Mode Button.
Troubleshooting	Provides troubleshooting tables to help fix common problems that may be encountered when installing the AH66T Multi-Source/Multi Zone Controller.
RS-232 Protocol and Commands	Appendix A provides a list of the RS-232 commands and their functions.
Rack Mounting	Appendix B provides specifications for rack mounting the AH66T Multi-Source/Multi Zone Controller.
Default Configuration	Appendix C provides specifications for the out of box operation of the AH66T.
Specifications	Provides equipment specifications for the AH66T Multi-Source/Multi Zone Controller.

Safety Information

WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN!

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

IMPORTANT SAFETY INFORMATION

Read Information — All the safety and operating information should be read before the appliance is operated.

Follow Information — All operating and use information should be followed.

Retain Information — The safety and operating information should be retained for future reference.

Heed Warnings — All warnings on the appliance and in the operating instructions should be heeded.

Wall Mounting — Mounting of this appliance should be done only by an authorized installer.

Ventilation — The appliances should be situated so that their location or position does not interfere with their proper ventilation. These appliances should never be placed near or over a radiator or heat register. These appliances should not be placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

Non-Use Periods — Appliances that are left unattended and unused for long periods of time should be de-energized.

Grounding or Polarization — Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one blade wider than the other blade. A grounding type plug has two blades and a third grounding prong. The polarized wide blade and the third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.

Power Cord Protection — Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.

Water—Do not use the apparatus near water.

Cleaning — Unplug the apparatus from the power outlet before cleaning. Use only a dry cloth to clean the apparatus.

Power Lines — An outdoor antenna should be located away from power lines. When installing an outside antenna system, extreme care should be taken to avoid touching power lines or circuits, as contact with them may be fatal.

Object and Liquid Entry — Never insert objects of any kind through the openings of these appliances, as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Care should be taken so that objects do not fall and liquids are not spilled into the appliance through openings in the enclosure.

Servicing — Do not attempt to service these appliances yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring Service — These appliances should be serviced by qualified service personnel when:

- A power supply connection or a plug has been damaged or
- If liquid has been spilled into the appliance or objects have fallen into the appliance or
- The appliance has been exposed to water or moisture or
- The appliance does not appear to operate normally or exhibits a marked change in performance or
- The appliance has been dropped or the enclosure damaged.

Replacement Parts — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

Safety Check — Upon completion of any service or repairs to this audio product, ask the service technician to perform safety checks to determine that the audio product is in proper operating condition.

Lightning Storms — Unplug this apparatus during lightning storms or when unused for long periods of time.

Attachments and Accessories — Use only attachments/accessories specified by the manufacturer.

Cart, Stand, Tripod, Bracket or Table — Use only with a cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip over.

Disconnect Device — Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain operable.

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 installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference 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 ATON could void the user's authority to operate the equipment.

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Table of Contents

Items in Package:

- AH66T Controller
- Power Cord
- Dipole FM Antenna
- Loop AM Antenna
- DB9M to RJ45 adapters (2)
- DB9F to RJ45 NULL Modem Adapter
- Quick Install Guide
- 4 Position Speaker Connectors (6)
- 3 Position Relay Connector
- RJ45 TIA/EIA568A Cat5 Cables (2)

Chapter 1: Introduction

The AH66T Multi-Source/Multi Zone Controller, combining an integrated AM/FM tuner plus six additional source inputs and a 30W x 12 channel internal amplifier, coupled with the ability to "stack" two AH66Ts (for a total of 12 listening zones) makes the perfect – affordable - whole-house distributed audio system.

Add the ability to seamlessly incorporate Sonance® iPod® integration docks, the Lutron® RadioRA®2 lighting system and Sirius® Satellite Radio, along with software configurable mono and stereo audio outputs, and intuitive touchpad control and the AH66T gives you everything you need to "rock the house!"

Oh, did we mention how easy it is to control the AH66T with 3rd party IR, RF and RS-232 controls?

The ATON Story

ATON products are designed using multiple control and distribution technologies to provide easy-to install systems that route, control and deliver audio and video content throughout the home. The company's core technologies include Dynamic Level Adjustment (DLA), Radio Frequency (RF), Infrared (IR), and Category 5 (Cat5) digital distribution of audio and video. Organized in late 2005 as a development group, the company has been working on key products aimed at providing innovative, affordable systems for consumers. ATON, a Division of ELAN Home Systems, LLC, is based in Lexington, Kentucky, and sells through a distribution network to custom installers.

To learn more, visit http://www.atonhome.com

ATON is a trademark of ELAN Home Systems, LLC, - Lexington, Kentucky.

All other trademarks are the property of their respective owners.

AH66T Features

- **6 +1 Source, 6 Zone Controller**

  "Stack" 2 AH66Ts for 12 zones and have 2 tuners + 5 additional sources

- **Integrated AM/FM Tuner**

  Station information displays on the ATON OLED2 Touchpads and 3rd party RS232 controls

- **30 Watts Per Channel Internal Amplifier**

  Produces 30W/Ch into an 8 ohm load and can be configured for stereo or mono listening areas

- **Variable or Fixed Preamp Outs**

  Connect to external amplifiers when you need extra power, for example, in an outdoor listening area or a large zone with multiple speakers, or when using an amplifier and ATON DLA Speaker Selector

- **iPod® Dock Integration**

  Integrates seamlessly with Sonance® FS-22 or IW-22 iPort docking stations

- **Lighting Integration**

  Makes adding a RadioRA2® Lighting System almost as easy as "flipping a switch"

- **Sirius® Tuner Integration**

  Full control and feedback for the SR-H2000 Satellite Radio

- **OLED2 Inputs (6)**

  Accommodates up to two OLED2s per zone

- **Zone IR Inputs**

  Allows 3rd party controls to easily be integrated

- **Routable IR Outputs**

  Makes IR source control connections a breeze

  2 IR "ALL" ports add system capabilities

- **Front Panel Status LEDS**

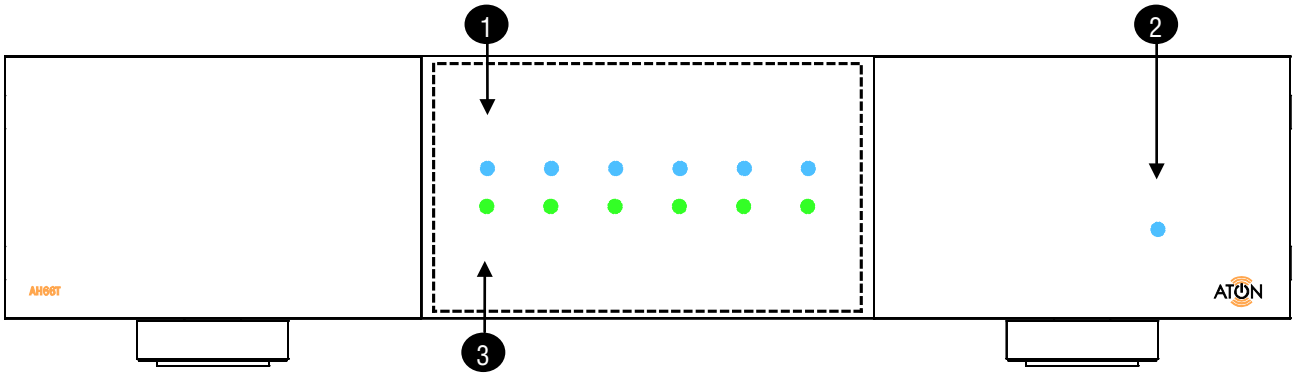
  Provide system status and troubleshooting feedback

- **USB Port**

  Configuration and firmware updates

AH66T Front Panel Indicators

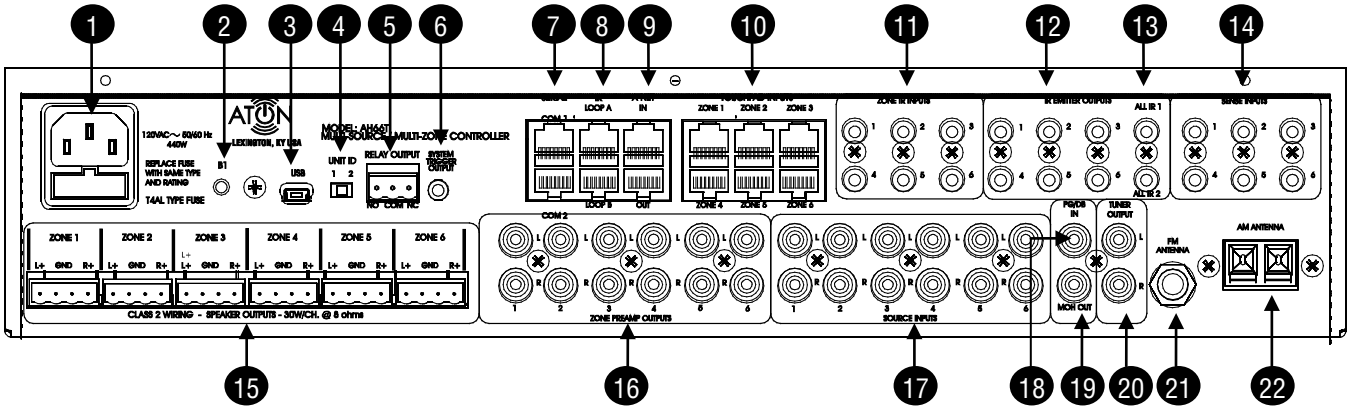
Figure 1-1: **AH66T Front Panel Display**



Item	Function
1	**Zone Status Indicators** Solid blue when the zone is on, Flickers when IR is being received in the zone
2	**Power LED** Solid blue when the AH66T has AC power, Slow blink if unit is overheating, Fast blink if unit has shut down due to high temperature
3	**Whole House Music (WHM) and Do Not Disturb (DND) Indicators** Solid green if the zone is part of WHM, Blinks slowly if the zone is in DND. Off if neither of these conditions is true.

AH66T Rear Panel Connections

Figure 1-2 AH66T Rear Panel Connections



Item	Function	Item	Function
1	**AC Power Connector and Fuse Holder** 4A 250VAC 5x20mm SLO-BLO	12	**Source Specific IR Outputs** Routes IR to specific sources
2	**B1 Button** Activates a test sequence to verify operation	13	**ALL IR Output** Use when IR routing is not needed
3	**USB Download Port** Used to download configuration programming and firmware	14	**Sense Input Triggers** Used for conditional programming
4	**Unit ID Switch** Sets chassis as unit ID # 1 or unit ID # 2	15	**Speaker Outputs** 30W per channel, Stereo or Mono capability
5	**Relay Connection** Used to activate relay controlled devices	16	**Zone Preamp Outputs** Fixed or Variable Output Level
6	**System Trigger Output** Provides a 12V Trigger Output whenever any zone is on	17	**Source Audio Inputs**
7	**Serial Ports (2)** Connections for serial control Output or Input	18	**Page / Doorbell Audio In** (Future Use)
8	**IR Loop Connections** Links second chassis IR inputs to main chassis	19	**Music On Hold Output** Connects to phone systems with Music On Hold Inputs The Internal Tuner is used for MOH Audio
9	**A-Net Connections** Links A-Net between chassis	20	**Tuner Output** Share tuner output with second chassis
10	**Zone Touchpad Connections** Connect to OLED2s	21	**FM Antenna Connection**
11	**Zone IR Connections** IR input from 3rd party controllers	22	**AM Antenna Connection**

Chapter 2: AH66T System Design Overview

Introduction

The first step to a good design is to map the system. It is advisable to mark up a copy of the house floor plan with speaker, touchpad, volume control, and equipment locations etc. Make sure that all locations are decided upon before pre-wiring commences so that all necessary wiring and installation hardware is in place. This unit will be interfacing with other components such as amplifiers, source components, communications controllers, serial controllers, and user interfaces, so it is essential that ALL system components are accounted for prior to the pre-wire stage.

Secondly, make a detailed list of all components. Include source equipment, touchpads, volume controls, amplifiers, communications gear and the AH66T itself. Be sure to include necessary electrical boxes, structured wiring enclosures, telephone lines, rough-in brackets, patch cords, power supplies, etc.

Rack Mounting

Use the ELAN RMK3 Rack-Mount Kit when installing the AH66T in an equipment rack. The RMK3 is designed to facilitate mounting ATON dual rack-space integrated Multi-Room Controllers into standard 19" equipment racks in order to provide optimum air flow and heat dispersion for these units. The RMK3 will take up three rack spaces when installed.

Pre-Wire

This section explains the specifics of pre-wiring for an AH66T system. Care should be taken at this stage to ensure a properly operational system.

Most system wiring is "home-run" from the device being installed (a touchpad, for example) back to the equipment location.

ATON pre-wiring recommendations for connections to the AH66T

Item	Description
OLED2 Touchpads	Category 5 cable
IR Receivers	Category 5cable
Volume Controls	Category 5cable for control wiring 16-18 AWG 2 or 4 conductor wire for speaker wiring Use stranded, twisted pair speaker wire between amplifiers and volume controls, and between volume controls and speakers.
Speakers	16-18 AWG speaker wire Use stranded, 2 or 4 conductor speaker wire between amplifiers and speakers.
Remotely Located Sources	Category 5 cable RG6 or RG59 coax (if necessary)
ELAN C2 Communications Controller	Category 5 cable When using an ELAN C2 Communications Controller, run Cat-5 for telephones and door stations. See the C2 Installation Manual for details.
Serial Devices	Category 5 or Serial Cable Run Cat-5 or serial cables between RS-232 controllers and the AH66T.
Sense Inputs	Category 5 (3 conductors used) Use Cat-5 to extend sensor leads, if necessary.
System Audio	RCA Interconnect Cables

Applications

This section describes typical applications using the AH66T for audio distribution. These are all basic in nature and should be used for guideline purposes only. Each application can be augmented as needed for individual circumstances. This section is for overall design purposes.

Please see Chapter 3: AH66T Connections for specific wiring configurations.

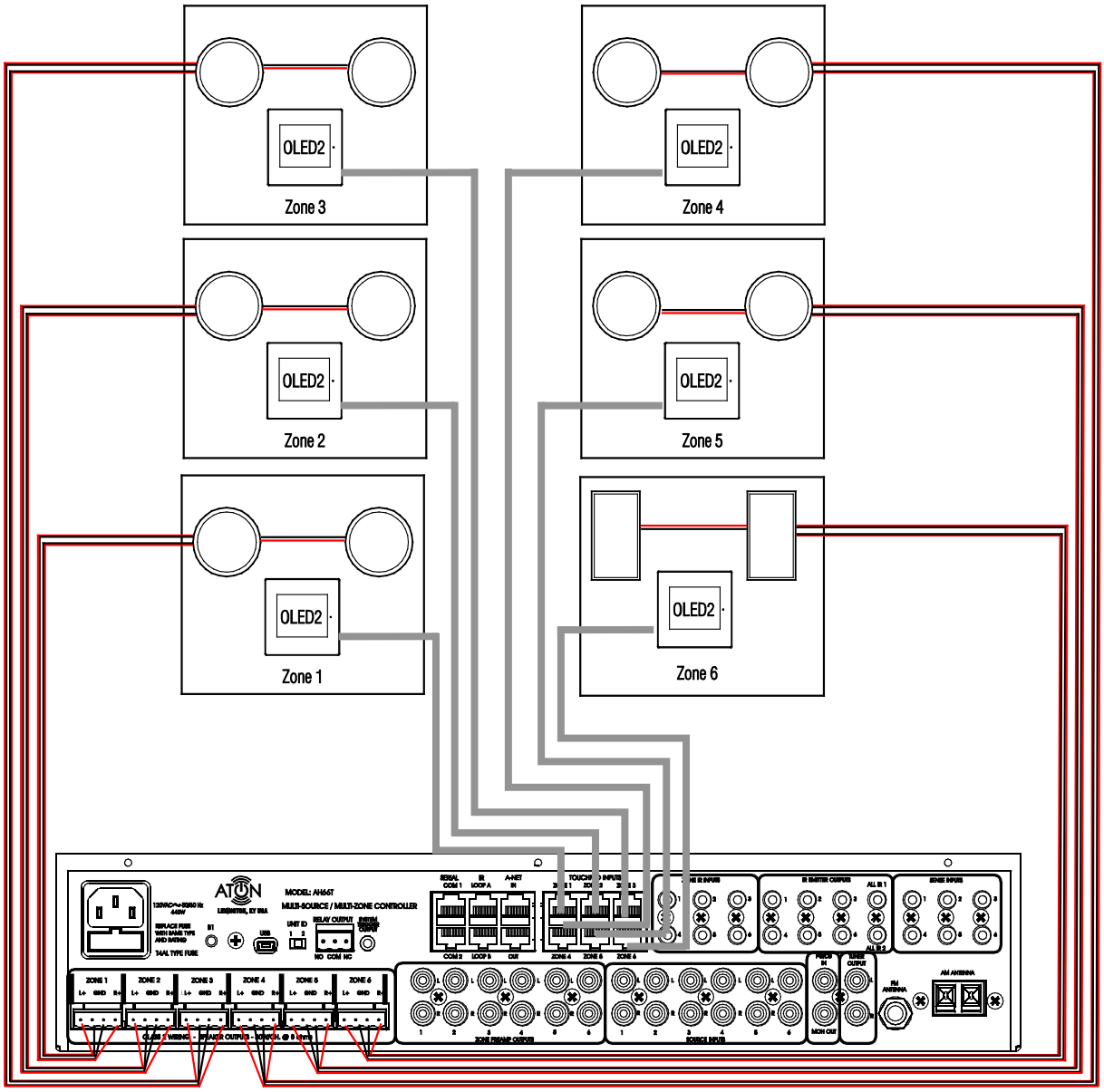
Zone/Sub-Zone Definitions

A zone is defined as an area within a system that has independent source selection ability. A zone may be one room, or several combined areas. A sub-zone is a part of a zone - it shares source selection - but has independent control of volume. Typically, sub-zones use volume controls for volume up/down.

Stereo Zones

To create an independent stereo zone, simply connect the AH66T's Speaker Outputs to a pair of speakers. Make sure to take into account the amplifier's 8 Ohm minimum impedance when choosing and configuring speakers. Volume is controlled at preamp level using IR or RS-232 commands. Any speakers connected to these channels ramp volume up/down together. Use an OLED2 touchpad or hand-held remote control to control functions (including volume) in zones with this configuration.

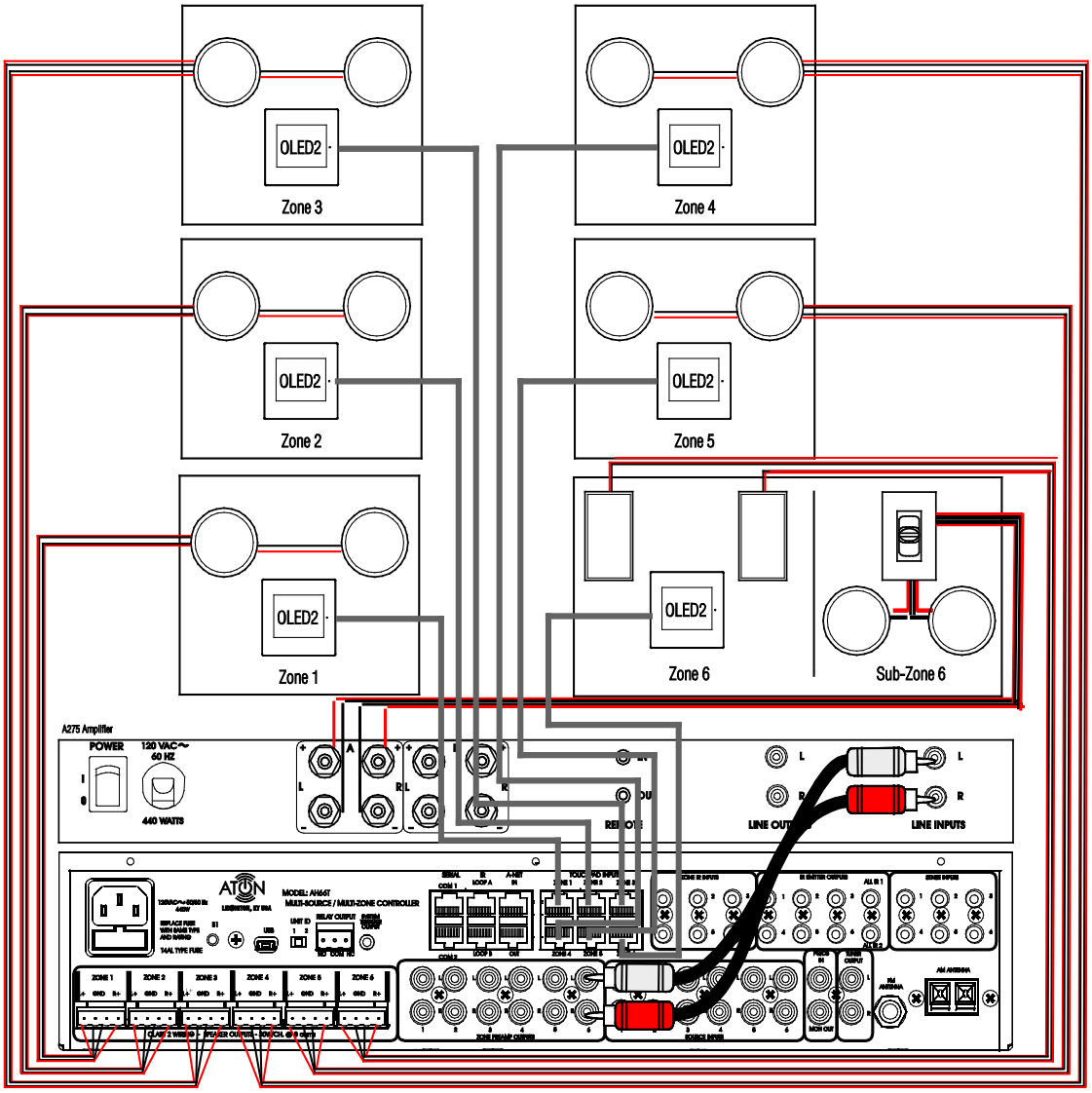
Figure 2-1 shows a typical stereo zone example.



Stereo Zones w/ Stereo Sub-Zone Using Volume Controls

Connect the Zone Preamp Output to a pair of the external amplifier's inputs. Using the ATON configuration software, configure the Zone Preamp Output to FIXED. Use an impedance matching volume control (ATON AVC100R or AVC100SL) on the external amplifier's speaker outputs to maintain independent volume control capabilities in each room. The main zone ramps volume up/down at preamp level using IR or RS-232 commands sent from an OLED2 Touchpad, or hand held remote, while the sub-zone ramps volume up/down at speaker level using the volume control. This application uses one pair of amplifier channels from the AH66T and one pair of amp channels from the external amplifier. Many areas of the home are ideal for zone/sub-zone configuration. Examples include Master Bedroom/Master Bath or Kitchen/Dining Area.

Figure 2-2 shows an example of stereo zones and a stereo sub-zone.



Stereo Zone w/ Stereo Sub-Zone Using a DLA Speaker Selector

Connect the Zone Preamp Output of the AH66T to the Audio Inputs of the ATON A275 amplifier. Using the ATON configuration software, configure the Zone Preamp Output to FIXED. Connect the amplified output from the A275 to the Amplifier Input of the DLA Speaker Selector. The main zone ramps the AH66T's internal amplifier volume up/down at preamp level using IR or RS-232 commands sent from an OLED2 Touchpad, or hand held remote, while the sub-zone ramps volume up/down at speaker level using the Speaker Selector.

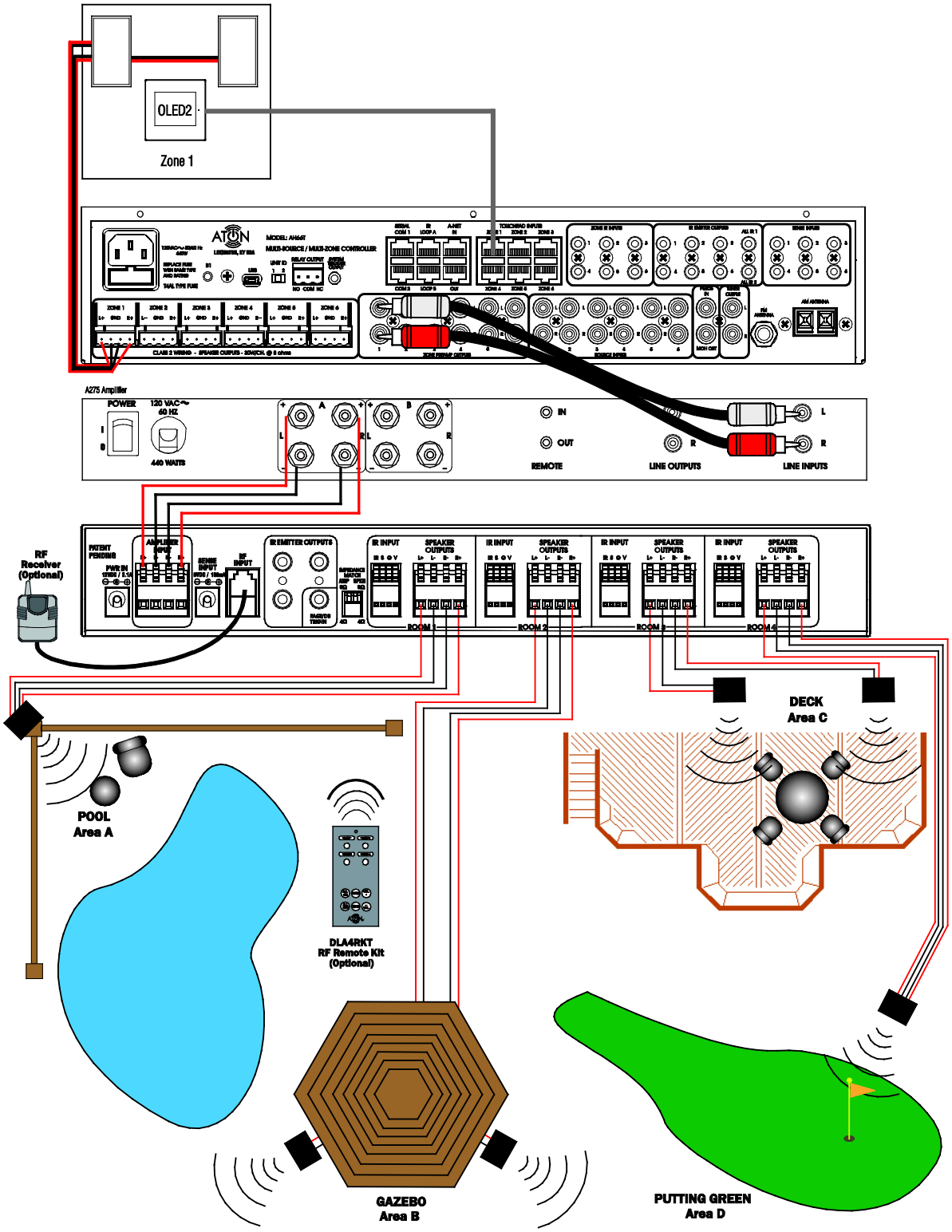
The Speaker Selector can be controlled using its front panel buttons, IR commands from handheld remotes or by using DLATP touchpads connected to the Speaker Selector. An optional ATON RF remote is also available.

The diagram on the next page shows an OLED2 controlling zone one of the AH66T. Commands from the OLED2 control the AH66T's internal amplifier. Zone one's preamp output is set to FIXED and sends audio signals to the ATON A275 amplifier which then sends its amplified output to the DLA4 Speaker Selector.

The DLA4 allows independent volume control for each speaker or speaker pair connected to the Room outputs. In this example, Areas A and D are using Dual-Voice Coil speakers and Areas B and C are using stereo pairs of speakers.

(Please visit www.atonhome.com for more information on the DLA Speaker Selector series of products and the A275 amplifier.)

Figure 2-3 shows an example using the DLA4 Speaker Selector.



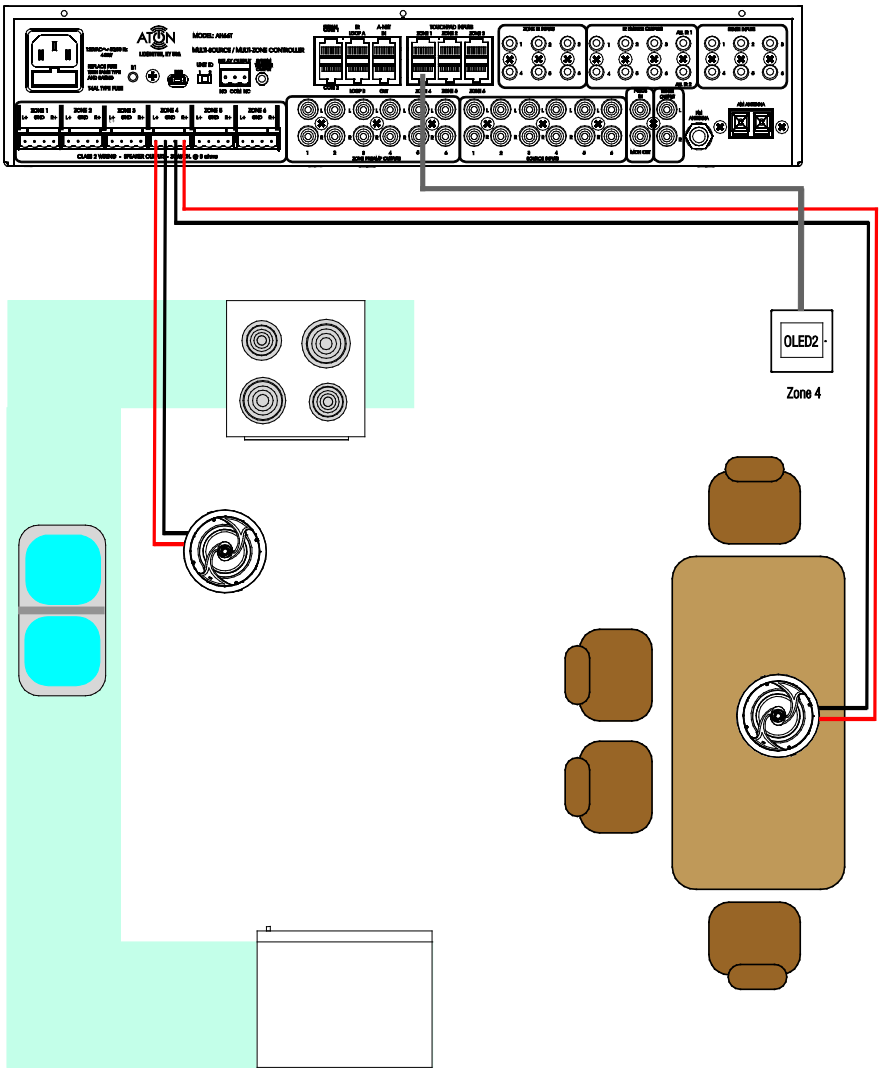
Mono Zoning

Rooms with no definite listening area (kitchens, hallways, L-shaped rooms, for example) are ideal for mono applications. The AH66T can combine stereo source signals into a single mono output that is available on two channels. Stereo / Mono selection is done on a zone by zone basis using the ATON configuration software.
(Factory Default setting is STEREO.)

Note: The amplified outputs and the preamp outputs for any particular zone are linked. They can either BOTH be stereo or BOTH be mono.

DO NOT bridge the speaker outputs of the AH66T. Each speaker output (Left and Right) will have both channels of audio information.

Figure 2-4 shows a mono zone application.



Stereo Zone w/ Mono Sub-Zone

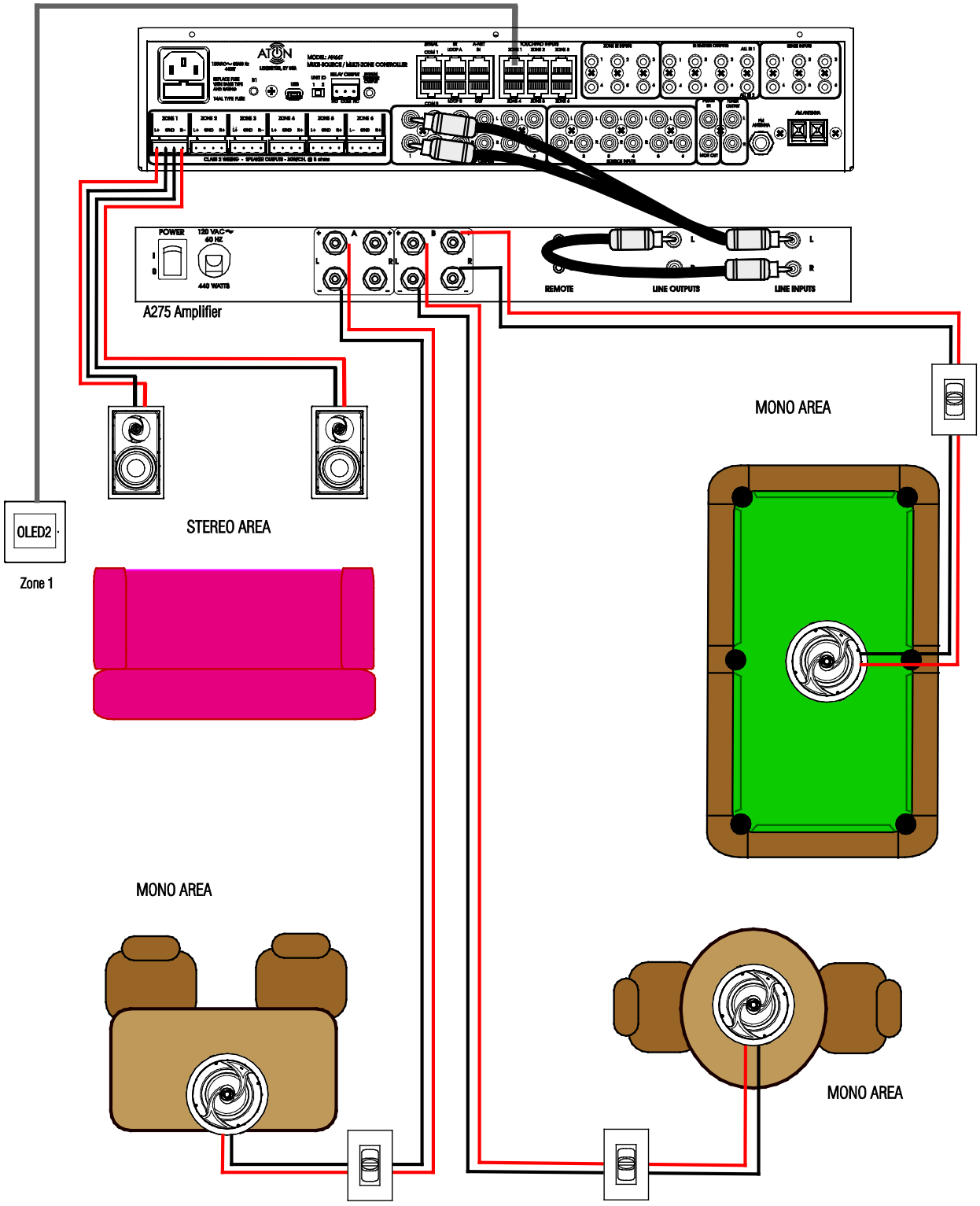
If both stereo and mono audio is needed in the same zone, set the AH66T outputs to stereo and use RCA "Y" cables to "sum" the left and right preamp outputs to the amplifier.

In the example on the following page, Zone One is set to stereo output using the ATON configuration software and the internal amplifier is connected to a pair of stereo speakers.

Since the internal amplifier and the preamp are "linked," the preamp output is also stereo. An RCA "Y" cable "sums" the left and right preamp output into the left channel input of the A275. A single RCA is connected to the left line output of the A275 and takes the "summed" signal into the right channel input of the A275.

The OLED2 controls the source selection for the zone and the volume for the stereo area's in-wall speakers connected to the AH66T's internal amplifier. The amplified output of the A275 is routed through ATON AVC100SL volume controls, providing each mono listening area with independent volume control.

Figure 2-5 shows a stereo zone / mono sub-zone application.



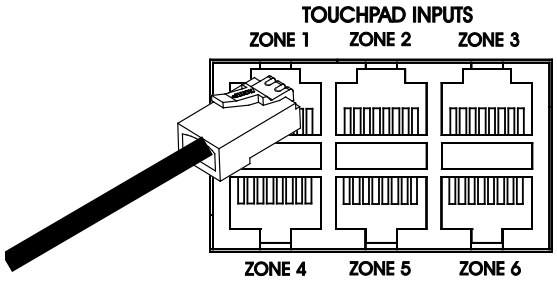
Chapter 3: AH66T Connections

The AH66T has been designed with ease of connectivity in mind. Simple RJ45, RCA, Quick Lock speaker and 3.5 mm connections cover all the bases.

OLED2 Touchpads

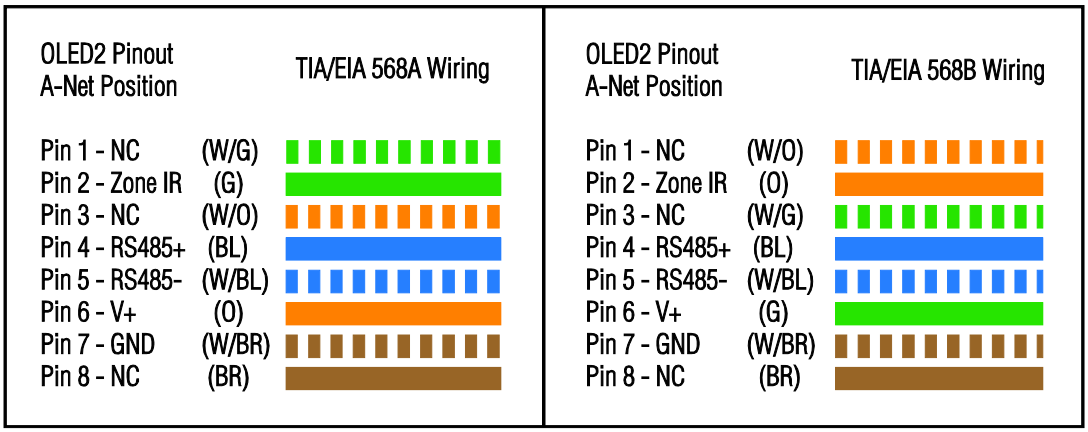
OLED2 Touchpads connect to the Touchpad Inputs on the AH66T using Cat5 wiring.

Figure 3-1: Touchpad Inputs



Use either the TIA/EIA 568A (end to end) or the TIA/EIA 568B (end to end) Cat5 wiring standard as shown in ***Figure 3-2***.

Figure 3-2: TIA/EIA568A and TIA/EIA568B color codes.



Each Touchpad Input connection can support TWO OLED2s.

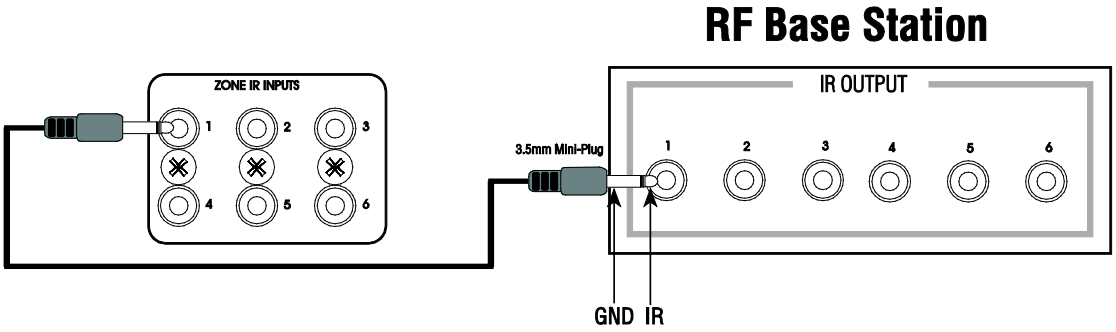
Use RJ45 Y-bridges like the L-com® ECS204-1 to facilitate wiring when connecting two OLED2s to one zone.

Zone IR Input Connections

Each zone has a 3.5mm mono IR Input connector that allows IR commands from 3rd party controllers to be used without the need to splice into the Touchpad Input connections.

Simply connect a 3.5 mono cable from the IR output port of the 3rd party controller to the Zone IR input jack for the zone you wish to control.

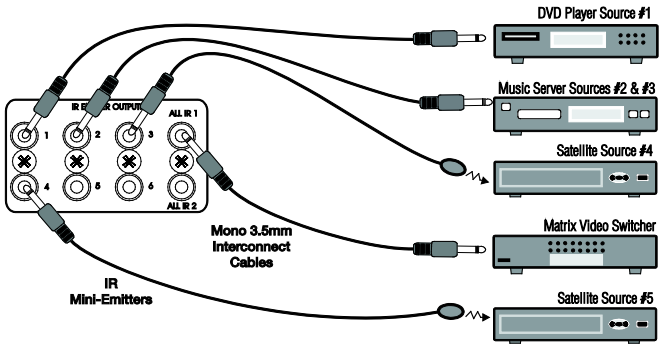
Figure 3-3: Zone IR Inputs



Source IR Output Connections

The AH66T features 6 source-specific IR emitter outputs. Each of these outputs is active only when the assigned source is selected. This makes it possible to use identical source components and still have the capability of separate control. For sources such as a multi-output music server, the ATON configuration software can route IR for either output to the same IR port, eliminating the need to use IR "Y" cables.

Figure 3-4: Source IR Outputs



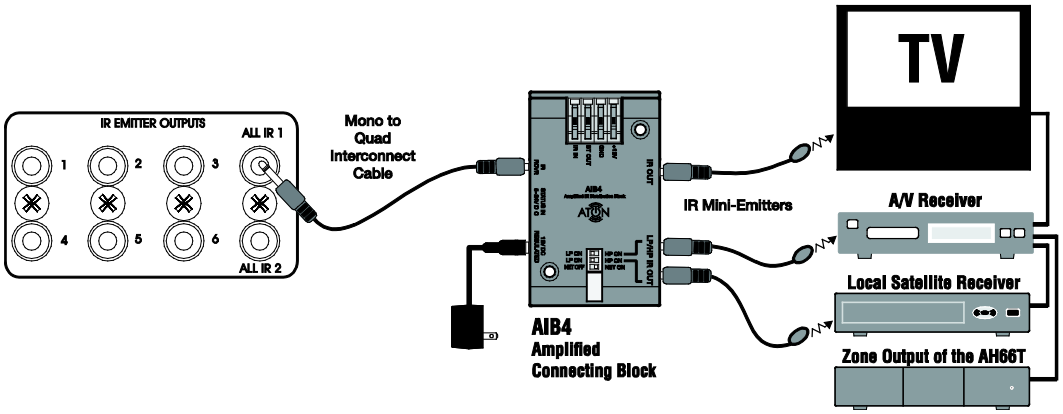
When connecting multiple AH66T chassis, it is only necessary to connect IR sources to chassis # 1. The IR LOOP PORTS provide a link between chassis to route IR from zones on the second chassis to the Source IR Outputs of the main chassis..

IR ALL Port Connections

Two IR ALL OUT ports are provided for controlling additional components such as Televisions or A/V Receivers that may require control regardless of the source currently selected. The IR ALL OUT ports are also useful when controlling several non-identical sources.

For really large installations or when a zone output of the AH66T is used as an input for a local receiver, an IR ALL OUT port can be routed to an IR Distribution Block (such as ATON's AIB4) and sent to several components.

Figure 3-5: IR ALL Ports



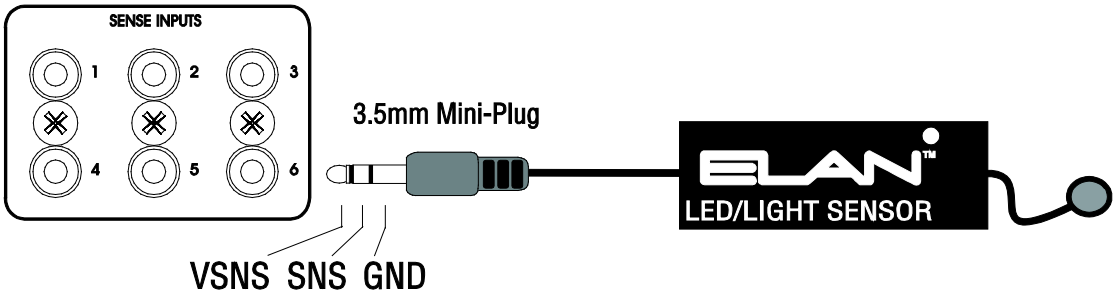
The ALL IR Out ports are only active when one or more of the six Source IR Outputs are active.

IR routing options are included in the ATON configuration software for IR routing when the system is off and when an internal tuner is selected.

Sense Input Connections

The Sense Inputs of the AH66T are used to conditionally execute zone monitor power on and off macros. The sensor is connected to the monitor and to the Sense Input corresponding to the zone number. The ATON configuration software automatically creates a macro that checks the status of the monitor prior to issuing the power command. This prevents the TV from being inadvertently turned on or off when changing sources or turning a zone on or off.

Figure 3-6: Sense Inputs



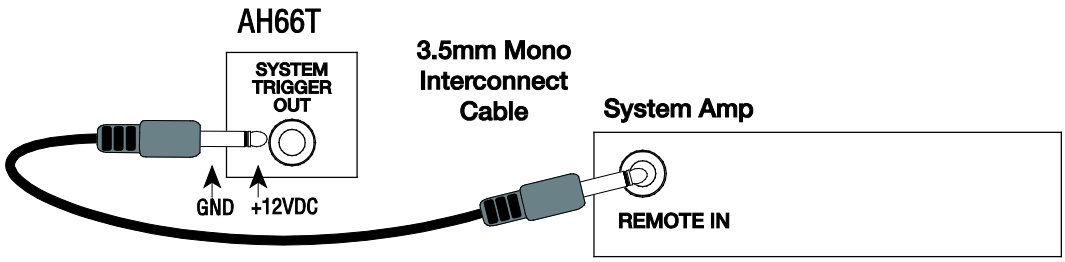
The AH66T provides +5 VDC to the TIP (VSNS) connection to power the Sensor. When the Sensor is activated, it shorts the ring (SNS) to the sleeve (GND) thereby triggering the AH66T's Sense Input.

Available ELAN sensors include: AUDIO, VIDEO, CONTACT CLOSURE, VOLTAGE, LED/LIGHT, and CURRENT/MAGNETIC FIELD sensors.

System Trigger Output Connection

When any zone of the AH66T is ON, +12VDC is present on the System Trigger Output. This can be used to activate devices like power controllers or to un-mute amplifiers.

Figure 3-7: System Trigger



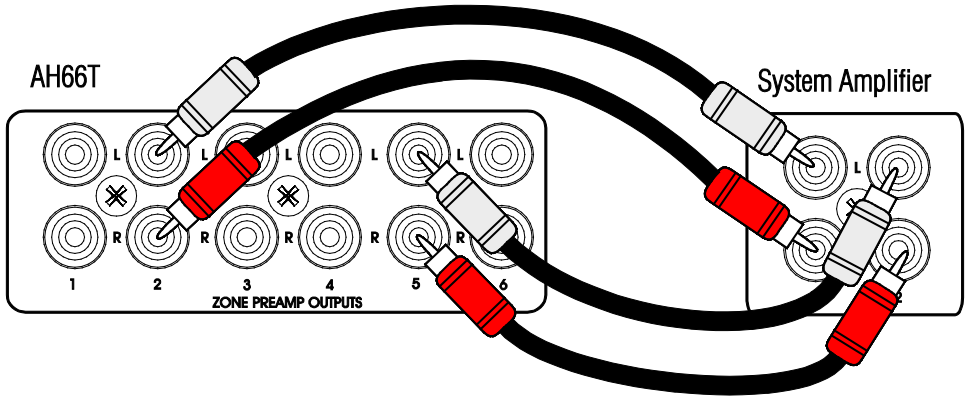
Zone Preamp Audio Outputs

Each zone of the AH66T has a corresponding Zone Preamp Output that is used to send signals to auxiliary amplifiers-typically for sub-zone applications. Each zone's audio is sent out of both the Speaker Outputs and the Zone Preamp Outputs simultaneously. Use the ATON configuration software to configure the Zone Preamp Output to FIXED or VARIABLE. **(Factory Default setting is VARIABLE)**

FIXED zone pre-amp outputs are set to full volume at all times. Typically, FIXED subzones have their own volume control in order to have independent volume Up/Down control and will always share the source that the rest of the zone is playing.

VARIABLE zones ramp volume Up and Down using IR or serial commands sent from a touchpad or hand-held remote. VARIABLE sub-zones share both source selection and volume Up/Down functionality (all speakers ramp volume Up/Down simultaneously).

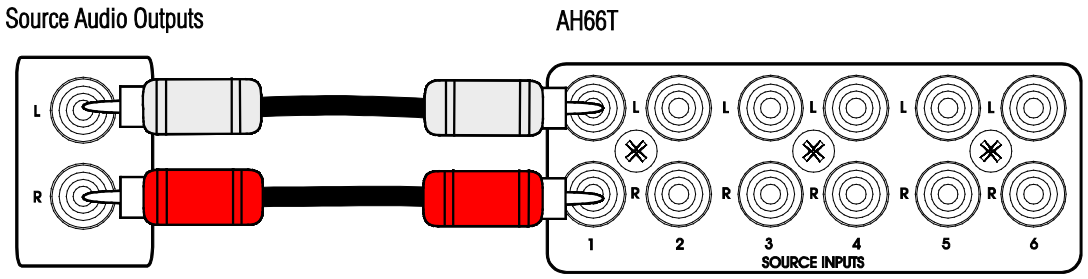
Figure 3-8: Pre-Amp Audio Outs



Source Audio Connections

There are six Audio SOURCE INPUTs on the AH66T. Each system source is connected to a specific SOURCE INPUT, allowing audio distribution to any zone of the AH66T.

Figure 3-9: Source Audio Inputs



Integrated AM/FM Tuner

The AH66T's built-in AM/FM tuner is internally connected. In systems using only one AH66T, the line level Tuner Output may be used to share the AM/FM Tuner audio with another system.

Please see page 33 for information on "sharing" tuners between dual AH66T chassis.

Metadata feedback from the integrated tuner is displayed on the OLED2 touchpads and can be displayed on 3rd party RS-232 control devices.

Speaker Outputs

The Quick Lock connectors on the AH66T accept 18 to 16 AWG speaker wires. These wires can be directly connected to speakers located throughout the home, or, for a professional appearance, can be connected to speaker wall plates using bare leads or banana plugs.

Note: Because the Speaker Outputs are always VARIABLE, it is NOT RECOMMENDED to use Volume Controls with the AH66T's internal amplifier. *Unanticipated volume functionality may result.* Subzones requiring the use of Volume Controls should utilize an external amplifier connected to the AH66T's ZONE PREAMP OUTPUTS. The ZONE PREAMP OUTPUTS should be programmed for FIXED OUTPUT in the ATON configuration software.

Figure 3-10: Speaker Connections

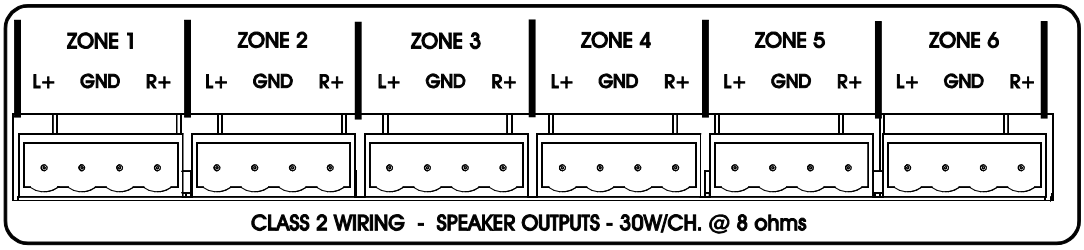
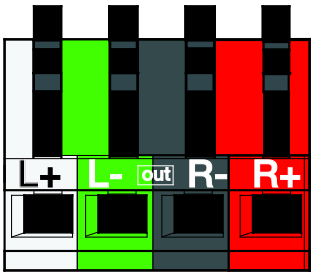


Figure 3-11: Quick Lock Connectors



To Connect Speaker leads:

1. Open each Quick Lock connector.
2. Strip approximately 1/4" of the insulation from each speaker lead.
3 Twist the speaker wires to remove any loose strands.
4. Insert the leads into the connectors.
5. Close the connectors. Tug slightly on the speaker leads to ensure connectivity.

Important Notes:

Use 18-16 AWG Stranded Copper Speaker Wire

Do Not Configure Impedance Below 8 Ohms

Do Not Bridge the Internal Amplifier

Volume Controls are NOT Recommended

Do not allow wire strands to short

Connect speakers with power off

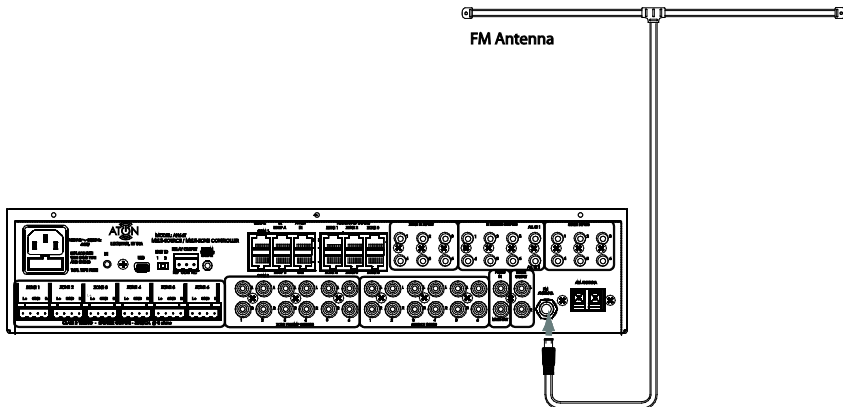
Antenna Connections

FM Antenna

An FM dipole antenna is included with the AH66T for your convenience. The FM antenna is terminated with an F-Connector for ease of installation. For improved reception, the FM antenna may be located in the attic. Use co-axial cable to extend the wire run. If you live in an area where the FM signals are particularly weak, it may be necessary to install an outside or rooftop antenna.

If standard FM broadcast frequencies are available via your cable service, you may connect your 75 ohm FM antenna jack to your cable system. Please contact your cable service to discuss this option.

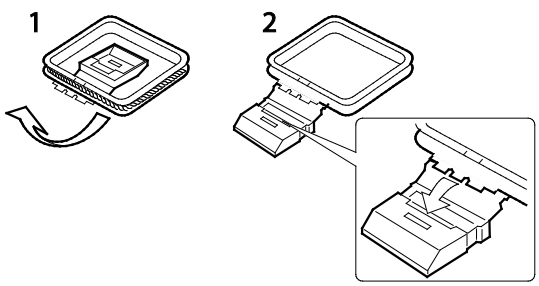
Figure 3-12: FM Antenna Connection



AM Indoor Loop Antenna

The high-performance AM loop antenna provided with this unit is sufficient for good reception in most areas. To stand the loop antenna on a surface, fix the claw to the slot.

Figure 3-13: AM Antenna Assembly

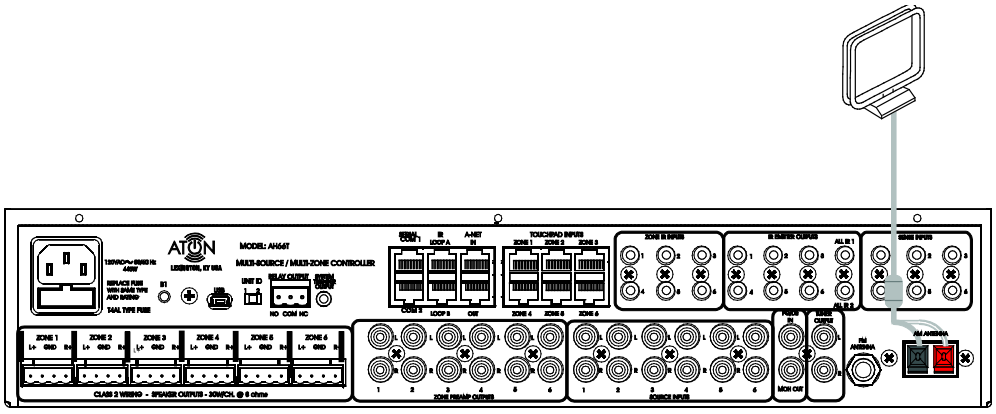


AM Antenna Connection (Continued)

The AM antenna is connected to the terminals marked AM/GND. Connect the striped antenna lead to the RED terminal. Press the lever, insert the end of the wire, and then release the lever. Make sure it is fastened securely by pulling the wire gently. Make sure only the bare, stripped wire is inserted in the jack and that no plastic insulation is preventing contact between the antenna wire and terminal.

Place the antenna on a shelf, for example, or hang it on a window frame, etc., in the direction which gives the best reception, as far away as possible from the entire system, speaker cords and power cords, to prevent unwanted noise.

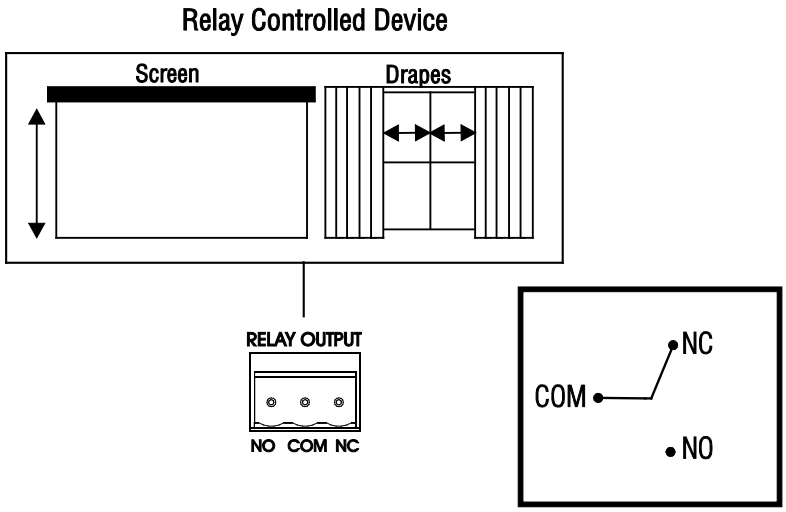
Figure 3-14: AM Antenna Connection



Relay Output Connection

Each AH66T provides one relay that can be programmed using the ATON configuration software to provide automated events such as lift operation, screen operation, and drapery control. Connections include COMMON, NORMALLY CLOSED and NORMALLY OPEN.

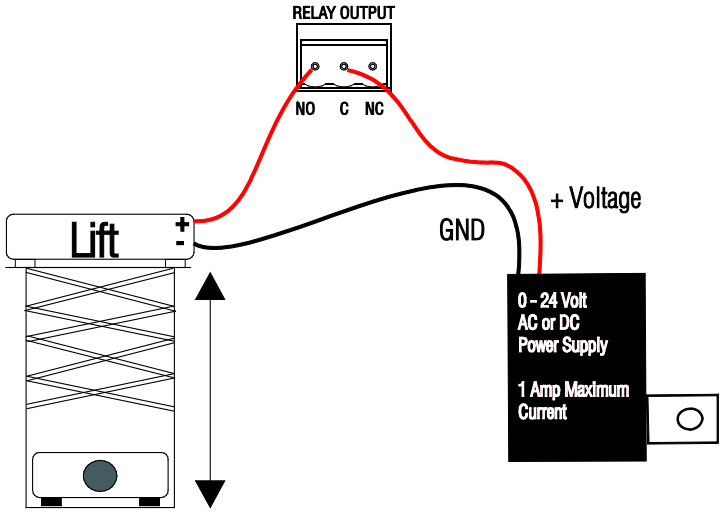
Figure 3-15: Relay Connection



If a voltage trigger is required, an external power supply can be connected to the AH66T's relay.

The relay is rated for a maximum of 24 Volts, AC or DC and a maximum of one amp of current. Do not connect to 120 VAC or 240 VAC house line wiring!

Figure 3-16: Relay Connection with Power Supply



Multi-Chassis Connections

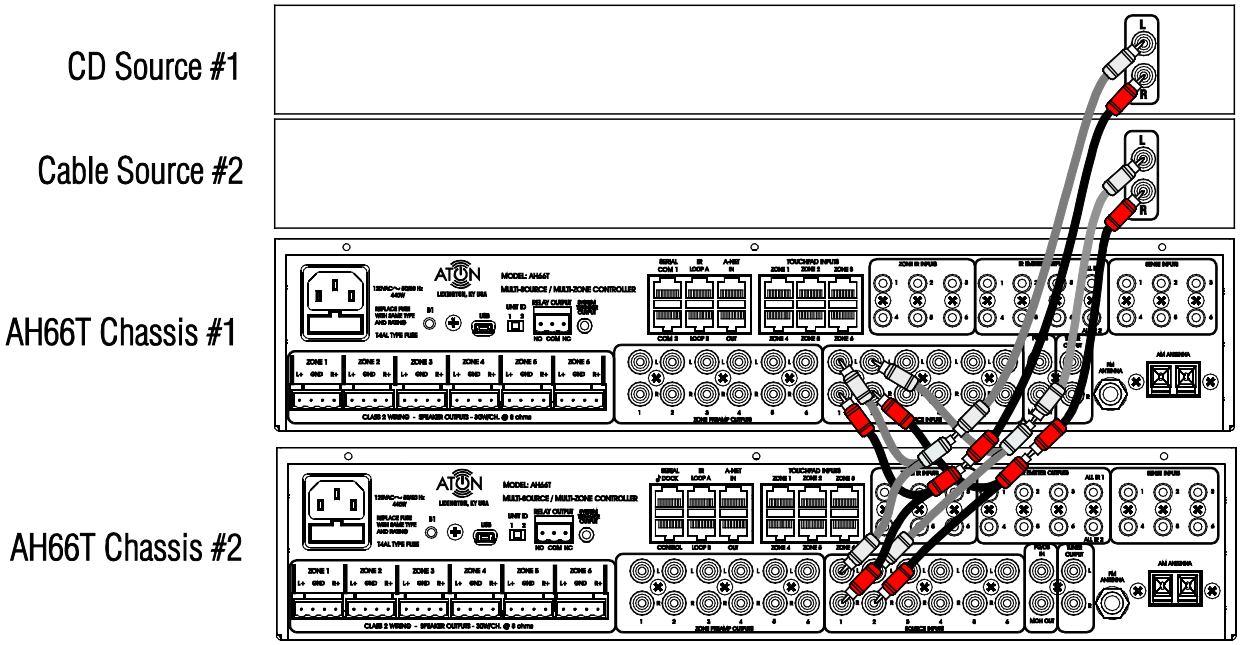
Additional connections are required when using two AH66Ts in a system. These connections allow IR, A-Net information, Source Audio and RS-232 Control to be shared between the chassis.

Source Audio Inputs

In a dual AH66T system, it is necessary to use RCA "Y" cables to allow Source Audio to be shared between the two chassis. The exception to this is the integrated AM/FM Tuner, which is covered starting on page 34 of this manual.

Integrating each source will require two "Y" cables, one for the left channel audio and one for the right channel audio. Connect the male ends to the Source Audio Inputs of the AH66Ts and the female ends to RCA cables connected to the sources' audio outputs. Be sure that each source connects to the same Source Audio Input on BOTH chassis.

Figure 3-17: Source Audio "Y" Connections

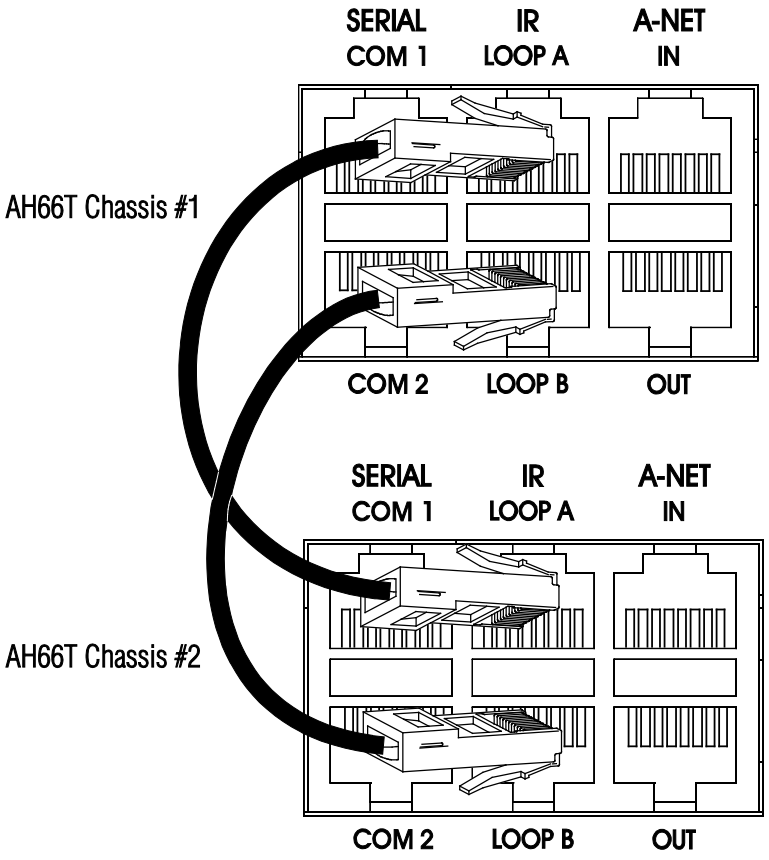


IR Loop Connections

The IR Loop Connection allows IR commands received by the second AH66T chassis to be transmitted to the main chassis.

Connect LOOP A of the second chassis to LOOP A of the main chassis and LOOP B of the second chassis to LOOP B of the main chassis.

Figure 3-18: IR Loop Connections



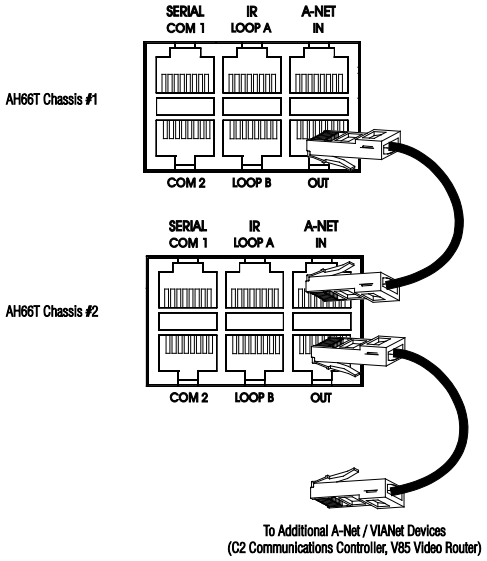
You may use TIA/EIA 568A, TIA/EIA 568B or the A-Net wiring color code as shown on page 32 for the IR Loop Connections.

A-Net Loop Connections

The A-Net Loop Connection allows A-Net information to be shared between chassis. A-Net provides status feedback to OLED2 Touchpads and is used to transmit serial data and Sense Input information between AH66T chassis. A-Net allows ELAN's C2 Communication Controller, V85 or V8 Video Routers to interface with the AH66T.

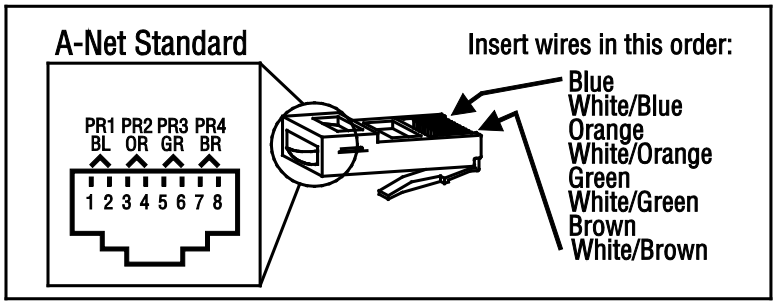
Connect the A-Net **OUT** of the main chassis to the A-Net **IN** of the second chassis. Connect the A-Net **OUT** of the second chassis to the VIANet **IN** of the C2, etc.

Figure 3-19: A-Net Loop Connection



The A-Net color code is NOT the same as TIA/EIA568A or TIA/EIA568B. A-Net requires a proprietary color code to function properly.

Figure 3-20: A-Net Color Code



It is important to use this color code for A-Net connections.

A-Net data travels on conductors 3 and 4 and a twisted pair must be maintained for proper functionality. Both the TIA/EIA568A and TIA/EIA568B color codes split this pair.

Use this color code for VIANet connections between ELAN equipment also.

AM/FM Tuner Connections

Default Operation (Linking Tuners)

In this configuration, both AH66T tuners function in tandem with each other. Any station selected on one tuner will automatically be selected on the other tuner as well. In this system, there is one AM/FM tuner and up to six additional sources.

This method does not use RCA cables to share tuner audio. The A-Net Loop connection must be made to allow the tuners to be synchronized.

NOTE: Antennas must be connected to BOTH AH66Ts.

Optional Setup (Sharing Tuners)

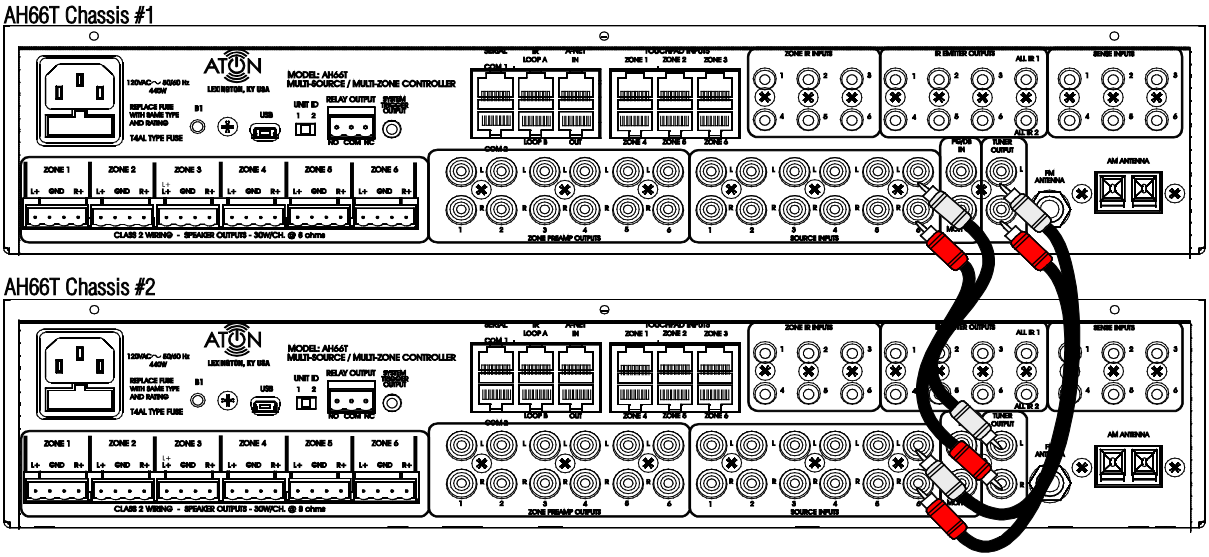
In this configuration, each AH66T has two tuners as sources (one internal and one shared from the other AH66T) and up to five additional sources.

Connect the TUNER OUTPUT from the main AH66T chassis to SOURCE INPUT # 6 of the second AH66T chassis and connect the TUNER OUTPUT of the second chassis to SOURCE INPUT # 6 of the main chassis. This connection uses standard RCA cables.

In the ATON configuration software, select the option to "**share tuners**."

NOTE: Antennas must be connected to BOTH AH66Ts.

Figure 3-21: Tuner Connections for Shared Tuners



In the ATON configuration software, it is necessary to select an IR Emitter Output to be active when an internal Tuner is selected. This allows IR routing (specifically, ALL IR OUT ports) to function properly.

Chapter 4: System Expansion

NOTE:

DEFAULT configuration of the AH66T is described in Appendix C of this manual.

The AH66T has two RS232 ports that allow integration of the Sonance® FS-22 or IW-22 iPort® docking stations, the RadioRA® 2 Lighting System, the Sirius® SR-H2000 Satellite Radio Tuner or control by a 3rd party serial control device.

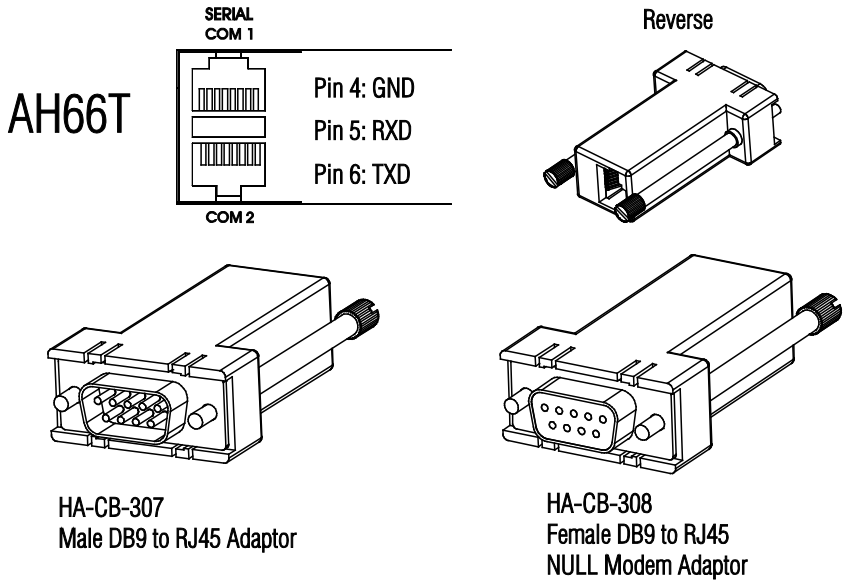
A single chassis can accommodate any two of the above options. A dual AH66T system allows any combination of the above, to a maximum of four.

NOTE: Only Comm Port # 1 of chassis # 1 can be assigned to be the interface for 3rd party control systems.

Comm Port configuration programming is done using the ATON configuration software.

The two DB9M-RJ45 adapters (included) are used to connect to the serial ports of the iPod dock and the RadioRA2 lighting system. The DB9F-RJ45 NULL Modem adapter (included) is used to interface with 3rd party control devices.

Figure 4-1: DB9 to RJ45 Adapters



Using a Cat5 cable, connect the RJ45 side of the adapter to the correct Comm Port for the device, as designated in the ATON configuration software. Connect the DB9 side of the adapter to the serial device.

When integrating 3rd party devices, ATON recommends verifying correct operation of the 3rd party equipment **prior** to integration with the AH66T.

This manual deals primarily with connections required between the AH66T and the 3rd party equipment. You should always have the manuals for the equipment you are incorporating into the AH66T system for reference.

iPort® Integration

FS-22

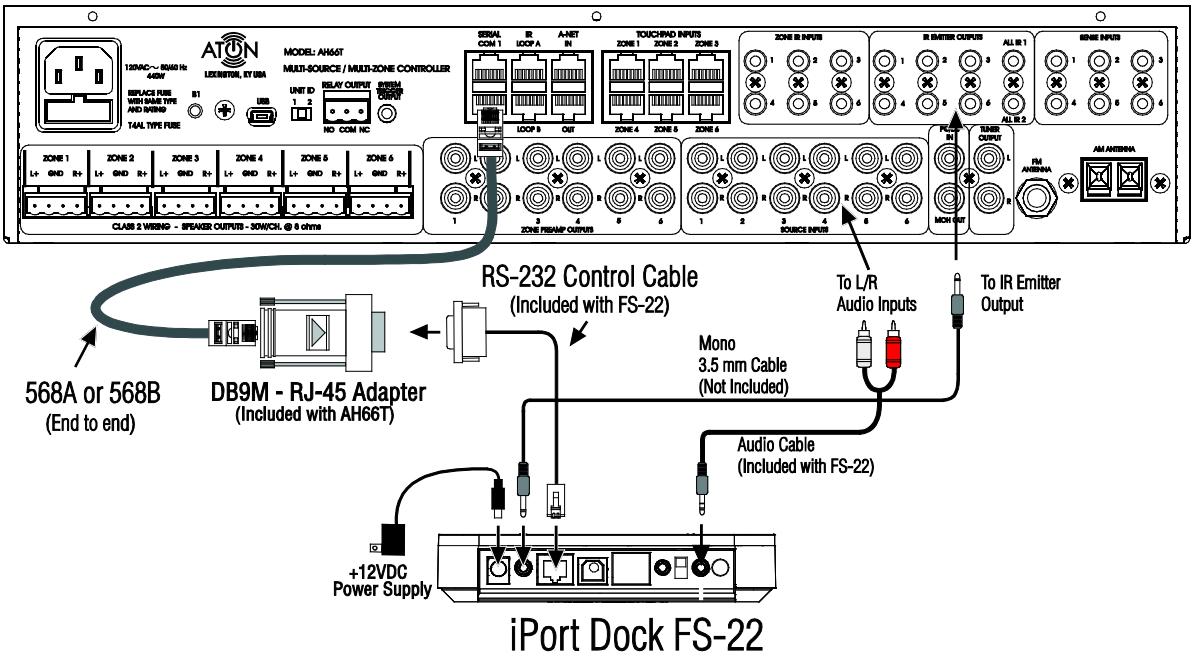
In the ATON configuration software determine which Comm Port and Source Audio Input you will be using to connect to the iPort. Connect all iPort components according to the FS-22 manual. Verify functionality of the FS-22.

Connect a Cat5 (TIA/EIA568A or B) from the selected Comm Port of the AH66T to the **DB9M-RJ45** adapter. Connect the RS-232 Control Cable (included with the FS-22) to the adapter.

Maximum wire run length for RS232 control with this method is approximately 8 ½' (2.6 m). Use a Sonance® Balanced Audio Kit to locate the FS-22 up to 500' (152.4 m) from the AH66T.

If IR control is also required, connect the IR Emitter Output of the AH66T to the IR input port of the iPort. Connect the Audio Cable (included with the FS-22) to the Source Audio Input of the AH66T.

Figure 4-2: FS-22 Connections



iPort feedback is only displayed on the OLED2s. It does not "pass through" to 3rd party controllers.

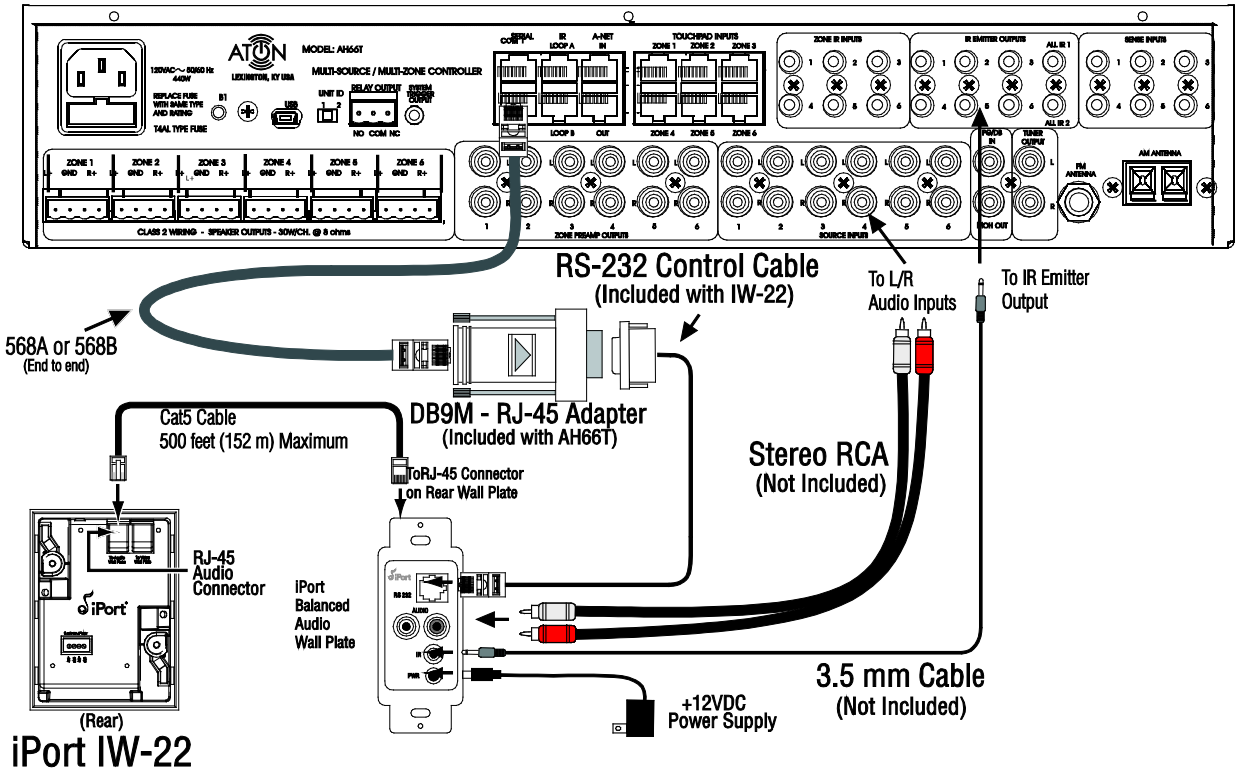
iPort® Integration (Continued)

IW-22

In the ATON configuration software determine which Comm Port and Source Audio Input you will be using to connect to the iPort. Connect all iPort components according to the IW-22 installation manual. Verify functionality of the IW-22.

Connect a Cat5 (TIA/EIA568A or B) from the selected Comm Port of the AH66T to the **DB9M-RJ45** adapter. Connect the RS-232 Control Cable (included with the IW-22) to the adapter. If IR control is also required, connect the IR Emitter Output of the AH66T to the IR input port of the IW-22's Audio Wall Plate. Connect the audio output of the IW-22 Audio Wall Plate to the Source Audio Input of the AH66T.

Figure 4-3: IW-22 Connections



iPort feedback is only displayed on the OLED2s. It does not "pass through" to 3rd party controllers.

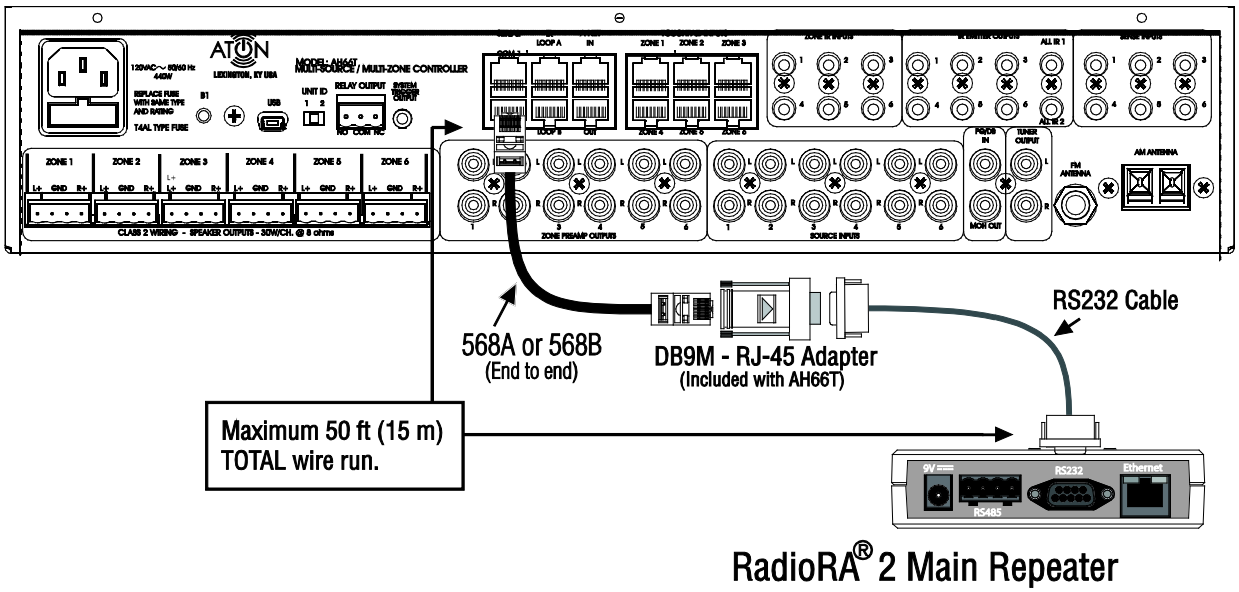
RadioRA® 2 Integration

In the ATON configuration software determine which Comm Port you will be using to connect to the lighting system. Connect all RadioRA2 components according to the RadioRA2 installation manual. Verify functionality of the RadioRA2.

Connect a Cat5 (TIA/EIA568A or B) from the selected Comm Port of the AH66T to the **DB9M-RJ45** adapter. Connect a serial cable from the adaptor to the RS-232 port of the RadioRA2 MAIN Repeater.

The MAXIMUM total wire run length from the AH66T's Comm Port to the RS-232 port of the MAIN Repeater is 50' (15m).

Figure 4-4: RadioRA 2 Connections



RadioRA feedback is only displayed on the OLED2s. It does not "pass through" to 3rd party controllers.

Sirius® SR-H2000 Satellite Radio Integration

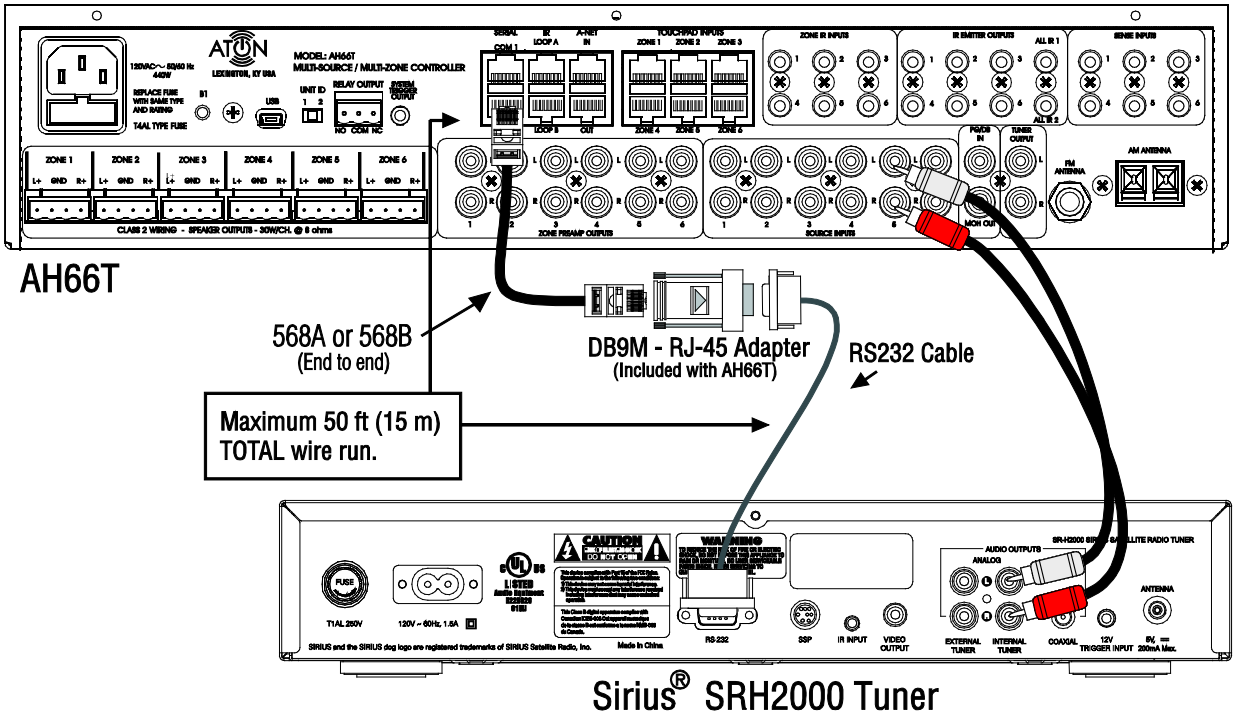
In the ATON configuration software determine which Comm Port you will be using to connect to the tuner. Connect all Sirius Radio components according to the SR-H2000 installation manual. Verify functionality of the SR-H2000.

Note: The SR-H2000 must be set to accept RS-232 control using its Menu settings.

Connect a Cat5 (TIA/EIA568A or B) from the selected Comm Port of the AH66T to the **DB9M-RJ45** adapter. Connect a serial cable from the adaptor to the RS-232 port of the Sirius tuner.

The MAXIMUM total wire run length from the AH66T's Comm Port to the RS-232 port of the Sirius tuner is 50' (15m).

Figure 4-5: Sirius SR-H2000 Connections



Sirius Tuner feedback is only displayed on the OLED2s. It does not "pass through" to 3rd party controllers.

The Sirius SCH2P Tuner may also be incorporated if desired. The connections for the SCH2P are identical to the SR-H2000 connections.

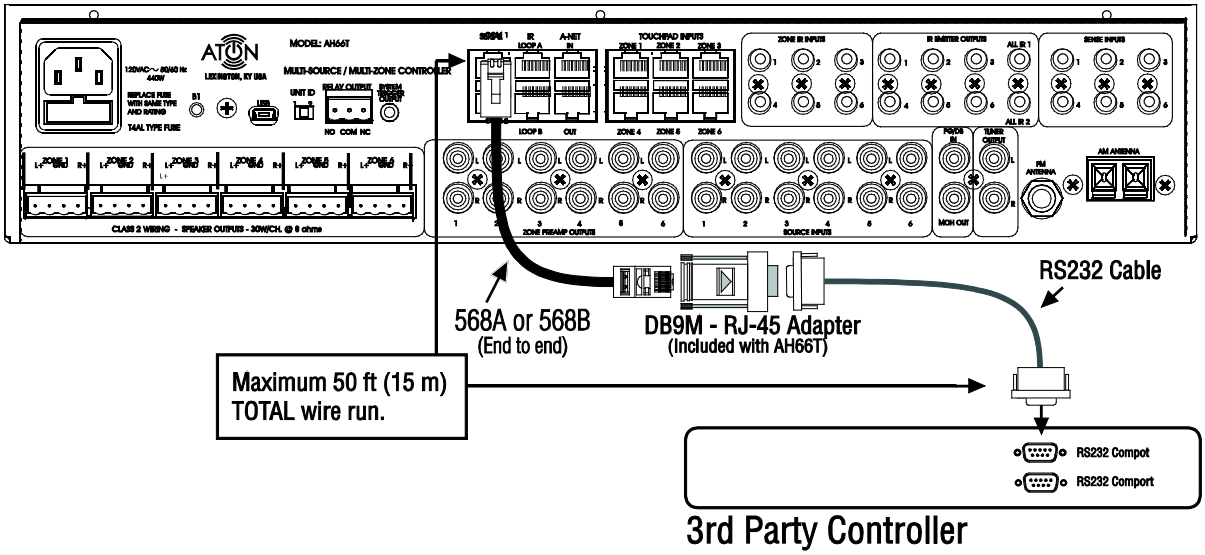
3rd Party RS-232 Control Integration

In the ATON configuration software configure Com 1 of the AH66T (chassis # 1 only) for 3rd party serial control.

Connect a Cat5 (TIA/EIA568A or B) from Com 1 of the AH66T to the **DB9F-RJ45 NULL Modem** adapter. Connect a serial cable from the adaptor to the RS-232 port of the 3rd party control device

The MAXIMUM total wire run length from the AH66T's Comm Port to the RS-232 port of the 3rd party controller is 50' (15m).

Figure 4-6: RS-232 Connection



You must download RS-232 configuration settings to the AH66t to enable it to work with the 3rd party controller being used. This programming is done in the ATON configuration software. Connect a USB to USB-Mini from the computer to the AH66T to download these settings.

See Appendix A for the Serial Protocol and command set.

ELAN® C2 Communication Controller Integration

The ELAN C2 Communication Controller integrates paging, telephone and home automation features with the AH66T. The C2 provides Music On Hold, Paging, Door Chime and Relay Activation features.

The audio from the INTERNAL TUNER of the AH66T is routed out of the MOH OUT port and into the C2. The C2 sends a Trigger signal when a Page or Door Chime is initiated that causes the AH66T to mute any audio that is playing and pass the Page or Door Chime audio to the AH66T's zones at a preset level. The C2's Relays are controlled by touchtone telephones.

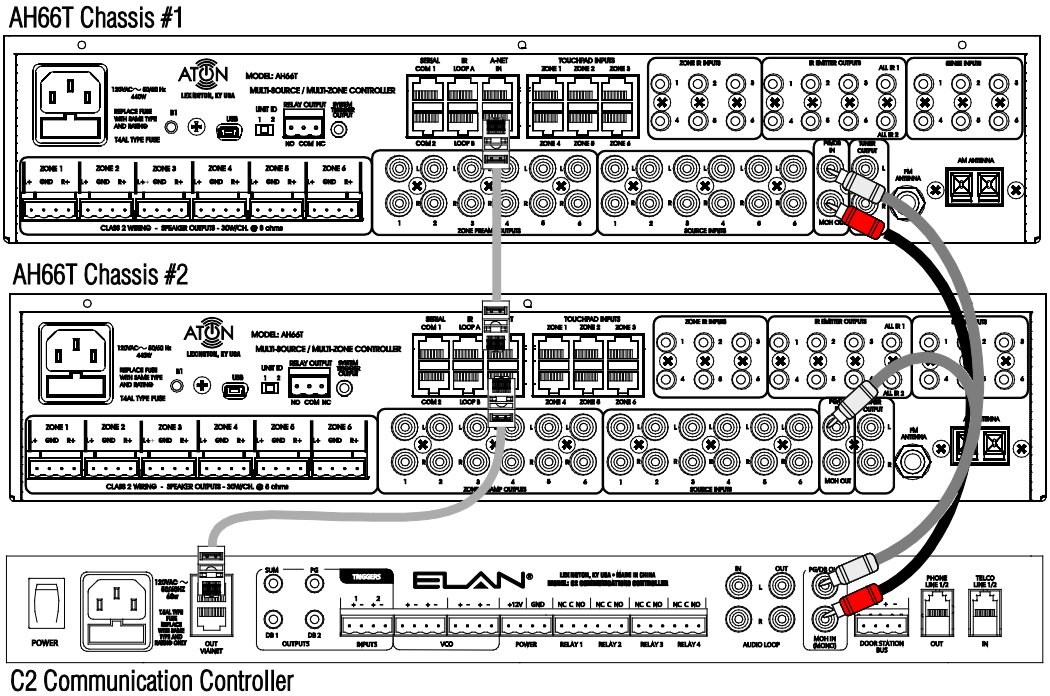
Make all C2 connections to phone lines, door stations and relay controlled devices as shown in the C2 manual.

Connect the MUSIC ON HOLD OUTPUT of the AH66T (MAIN chassis only) to the MUSIC ON HOLD INPUT of the C2. Connect the PG/DB AUDIO OUTPUT of the C2 to the PG/DB INPUT of the AH66T.

If two AH66Ts are being integrated, use an RCA "Y" cable from the PG/DB AUDIO OUTPUT of the C2 to the AH66T's PG/DB AUDIO INPUT.

Connect the A-Net OUT from AH66T chassis # 1 to the A-Net IN of AH66T chassis # 2. Connect the A-Net OUT of AH66T chassis # 2 to the VIANet IN of the C2.

Figure 4-7: C2 Connections



Video Switching

HDR44 Video Router Integration

The ATON HDR44 is a High Definition Video Router that provides the ability to view up to 4 different video sources in 4 separate areas (or 8 areas using an additional HDR44).

The HDR44 is dedicated to the first 4 sources and the first 4 zones of the AH66T. In a dual AH66T system, one HDR44 is dedicated to the first chassis and the second HDR44 is dedicated to the first 4 zones of the second AH66T.

Video Input # 1 of the HDR44 is “linked” to Audio Input # 1 of the AH66T; Video Input # 2 of the HDR44 is “linked” to Audio Input # 2 of the AH66T and so forth.

Video Output # 1 of HDR44 # 1 is dedicated to Zone # 1 of the AH66T; Video Output # 2 of HDR44 # 1 is dedicated to Zone # 2 of the AH66T and so forth.

Video Output # 1 of HDR44 # 2 is dedicated to Zone # 7 of the AH66T; Video Output # 2 of HDR44 # 2 is dedicated to Zone # 8 of the AH66T and so forth.

Note: Zones 5 and 6 of the first AH66T and zones 11 and 12 of the second AH66t will not have a video feed.

Install the HDR44 and connect the ATON R44WP wall plates as described in the HDR44 manual. For this application, the HDR44 audio and source IR connections are NOT used. Using the ATON R44IRM remote, verify correct video switching.

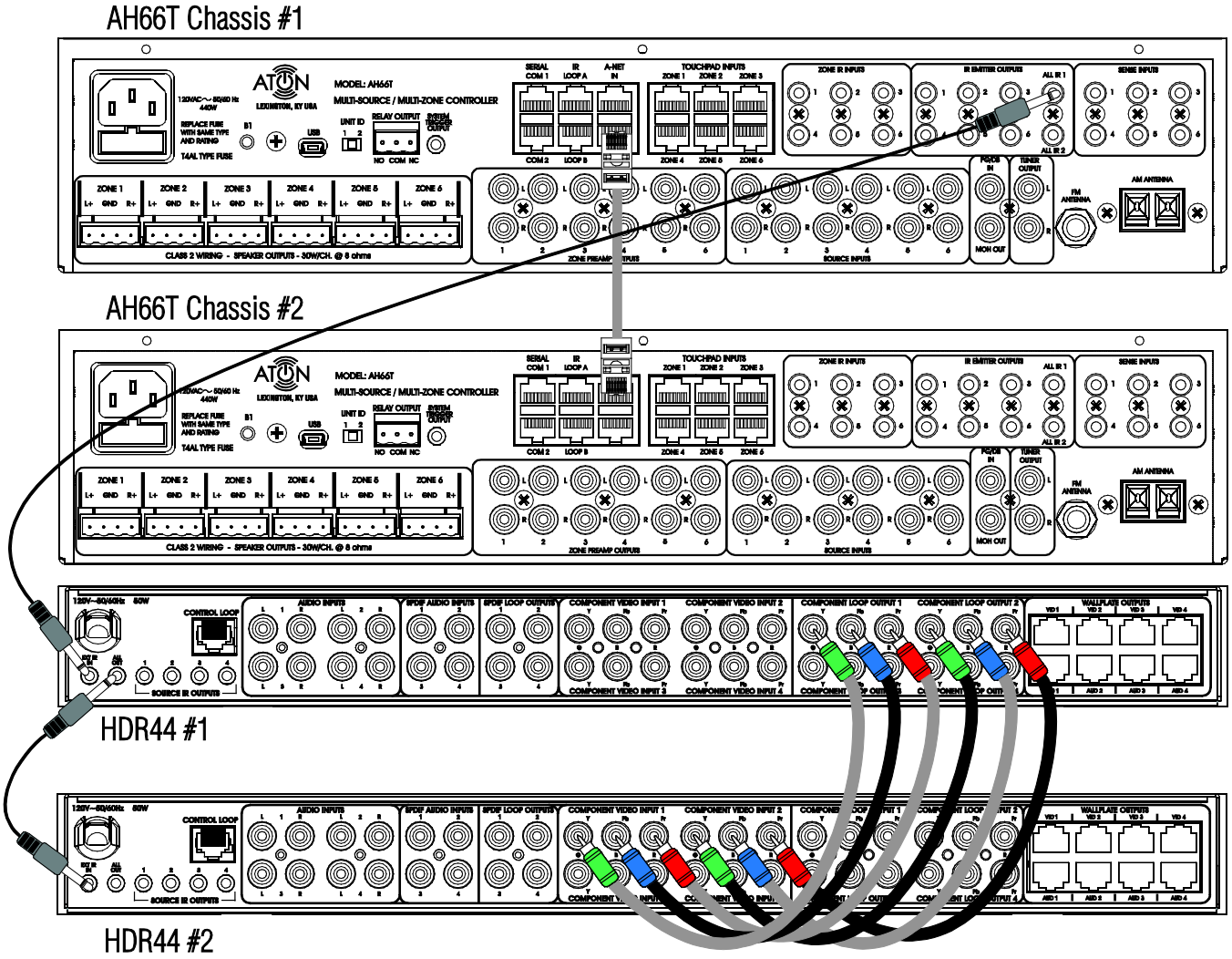
Connect one of the IR ALL Ports of the MAIN AH66T chassis to the EXTERNAL IR INPUT of the MAIN HDR44. If two HDR44s are being used, connect the ALL OUT port of the first HDR44 to the EXTERNAL IR IN of the second chassis.

For dual HDR44 systems, be sure to set the unit IDs correctly for each chassis. See the HDR44 application notes at www.atonhome.com.

The diagram on the next page shows a dual AH66T system with dual HDR44s.

For clarity, only the IR connection from the AH66T to the HDR44s, the A-Net connection and the video loop connections for sources one and two are shown.

Figure 4-8: HDR44 Connections



ELAN® V85 Component Video Router Integration

The ELAN® V85 is a Component Video Router that provides the ability to view up to 8 different video sources in 8 separate areas (or 16 areas using an additional V85).

Note: When installed in an AH66T system, the V85 is limited to six video inputs and six video outputs. In a dual AH66T system using two V85s you have six additional video outputs.

In a dual AH66T system, one V85 is dedicated to the first chassis and the second V85 is dedicated to the second AH66T.

Video Input # 1 of the V85 is “linked” to Audio Input # 1 of the AH66T; Video Input # 2 of the V85 is “linked” to Audio Input # 2 of the AH66T and so forth.

Video Output # 1 of V85 # 1 is dedicated to Zone # 1 of the AH66T; Video Output # 2 of V85 # 1 is dedicated to Zone # 2 of the AH66T and so forth.

Video Output # 1 of V85 # 2 is dedicated to Zone # 7 of the AH66T; Video Output # 2 of V85 # 2 is dedicated to Zone # 8 of the AH66T and so forth.

Install the V85 and connect video sources and the ELAN CVRM wall plates as described in the V85 manual.

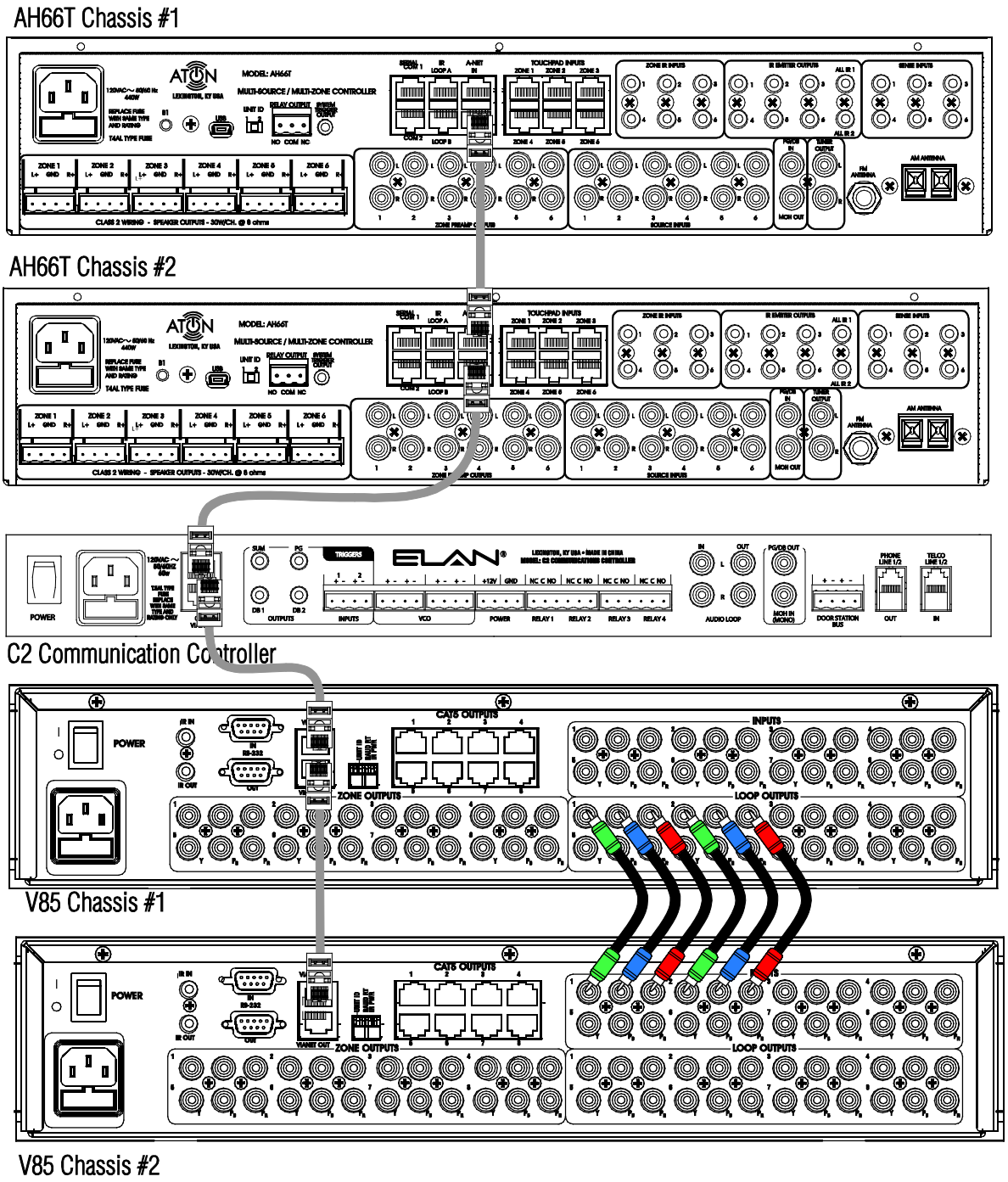
Connect the A-Net OUT of the MAIN AH66T chassis to the A-Net IN of the second AH66T. If a C2 is being installed, connect the A-Net OUT of the second AH66T to the VIANet IN of the C2. Connect the VIANet OUT of the C2 to the VIANet IN of the V85. If two V85s are being installed, connect the VIANet out of the first V85 to the VIANet IN of the second V85.

Be sure to set the V85 unit ID correctly. See the V85 installation manual for details.

The diagram on the next page shows a dual AH66T system with a C2 Communication Controller and dual V85s.

For clarity, only the A-Net connections from the AH66Ts to the C2, the VIANet connections from the C2 to the V85s and the video loop connections for sources one and two are shown.

Figure 4-9: V85 Connections



ELAN® V8 Composite Video Router Integration

The ELAN® V8 is a Composite Video Router that provides the ability to view up to 8 different video sources in 8 separate areas (or 16 areas using an additional V8).

Note: When installed in an AH66T system, the V8 is limited to six video inputs and six video outputs. In a dual AH66T system using two V8s you have six additional video outputs.

In a dual AH66T system, one V8 is dedicated to the first chassis and the second V8 is dedicated to the second AH66T.

Video Input # 1 of the V8 is "linked" to Audio Input # 1 of the AH66T; Video Input # 2 of the V8 is "linked" to Audio Input # 2 of the AH66T and so forth.

Video Output # 1 of V8 # 1 is dedicated to Zone # 1 of the AH66T; Video Output # 2 of V8 # 1 is dedicated to Zone # 2 of the AH66T and so forth.

Video Output # 1 of V8 # 2 is dedicated to Zone # 7 of the AH66T; Video Output # 2 of V8 # 2 is dedicated to Zone # 8 of the AH66T and so forth.

Install the V8 as described in the V8 manual.

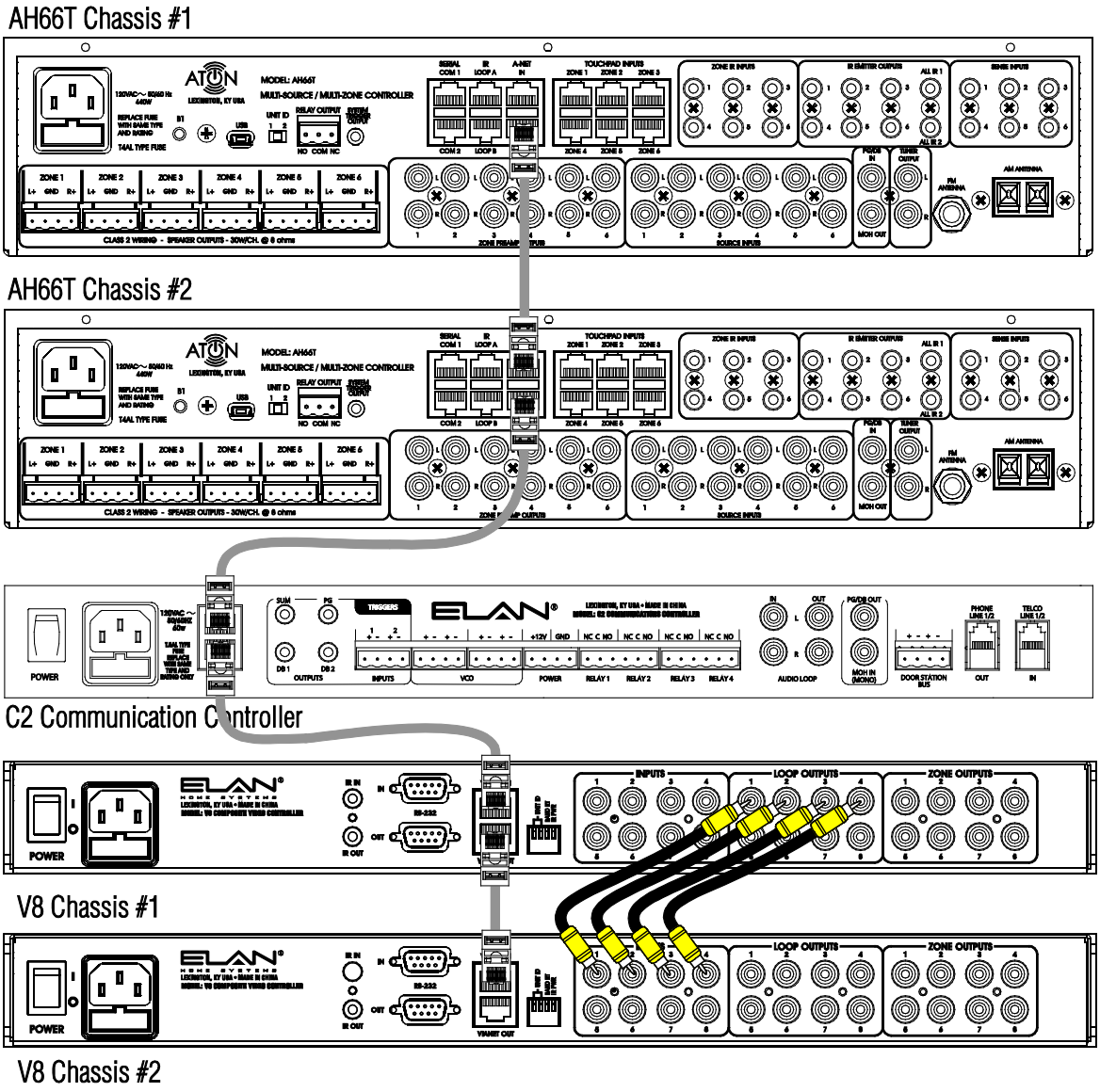
Connect the A-Net OUT of the MAIN AH66T chassis to the A-Net IN of the second AH66T. If a C2 is being installed, connect the A-Net OUT of the second AH66T to the VIANet IN of the C2. Connect the VIANet OUT of the C2 to the VIANet IN of the V8. If two V8s are being installed, connect the VIANet out of the first V8 to the VIANet IN of the second V8.

Be sure to set the V8 unit ID correctly. See the V8 installation manual for details.

The diagram on the next page shows a dual AH66T system with a C2 Communication Controller and dual V8s.

For clarity, only the A-Net connections from the AH66Ts to the C2, the VIANet connections from the C2 to the V8s and the video loop connections for sources one through four are shown.

Figure 4-10: V8 Connections

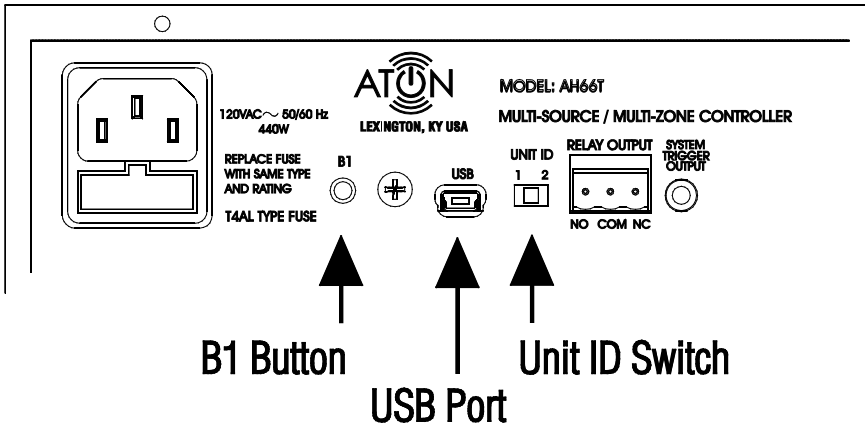


Chapter 5: Operation, Settings & Programming

Unit ID DIP Switch Settings

The AH66T has a Unit ID Switch on the back panel. The Factory Default setting is Unit ID # 1. In a dual AH66T system, the MAIN chassis must be set to Unit ID# 1 and the secondary chassis must be set to Unit ID # 2.

Figure 5-1: Unit ID Switch and B1 Button



B1 Button Operation

The B1 button is used for basic functionality testing of the AH66T. After the installation is completed, pressing the B1 button will initiate a test mode. The first button press will turn all zones on to source # 1 at 50% volume level, turn on the relay, and turn on the cooling fans. Additional presses will cycle through all six analog input sources and the internal AM/FM tuner and finally turn all zones, relay and the fan off. The OLED2 will display the zone status feedback during the test mode operation.

USB Port

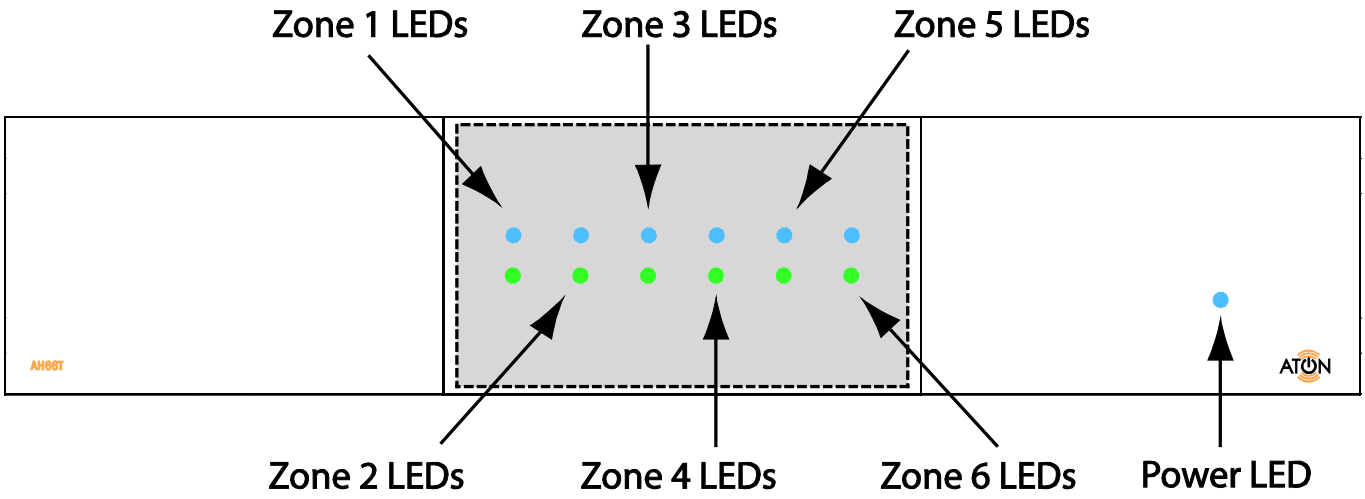
The USB port is used to download the system configuration information in the ATON configuration software. This includes source input leveling settings, maximum volume and zone turn-on settings, IR routing, relay programming, and tuner setup. Pre-amp outputs, zone stereo/mono configuration and serial port setup information are also configured through the USB port. "Single point" downloading to OLED2s also uses the USB port.

Connect a USB to USB-mini cable from the computer to the AH66T to download.

Front Panel LEDs

The AH66T has 12 Zone Activity Status LEDs (two per zone), and a Power LED indicator.

Figure 5-2: Front Panel LEDs



Item	Function
1	**Zone Status Indicators** Solid blue when the zone is on, Flickers when IR is being received in the zone
2	**Power LED** Solid blue when the AH66T has AC power, Slow blink if unit is overheating, Fast blink if unit has shut down due to high temperature
3	**Whole House Music (WHM) and Do Not Disturb (DND) Indicators** Solid green if the zone is part of WHM, Blinks slowly if the zone is in DND. Off if neither of these conditions is true.

Chapter 6: Troubleshooting

General

Symptom	*Possible Cause*	*Solution*
AH66T will not power up.	1. Power cable is disconnected 2. Circuit breaker tripped	1. Connect power cable 2. Set circuit breaker. The AH66T draws 12 amps of AC current. Ensure that combined current draw of all devices on circuit does not exceed the circuit's capacity.

Audio

Symptom	*Possible Cause*	*Solution*
No audio in a specific zone.	1. Source not playing 2. No source selected in the zone 3. Source selected in a different zone 4. Variable output turned down 5. Speakers or volume controls miswired 6. Pre-amp audio output connected to incorrect amplifier inputs	1. Press Play, tune station, turn source on etc. 2. Select a source 3. Use front panel LEDS to verify correct zone selected 4. Adjust volume 5. Correct wiring 6. Correct wiring
No audio in ANY zone	1. See Above 2. Verify AH66T is powered 3. Verify External amp is powered 4. Source Audio not connected to AH66T	1. Perform steps above 2. See Above 3. Check power cord and breaker for amplifier 4. Connect Source Audio
Audio quits, zone LEDs turn off, no control over system, blue power LED blinking	AH66T overheating or has gone into thermal shutdown	Check ventilation Check fan operation (Use B1 button) Check speaker wiring for miswire causing a short Allow AH66T to cool down until the power LED stops blinking and then turn zone(s) on at a low volume. If problem persists, call ATON Technical Support

Audio (Continued)

Symptom	*Possible Cause*	*Solution*
Audio "hum" or buzz through system speakers	1. Ground potential difference between source components (ground loop)	1. (a) Test AC outlet using ground tester. (b) Reverse the AC plug of components with non-polarized ends plugged into the same outlet strip as amp. (c) Isolate problem by disconnecting sources one at a time.
	2. Source Input level is too high.	2. Reduce Input level settings in the ATON configuration software.
	3. Faulty / damaged cables or speaker wiring	3. (a)Check source equipment cables for damage or faulty connections (b) Check for shorts in speaker wiring or improperly wired volume controls.
Poor audio quality. Audio is unclear, Bass response is low.	1. Speakers out of phase	1. Correct polarity of speaker wiring
	2. Defective/incompatible speaker	2. (a)Check for physical damage to speaker. (b) Ensure speakers have appropriate power rating for amplifier. (c) Ensure speakers have at least 8 Ohm impedance.
	3. Incorrect Left/Right assignment of source or zone RCA cables	3. Isolate to source or zone and correct.
	4. Poor audio cable connection between source and AH66T.	4. Verify/correct connections
Audio plays at full volume in a variable zone	Pre-amp output set to fixed in programming software	Correct programming to make pre-amp output variable
No audio to one or more speakers	1. Loose/bad speaker wire connections	1. Check speaker wiring connections.
	2. Break or short in speaker wiring	2. Check speaker wire continuity with a multi-meter
	3. Defective speaker(s)	3. Swap with known good speaker
	4. Source not sending audio	4. Verify source is on and playing
Audio very distorted in areas using volume controls or DLA Speaker Selector	1. Impedance Match settings incorrect	1. Correct impedance match settings on volume control(s) or DLA Speaker Selector.
	2. Volume control / Speaker Selector miswired	2. Check for proper in/out connections at volume control or DLA Speaker Selector

Audio (Continued)

Symptom	*Possible Cause*	*Solution*
Incorrect source playing on speakers	1. Source connected to wrong input of AH66T. 2. Speakers connected to incorrect speaker outputs.	1. Verify/correct input connections. 2. Verify/correct speaker connections.

Video

Symptom	*Possible Cause*	*Solution*
Video not switching when using HRD44 Video Router	1. IR connection from ALL IR Output to HDR44 faulty or not connected. 2. Incorrect programming 3. HDR44 unit ID not set correctly.	1. Connect 3.5 mm MONO cable. Verify continuity with a multi-meter. 2. Verify / correct programming 3. Set unit ID correctly.
Video not switching when using V8 or V85 Video Router	1. A-Net to VIANet connection faulty or not connected. 2. Incorrect programming 3. V8 / V85 unit ID not set correctly.	1. Connect Cat5 using A-Net wiring color code. Verify connections. 2. Verify / correct programming. 3. Set unit ID correctly.
Video switches but is incorrect	1. Source video not connected to the correct input. 2. Video Outputs of the switcher connected to the wrong monitors. 3. Video Router's unit ID set incorrectly.	1. Connect source video correctly. Source # 1 video to Input # 1 of the switcher, Source # 2 video to Input # 2 of the switcher and so forth. 2. Connect Video Outputs to the correct monitors. Video output # 1 to the monitor in Zone # 1, Video Output # 2 to the monitor in Zone # 2 and so forth. 3. Set unit ID correctly.

Sense Input / Trigger Output

Symptom	*Possible Cause*	*Solution*
Conditional power command for monitor not working properly	1. Conditional programming incorrect	1. Verify/correct programming in the ATON configuration software
	2. Sensor faulty or not connected properly	2. Verify/correct Sensor operation and connection.
	3. Incorrect Sensor being used	3. Use correct sensor
System Trigger Out not working properly	1. Faulty or incorrect 3.5mm cable being used.	1. Correct wiring – Use a MONO 3.5mm cable.
	2. Check for 12VDC with multi-meter	2. 100mA maximum current

RS-232 / IR / A-Net Control

Symptom	*Possible Cause*	*Solution*
Zone IR receive LED does NOT flash when a button is pressed.	1. IR controller not programmed.	1. Program IR controller or correct programming.
	2. IR signal path wiring bad.	2. Verify IR signal path wiring. Check touchpads, IR sensors, AH66T IR Input jack, etc.
Intermittent control from IR controller.	IR flooding.	Zone IR receive LED glowing or flickering when no commands are being sent indicates IR flooding. Possible sources: ambient light or plasma / LCD TV flooding.
A-Net commands not working	1. A-Net wiring incorrect.	1. Verify wiring.
	2. Chassis unit ID set incorrectly.	2. Set chassis unit ID correctly. **(See page 47)**
	3. Incorrect commands	3. Verify / Correct programming
3rd Party RS-232 commands not working	1. No connection from RS-232 controller to the AH66t	1. Connect RS-232 controller
	2. Faulty connection / incorrect pin configuration	2. Correct wiring / Verify correct DB-9 to RJ45 adapter is being used **(DB9F-RJ45 NULL Modem)**
	3. AH66T RS-232 configuration not correct for the RS-232 controller being used	3. Configure the correct settings using the ATON configuration software

C2 Communication Control

Symptom	***Possible Cause***	***Solution***
No Music-On-Hold	1. Tuner not on a station. 2. MOH Input Level on C2 is turned down.	1. Tune station. 2. Adjust MOH Input Level – See C2 Manual
No Page or Door Chime audio. Music **does not mute** when page or doorbell is activated.	1. Zone is in Do-Not-Disturb 2. A-Net to VIANet connection faulty or not connected. 3. Programming	1. De-Activate Do-Not-Disturb setting 2. Verify/Connect A-Net to VIANet connection. See page 32 for color code. 3. Zone set to Do-Not-Disturb in the ATON SystemWorx software.
No Page or Door Chime audio. Music **does mute** when page or doorbell activated.	1. C2 Page/Doorbell Output level turned down too low. 2. PG/DB Output from C2 not connected to PG/DB Input of AH66T. 3. AH66T Zone Volume too low.	1. Adjust PG/DB Output of C2. See C2 Manual. 2. Connect PG/DB Output of C2 to AH66T. Use RCA "Y" connector for multiple AH66T chassis. 3. Adjust volume.
No Source audio - Constant single or double "beep" heard over speakers	1. Phone is off-hook 2. Caller has been left on hold.	1. Hang phone up. 2. Pick up caller on hold. **(See C2 Manual for additional information.)**

Appendix A: RS-232 Protocol and Command Set

When using 3rd party RS-232 control systems it is necessary to configure the RS-232 control system communication settings to conform to the AH66T settings.

Port Configuration

8 data bits, no parity, 1 stop bit, no flow control

Baud Rates:

- 115200
- 57600
- 38400
- 19200
- 9600

The ATON configuration software allows you adjust the Baud Rate. All other settings are fixed. Be sure that the 3rd party controller settings match these settings.

The command structure for the primary AH66T functions is different than the command structure for the integrated tuner. Each command set is covered separately.

AH66T Control Command Structure (Primary Functions)

AH66T control commands follow the same basic structure. Commands are in all capitals and the comma separation (44 in decimal or 0x2C in hex) is required.

Prefix: &AH66 - This is required for all command strings.

Command (CMD): This is required for all command strings. See the list on the following pages.

Parameter # 1 (PAR1): This generally refers to a zone or a chassis.

Parameter # 2 (PAR2): This is usually the second part of the actual command - ON / OFF / TOGGLE / QUERY, for example.

Parameter # 3 (PAR3): Used when adjusting BASS and TREBLE settings.

Carriage Return (<cr>): This is required for all commands. (0x0d or Decimal 13)

Sample Command Layout:

&AH66,CMD,PAR1,PAR2<cr> (2 parameters)

&AH66,CMD,PAR1,PAR2,PAR3<cr> (3 parameters)

Control Command Response Structure (Primary Functions)

When a control command is sent the AH66T will generate a response that indicates whether or not the command was successfully decoded.

When the AH66T successfully decodes control commands it will respond with ***AH66,ACK**.

If the control command is not successfully decoded (incorrect command or format) the AH66T will respond with ***AH66,NACK**.

Query Command Response Structure (Primary Functions)

Query commands ask the AH66T for information. They have the same formatting as control commands.

If a query command is successfully decoded the AH66T will respond with information relating to the query; VOLUME, SENSE STATUS, BASS LEVEL, etc.

Sample Query Command and Response:

QUERY COMMAND: &AH66,BAS,3,?<cr> This query is requesting the level of the bass setting in zone 3.

QUERY RESPONSE: *AH66,BAS,3,+,4 This response shows that the bass level in zone 3 is +4 dB

If a query command is improperly formatted the response will be ***AH66,NACK**.

The following pages contain the RS-232 commands for the AH66T. These commands are included in the IR Library of the ATON configuration software.

Primary Commands

Bass Level Control

Description: Adjusts Bass level in a zone. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2*	*Parameter 3* +/- dBs*
&AH66	BAS	1-12	+/-/0/?	1-12

Examples:

&AH66,BAS,6,+<cr> INCREASES (+) the BASS (BAS)in ZONE SIX (6) by 1 dB.*****

&AH66,BAS,9,-<cr> DECREASES (-) the BASS (BAS) in ZONE NINE (9) by 1 dB.*****

&AH66,BAS,10,0<cr> Sets the BASS (BAS) in ZONE TEN (10) to FLAT (0).*****

&AH66,BAS,2,+,6<cr> Sets the BASS (BAS) in ZONE TWO (2) to PLUS (+) SIX dB (6).

&AH66,BAS,3,-,2<cr> Sets the BASS (BAS) in ZONE THREE (3) to MINUS (-) TWO dB (2).

&AH66,BAS,5,?<cr> QUERIES (?) the BASS (BAS) setting of ZONE FIVE (5).*****

Example QUERY responses are:*AH66,BAS,5,0 (ZONE FIVE-BASS is FLAT),
*AH66,BAS,2,+,3 (ZONE FIVE-BASS is PLUS 3),
*AH66,BAS,5,-,4 (ZONE FIVE-BASS is MINUS 4).

***When increasing or decreasing the BASS setting by 1 dB, setting BASS to 0 (flat), or querying settings, Parameter 3 is not used.**

DND (Do Not Disturb) Control

Description: Enables, Disables or TOGGLES the DND setting in a zone. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 DND State*
&AH66	DND	1-12	0/1/2/?

Examples:

&AH66,DND,6,0<cr> Sets the DO-NOT-DISTURB (DND) setting in ZONE SIX (6) to OFF.

&AH66,DND,9,1<cr> Sets the DO-NOT-DISTURB (DND) setting in ZONE NINE (9) to ON.

&AH66,DND,10,2<cr> TOGGLES (2) the DO-NOT-DISTURB (DND) setting in ZONE TEN.

&AH66,DND,2,?<cr> QUERIES the DO-NOT-DISTURB (DND) setting in ZONE TWO.

Possible QUERY responses are:*AH66,DND,2,0, or*AH66,DND,2,1 where 0=OFF and 1=ON.

Doorbell Control

Description: Activates, Deactivates or TOGGLES Page/Doorbell Audio Input. Status can be queried.

Prefix	*Command*	*Parameter 1 Doorbell State*
&AH66	DB	0/1/2/?

Examples:

&AH66,DB,0<cr> Sets DOORBELL INPUT (DB) to OFF (0).

&AH66,DB,1<cr> Sets DOORBELL INPUT (DB) to ON (1).

&AH66,DB,2<cr> TOGGLES (2) DOORBELL INPUT (DB).

&AH66,DB,?<cr> QUERIES (?)DOORBELL INPUT (DB) status

Possible QUERY responses are:*AH66,DB,0 or *AH66,DB,1, where 0=OFF and 1=ON.

Doorbell and Page commands are separated because the volume for DOORBELL audio and PAGE audio is independently set in the ATON configuration software.

Factory Default

Description: Sets all options back to the FACTORY DEFAULT settings.

Prefix	*Command*
&AH66	DEF

Command:

&AH66,DEF<cr> Factory DEFAULTS (DEF) the chassis.

Firmware Version

Description: Queries the Firmware Version of the chassis.

Prefix	*Command*	*Parameter 1 Chassis #*	*Parameter 2*
&AH66	VER	1/2	?

Examples:

&AH66,VER,1,?<cr> QUERIES (?) the FIRMWARE VERSION (VER) of CHASSIS ONE (1).

&AH66,VER,2,?<cr> QUERIES (?) the FIRMWARE VERSION (VER) of CHASSIS TWO (2).

Example query responses: *AH66,VER,1,0.2.0.1, or *AH66T,VER,2,0.2.0.1, where 0.2.0.1 is the current firmware.

IR Routing Control

Description: Links the IR Input of a zone to an IR Output. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 IR Port*
&AH66	IRR	1-12	0-6/?

Examples:

&AH66,IRR,6,1<cr> Links the IR INPUT of ZONE SIX (6) to IR OUTPUT ONE (1).

&AH66,IRR,12,5<cr> Links the IR INPUT of ZONE TWELVE (12) to IR OUTPUT FIVE (1).

&AH66,IRR,3,0<cr> "Un-Links" the IR INPUT of ZONE THREE (3) from ALL IR outputs including the ALL IR Out ports.

&AH66,IRR,5,?<cr> QUERIES (?) the IR LINK (IRR) setting of ZONE FIVE (5).*

Example query responses: *AH66,IRR,5,101101, *AH66,IRR,5,000001, etc., where 1=IR link to the port, 0=No IR link to the port. Information for all six IR ports is reported. The first example shows port 1 is linked, port 2 is not linked, ports 3 and 4 are linked, port 5 is not linked and port 6 is linked.

Loudness Control

Description: Enables, disables or TOGGLES the Loudness EQ setting in a zone. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 Loudness State*
&AH66	LUD	1-12	0/1/2/?

Examples:

&AH66,LUD,2,0<cr> Sets ZONE TWO (2) LOUDNESS (LUD) setting to OFF (0).

&AH66,LUD,5,1<cr> Sets ZONE FIVE (5) LOUDNESS (LUD) setting to ON (1).

&AH66,LUD,3,2<cr> TOGGLES (2) the LOUDNESS (LUD) setting of ZONE THREE (3).

&AH66,LUD 8,?<cr> QUERIES (?) the LOUDNESS (LUD) setting of ZONE EIGHT (8).

Possible QUERY responses are:*AH66,LUD,8,0 or *AH66,LUD,8,1 where 0=OFF and 1=ON.

Mute Control

Description: Mutes or un-mutes a zone, or TOGGLES the state. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 Mute State*
&AH66	MUT	1-12	0/1/2/?

Examples:

&AH66,MUT,6,0<cr> Sets ZONE SIX (6) to UN-MUTED (0).

&AH66,MUT,2,1<cr> Sets ZONE TWO (2) to MUTED (1).

&AH66,MUT,3,2<cr> TOGGLES (2) the setting of ZONE THREE (3).

&AH66,MUT,5,?<cr> QUERIES (?) the setting of ZONE FIVE (5).

Possible QUERY responses are:*AH66,MUT,5,0 or *AH66,MUT,5,1 where 0=UN-MUTED and 1=MUTED.

Page Control

Description: Activates, Deactivates or TOGGLES Page/DB Audio Input. Status can be queried.

Prefix	*Command*	*Parameter 1 Page/Query*	*Parameter 2 Page State*
&AH66	PG	0/?	0/1/2/

Examples:

&AH66,PG,0,0<cr> Sets PAGE INPUT (PG) to OFF (0).

&AH66,PG,0,1<cr> Sets PAGE INPUT (PG) to ON (1).

&AH66,PG,?<cr> QUERIES (?) PAGE INPUT (PG) status

Possible QUERY responses are:*AH66,PG,0 or *AH66,PG,1, where 0=OFF and 1=ON.

Page and Doorbell commands are separated because the volume for PAGE audio and DOORBELL audio is independently set in the ATON configuration software.

Pre-Amp Output Fixed / Variable Control

Description: Sets the pre-amp output of a zone to fixed or variable, or TOGGLES the state. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 Output State*
&AH66	FIXVAR	1-12	0/1/2/?

Examples:

&AH66,FIXVAR,2,0<cr> Sets ZONE TWO (2) OUTPUT (FIXVAR) setting to VARIABLE (0).

&AH66,FIXVAR,5,1<cr> Sets ZONE FIVE (5) OUTPUT (FIXVAR) setting to FIXED (1).

&AH66,FIXVAR,3,2<cr> TOGGLES (2) the PRE-AMP (FIXVAR) setting of ZONE THREE (3).

&AH66,FIXVAR,8,?<cr> QUERIES (?) the PRE-AMP (FIXVAR) setting of ZONE EIGHT (8).

Possible QUERY responses are:*AH66,FIXVAR,8,0 or *AH66,FIXVAR,8,1 where 0=VARIABLE and 1=FIXED.

Sense Trigger Input Status

Description: Queries the state of the Sense Trigger Inputs.

Prefix	*Command*	*Parameter 1 Chassis #*	*Parameter 2*
&AH66	STI	1/2	?

Examples:

&AH66,STI,1,?<cr> QUERIES (?) the status of the SENSE TRIGGER INPUTS (STI) of CHASSIS ONE (1).

&AH66,STI,2,?<cr> QUERIES (?) the status of the SENSE TRIGGER INPUTS (STI) of CHASSIS TWO (2).

Example query responses: *AH66,STI,1,100101, AH66,STI,2,001001, etc., where 1=Sense Trigger Present, 0=Sense Trigger Absent. Information for all six Sense Trigger Inputs is reported. The first example shows sense trigger 1 is present, sense triggers 2 and 3 are not present, sense trigger 4 is present, sense trigger 5 is not present and sense trigger 6 is present.

Source Audio Signal Status

Description: Queries the Source Audio Inputs for signal presence.

Prefix	*Command*	*Parameter 1 Chassis #*	*Parameter 2*
&AH66	ASD	1/2	?

Examples:

&AH66,ASD,1,?<cr> QUERIES (?) the status of the SOURCE AUDIO INPUTS (ASD) of CHASSIS ONE (1).

&AH66,ASD,2,?<cr> QUERIES (?) the status of the SOURCE AUDIO INPUTS (ASD) of CHASSIS TWO (2).

Example query responses: *AH66,ASD,1,101101, AH66,ASD,2,001001, etc., where 1=Audio Signal Present, 0=Audio Signal Absent . Information for all six Source Audio Inputs is reported. The first example shows source 1 audio is present, source 2 audio is not present, source 3 and 4 audio is present, source 5 audio is not present and source 6 audio is present.

Source Select Control

Description: Selects the source in a zone. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 Source*
&AH66	AUD	1-12	0-6/R1/R2/?

Examples:

&AH66,AUD,2,1<cr> Selects SOURCE (AUD) ONE (1) in ZONE TWO (2).

&AH66,AUD,5,2<cr> Selects SOURCE (AUD) TWO (2) in ZONE FIVE (5).

&AH66,AUD,11,R1<cr> Selects the INTERNAL RADIO of CHASSIS ONE (R1) in ZONE ELEVEN (11).

&AH66,AUD,8,?<cr> QUERIES (?) the SELECTED SOURCE (AUD) in ZONE EIGHT (8).

Possible QUERY responses are: *AH66,AUD,8,0, *AH66,AUD,8,1, etc., where 0=Zone is OFF, 1=Source one, 2=Source two, 3=Source three, 4= Source four, 5=Source five, 6=Source six, R1=CHASSIS 1's Internal Radio, R2=CHASSIS 2's Internal Radio.

Stereo / Mono Control

Description: Sets a zone to Stereo or Mono, or TOGGLES the state. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 Output State*
&AH66	STMO	1-12	0/1/2/?

Examples:

&AH66,STMO,6,0<cr> Sets the STEREO/MONO (STMO) setting of ZONE SIX (6) to STEREO (0).

&AH66,STMO,2,1<cr> Sets the STEREO/MONO (STMO) setting of ZONE TWO (2) to MONO (1).

&AH66,STMO,3,2<cr> TOGGLES (2) the STEREO/MONO (STMO) setting of ZONE THREE (3).

&AH66,STMO,5,?<cr> QUERIES (?) the STEREO/MONO (STMO) setting of ZONE FIVE (5).

Possible QUERY responses are: *AH66,STMO,5,0 or *AH66,STMO,5,1 where 0=STEREO and 1=MONO.

System Power Control

Description: Turns the system OFF. Status can be queried.

Prefix	*Command*	*Parameter 1*
&AH66	SYSOFF	?

Examples:

&AH66,SYSOFF<cr> Turns all zones OFF (SYSOFF).

&AH66,SYSOFF,?<cr> QUERIES (?) the POWER STATUS of the SYSTEM (SYSOFF).

Possible QUERY responses are:*AH66,SYSOFF,0 or *AH66,SYSOFF,1, where 0=OFF and 1=ON.

Treble Level Control

Description: Adjusts Treble level in a zone. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2*	*Parameter 3* +/- dBs*
&AH66	TRE	1-12	+/-/0/?	1-12

Examples:

&AH66,TRE,6,+<cr> INCREASES (+) the TREBLE (TRE)in ZONE SIX (6) by 1 dB.*****

&AH66,TRE,9,-<cr> DECREASES (-) the TREBLE (TRE) in ZONE NINE (9) by 1 dB.*****

&AH66,TRE,10,0<cr> Sets the TREBLE (TRE) in ZONE TEN (10) to FLAT (0).*****

&AH66,TRE,2,+,6<cr> Sets the TREBLE (TRE) in ZONE TWO (2) to PLUS (+) SIX dB (6).

&AH66,TRE,3,-,2<cr> Sets the TREBLE (TRE) in ZONE THREE (3) to MINUS (-) TWO dB (2).

&AH66,TRE,5,?<cr> QUERIES (?) the TREBLE (TRE) setting of ZONE FIVE (5).*****

Example QUERY responses are:*AH66,TRE,5,0 (ZONE FIVE-TREBLE is FLAT),
*AH66,TRE,2,+,3 (ZONE FIVE-TREBLE is PLUS 3),
*AH66,TRE,5,-,4 (ZONE FIVE-TREBLE is MINUS 4).

***When increasing or decreasing the TREBLE setting by 1 dB, setting TREBLE to 0 (flat), or querying settings, Parameter 3 is not used.**

Volume Control

Description: Adjusts volume in a Zone. Increasing volume ends mute. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 Volume*
&AH66	VOL	1-12	+/-/0-100/?

Examples:

&AH66,VOL,6,+<cr> INCREASES (+) the VOLUME (VOL)in ZONE SIX (6) by 1 dB.

&AH66,VOL,9,-<cr> DECREASES (-) the VOLUME (VOL)in ZONE NINE (9) by 1 dB.

&AH66,VOL,3,50<cr> Sets the VOLUME (VOL)in ZONE THREE (3) to 50 (50).

&AH66,VOL,2,?<cr> QUERIES (?) the VOLUME (VOL) setting of ZONE TWO (2).

Example QUERY responses are:*AH66,VOL,2,0, *AH66,VOL,2,26, etc, where 0=VOLUME all the way down and 26=VOLUME of 26.

Whole House Music (WHM) Control

Description: Activates, Deactivate or TOGGLES WHM. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 WHM State*
&AH66	WHM	1-12	0/1/2/?

Examples:

&AH66,WHM,6,0<cr> Deactivates (0) WHOLE HOUSE MUSIC (WHM).

&AH66,WHM,9,1<cr> Activates (1) WHOLE HOUSE MUSIC (WHM) to the currently selected source in ZONE 9 (9).

&AH66,WHM,3,2<cr> TOGGLES (2) the WHOLE HOUSE MUSIC (WHM) setting in ZONE THREE (3).

&AH66,WHM,5,?<cr> QUERIES (?) the WHMS (WHM) setting of ZONE FIVE (5).*

Possible QUERY responses are:*AH66,WHM,5,0, or *AH66,WHM,5,1 where 0=OFF and 1=ON.

Zone Power Control

Description: Turns a zone ON or OFF. Status can be queried.

Prefix	*Command*	*Parameter 1 Zone #*	*Parameter 2 Power State*
&AH66	PWR	1-12	0/1/2/?

Examples:

&AH66,PWR,2,0<cr> Sets ZONE TWO (2) POWER (PWR) setting to OFF (0).

&AH66,PWR,5,1<cr> Sets ZONE FIVE (5) POWER (PWR) setting to ON (1).

&AH66,PWR,3,2<cr> TOGGLES (2) the POWER (PWR) setting of ZONE THREE (3).

&AH66,PWR 8,?<cr> QUERIES (?) the POWER (PWR) setting of ZONE EIGHT (8).

Possible QUERY responses are:*AH66,PWR,8,0 or *AH66,PWR,8,1 where 0=OFF and 1=ON.

Key Commands

Key commands accomplish the same purposes as the previously covered commands but use a different format. Key commands imitate the IR commands found in the IR Library.

Key Command Structure

Key commands follow the same basic structure. Commands are in all capitals and the comma separation (44 in decimal or 0x2C in hex) is required.

Prefix: &AH66 - This is required for all command strings.

Parameter # 1 (PAR1): KEY – This is required for all command strings.

Parameter # 2 (PAR2): Zone selection (ZZ). This is required for all command strings

Parameter # 3 (PAR3): Desired command (abcd). Expressed as a 4 digit number.

Carriage Return (<cr>): This is required for all commands. (0x0d or Decimal 13)

Sample Command Layout:

&AH66,KEY,ZZ,abcd<cr>

Key Command Response Structure

When a key command is sent the AH66T will generate a response that indicates whether or not the command was successfully decoded.

When the AH66T successfully decodes key commands it will respond with ***AH66,ACK**.

If the key command is not successfully decoded (incorrect command or format) the AH66T will respond with ***AH66,NACK**.

Key Command List

Prefix	*Parameter 1*	*Parameter 2 ZZ (Zone)*	*Parameter 3*
&AH66	KEY	1-12	abcd

abcd:

0000 = All zones off (System OFF)

0004 = Return all zones to previous audio source (Page OFF)

0005 = Route 'Page Audio In' to all enabled zones (Page ON group 0)

0006 = Page on/off toggle - group 0

0007 = Return all zones to previous audio source (Doorbell OFF)

0008 = Route 'Page Audio In' to all zones (Doorbell ON)

0009 = Doorbell on/off toggle

0010 = Allow zone to be included in WHM & PAGE (DND OFF)

0011 = Exempt zone from WHM & PAGE (DND ON)

0012 = Do Not Disturb on/off toggle

0013 = All zones independent - no source tracking (WHM OFF)

0014 = All zones track current A/V source (WHM ON)

0015 = Whole House Music on/off toggle

0016 = Zone OFF

0017 = Zone ON

0018 = Zone ON/OFF toggle

0019 = Zone audio un-mute

0020 = Zone audio mute

0021 = Zone audio mute toggle

0022 = Disable loudness filter

0023 = Enable loudness filter

0024 = Loudness on/off toggle

003 = Zone treble down

0033 = Zone treble up

0034 = Zone bass down

Key Command List (Continued)

0035 = Zone bass up

0036 = Zone volume down

0037 = Zone volume up

0038 = Page volume down

0039 = Page volume up

0040 = Doorbell volume down

0041 = Doorbell volume up

0042 = Source level adjustment down

0043 = Source level adjustment up

0044 = Zone EQ Flat - return bass & treble to 0dB

0045 =Select Radio 1 as the source

0046 =Select Radio 2 as the source

0064= Select source 1

0065= Select source 2

0066= Select source 3

0067= Select source 4

0068= Select source 5

0069= Select source 6

0240= Set the ABSOLUTE MAX volume of the zone to the current volume

0241= Set the ABSOLUTE MAX volume of the zone to 100%

0242= Set the MIN TURN-ON volume of the zone to the current volume

0243= Set the MAX TURN-ON volume of the zone to the current setting.

0244= Set treble ON in the zone to the current setting

0245= Set treble ON in the zone to the last setting

0246= Set bass ON in the zone to the current setting

0247= Set bass ON in the zone to the last setting

0250= Set DND ON in the zone to the current setting

0251= Set DND ON in the zone to the last setting

Key Command List (Continued)

0252= Set PAGE volume in the zone to the current setting

0253= Set Doorbell volume in the zone to the current setting

0254= Set Source Input Gain to the current setting

0464= Turn OFF all source IR ports

0465= Turn ON source 1's IR port

0466= Turn ON source 2's IR port

0467= Turn ON source 3's IR port

0468= Turn ON source 4's IR port

0469= Turn ON source 5's IR port

0470= Turn ON source 6's IR port

0768= Radio 1's digit 0

0769= Radio 1's digit 1

0770= Radio 1's digit 2

0771= Radio 1's digit 3

0772= Radio 1's digit 4

0773= Radio 1's digit 5

0774= Radio 1's digit 6

0775= Radio 1's digit 7

0776= Radio 1's digit 8

0777= Radio 1's digit 9

0778= Radio 1's preset Group A

0779= Radio 1's preset Group B

0780= Radio 1's preset Group C

0781= Radio 1's preset Group D

0783= Set Radio 1's mode to Direct tuning

0784= Set Radio 1's Band to AM

0785= Set Radio 1's Band to FM

0786= Toggle Radio 1's FM Mode between Stereo and Mono

0787= Toggle Radio 1's Band between AM and FM

Key Command List (Continued)

0789= Save Station to Radio 1's Memory

0790= Delete Station from Radio 1's Memory

0791= ENTER command for Radio 1

0792= Radio 1 Preset UP

0793 = Radio 1 Preset DOWN

0794 = Radio 1 Seek UP

0795 = Radio 1 Seek DOWN

0796= Radio 1 Manual Tune UP

0797= Radio 1 Manual Tune DOWN

0798= Radio 1 Scan UP

0799= Radio 1 Scan DOWN

0800= Set Radio 1's mode to Preset tuning

0801= Toggle Radio 1's tuning Mode

0816= Radio 2's digit 0

0817= Radio 2's digit 1

0818= Radio 2's digit 2

0819= Radio 2's digit 3

0820= Radio 2's digit 4

0821= Radio 2's digit 5

0822= Radio 2's digit 6

0823= Radio 2's digit 7

0824= Radio 2's digit 8

0825= Radio 2's digit 9

0826= Radio 2's preset Group A

0827= Radio 2's preset Group B

0828= Radio 2's preset Group C

0829= Radio 2's preset Group D

0831= Set Radio 2's mode to Direct tuning

0832= Set Radio 2's Band to AM

Key Command List (Continued)

0833= Set Radio 2's Band to FM

0834= Toggle Radio 2's FM Mode between Stereo and Mono

0835= Toggle Radio 2's Band between AM and FM

0837= Save Station to Radio 2's Memory

0838= Delete Station from Radio 2's Memory

0839= ENTER command for Radio 2

0840= Radio 2 Preset UP

0841 = Radio 2 Preset DOWN

0842 = Radio 2 Seek UP

0843 = Radio 2 Seek DOWN

0844= Radio 2 Manual Tune UP

0845= Radio 2 Manual Tune DOWN

0846= Radio 2 Scan UP

0847= Radio 2 Scan DOWN

0848= Set Radio 2's mode to Preset tuning

0849= Toggle Radio 2's tuning Mode

Examples:

- &S86,KEY,12,0000<cr> turns System off.
- &S86,KEY,2,0004<cr> turns Zone 2 Page off
- &S86,KEY,6,0009<cr> turns Zone 6 Doorbell off to on or on to off.

Tuner Command Structure

AH66T tuner commands follow the same basic structure. Commands are in all capitals and the comma separation (44 in decimal or 0x2C in hex) is required.

Prefix: &AH66 - This is required for all command strings.

Tuner Select (TS): This is required for all command strings. This selects either chassis one's tuner or chassis two's tuner.*****

***Radio 2 (R2) is only available in a two chassis system that has been configured to share tuners. See page 33 for information on the internal tuner setup options.**

Parameter # 1 (PAR1): This refers to the desired function. (Scan, Seek, Cancel, etc.)

Parameter # 2 (PAR2): This is usually the second part of the actual command - ON / OFF / TOGGLE / QUERY / UP / DOWN, for example.

Parameter # 3 (PAR3): Used when direct tuning the internal radio or requesting RDS metadata.

Carriage Return (<cr>): This is required for all commands. (0x0d or Decimal 13)

Sample Command Layout:

&AH66,TS,PAR1,PAR2<cr> (2 parameters)

&AH66,TS,PAR1,PAR2,PAR3<cr> (3 parameters)

Tuner Command Response Structure

When a tuner command is sent the AH66T will generate a response that indicates whether or not the command was successfully decoded.

When the AH66T successfully decodes tuner commands it will respond with ***AH66,ACK**.

If the tuner command is not successfully decoded (incorrect command or format) the AH66T will respond with ***AH66,NACK**.

Tuner Query Command Response Structure

Tuner query commands ask the AH66T for information. They have the same formatting as tuner commands.

If a query command is successfully decoded the AH66T will respond with information relating to the query; RDS DATA, CURRENTLY SELECTED FREQUENCY, STEREO/MONO, etc.

Sample Query Command and Response:

QUERY COMMAND: &AH66,R1,BAND,?<cr>	This query is requesting the currently tuned band of chassis one's tuner.
QUERY RESPONSE: *AH66,R1,BAND,FM	This response shows that chassis one's tuner is currently on the FM band.

If a query command is improperly formatted the response will be ***AH66,NACK**.

The following pages contain the RS-232 commands for the AH66T's internal tuner. These commands are included in the IR Library of the ATON configuration software.

Tuner Commands

Band Select Command

Description: Selects the band (AM/FM) for the tuner. Status can be queried

Prefix	*TS*	*Parameter 1*	*Parameter 2*
&AH66	R1/R2	BAND	AM/FM/?

Examples:

&AH66,R1,BAND,AM<cr>	Changes CHASSIS ONE'S (R1) radio BAND (BAND) to AM (AM).
&AH66,R2,BAND,FM<cr>	Changes CHASSIS TWO'S (R2) radio BAND (BAND) to FM (FM).
&AH66,R1,BAND,?<cr>	QUERIES (?) CHASSIS ONE'S (R1) radio BAND (BAND) setting.

Possible query responses: *AH66,R1,BAND,AM, or *AH66T,R2,BAND,FM.

Cancel Command

Description: Clears any digits previously entered into memory.

Prefix	*TS*	*Parameter 1*
&AH66	R1/R2	CANCEL

Examples:

&AH66,R1,CANCEL<cr>	Sends the CANCEL (CANCEL) command to CHASSIS ONE'S (R1) tuner.
&AH66,R2,CANCEL<cr>	Sends the CANCEL (CANCEL) command to CHASSIS TWO'S (R2) tuner.

Results: Clears the previously digits.

Digit Selection

Description: Sends digits for direct tuning. Has a 5 second timeout.

Prefix	*TS*	*Parameter 1*	*Parameter 2 Digit*
&AH66	R1/R2	DIGIT	0-9

Example:

&AH66,R1,DIGIT,1<cr> Selects DIGIT (DIGIT) ONE (1) for CHASSIS ONE'S (R1) tuner.

&AH66,R1,DIGIT,0<cr> Selects DIGIT (DIGIT) ZERO (0) for CHASSIS ONE'S (R1) tuner.

&AH66,R1,DIGIT,5<cr> Selects DIGIT (DIGIT) FIVE (5) for CHASSIS ONE'S (R1) tuner.

&AH66,R1,DIGIT,1<cr> Selects DIGIT (DIGIT) ONE (1) for CHASSIS ONE'S (R1) tuner.

Results: Tunes Chassis One's Radio to 105.1.

Enter Command

Description: Sends the enter command.

Prefix	*TS*	*Parameter 1*
&AH66	R1/R2	ENTER

Examples:

&AH66,R1,ENTER<cr> Sends the ENTER (ENTER) command to CHASSIS ONE'S (R1) tuner.

&AH66,R2,ENTER<cr> Sends the ENTER (ENTER) command to CHASSIS TWO'S (R2) tuner.

Results: Processes the previous command.

Group Select Command

Description: Selects a group of preset radio station. Status can be queried.

Prefix	*TS*	*Parameter 1 Group*	*Parameter 2*
&AH66	R1/R2	GROUP	A/B/C/D/?

Examples:

&AH66,R1,GROUP,A<cr> Selects PRESET GROUP (GROUP) A (A) for CHASSIS ONE'S (R1) tuner.

&AH66,R2,GROUP,B<cr> Selects PRESET GROUP (GROUP) B (B) for CHASSIS TWO'S (R2) tuner.

&AH66,R1,GROUP,?<cr> QUERIES (?) the PRESET GROUP (GROUP) of CHASSIS ONE's (R1) tuner.

Possible responses are: *AH66,R1,GROUP,A, *AH66,R1,GROUP,B, *AH66,R1,GROUP,C, *AH66,R1,GROUP,D

Metadata Call Letters Request Command*

Description: Requests RDS PI data containing the radio station Call Letters.

Prefix	*TS*	*Parameter 1*	*Parameter 2*	*Parameter 3*
&AH66	R1/R2	MDF	S	?

Example:

&AH66,R1,MDF,S,?<cr> Requests the CALL LETTERS (S) Metadata (MDF) for the CHASSIS ONE (R1) tuner's currently selected station.

Example responses: *AH66, R1,MDF,S,WKQQ, *AH66, R1,MDF,S,KTLA, etc.

***This data is only valid for North American stations.**

Metadata Genre Request Command

Description: Requests RDS PTY data containing the radio station Genre.

Prefix	*TS*	*Parameter 1*	*Parameter 2*	*Parameter 3*
&AH66	R1/R2	MDF	G	?

Example:

&AH66,R1,MDF,G,?<cr> Requests the GENRE (G) Metadata (MDF) for the CHASSIS ONE (R1) tuner's currently selected station.

Example responses: *AH66, R1,MDF,G,Rock, *AH66, R1,MDF,G,Jazz, etc.

Metadata Radio Text Request Command

Description: Requests RDS RT data containing the Radio Text information.

Prefix	*TS*	*Parameter 1*	*Parameter 2*	*Parameter 3*
&AH66	R1/R2	MDF	R	?

Example:

&AH66,R2,MDF,R<cr> Requests the RADIO TEXT (R) Metadata (MDF) for the CHASSIS TWO (R2) tuner's currently selected station.

Example response: *AH66, R1,MDF,R,AC/DC For Those About To Rock 100.1 WKQQ

Metadata Station Name Request Command

Description: Requests RDS PS data containing the radio station Name.

Prefix	*TS*	*Parameter 1*	*Parameter 2*	*Parameter 3*
&AH66	R1/R2	MDF	L	?

Example:

&AH66,R1,MDF,L,?<cr> Requests the STATION NAME (L) Metadata (MDF) for the CHASSIS ONE (R1) tuner's currently selected station.

Example responses: *AH66, R1,MDF,L,100.1WKQQ, *AH66, R1,MDF,L,106.7KROQ, etc.

Not all stations have all of the metadata shown.

Mode Selection

Description: Selects direct tuning mode or preset tuning mode. Status can be queried.

Prefix	*TS*	*Parameter 1*	*Parameter 2*
&AH66	R1/R2	MODE	DIRECT/PRESET/TOGGLE/?

Example:

&AH66,R1,MODE,DIRECT<cr>	Sets CHASSIS ONE'S (R1) TUNE MODE (MODE) to DIRECT (DIRECT).
&AH66,R2,MODE,PRESET<cr>	Sets CHASSIS ONE'S (R1) TUNE MODE (MODE) to DIRECT (DIRECT).
&AH66,R2,MODE,TOGGLE<cr>	Toggles (TOGGLE) CHASSIS TWO'S (R2) TUNE MODE (MODE) setting.
&AH66,R1,MODE,?<cr>	QUERIES (?) CHASSIS ONE'S (R1) TUNE MODE (MODE) setting.

Possible query responses: *AH66,R1,MODE,DIRECT or *AH66,R1,MODE,PRESET

Preset Function Command

Description: Controls for preset stations. Status can be queried.

Prefix	*TS*	*Parameter 1 Group*	*Parameter 2*	*Parameter 3 (Optional)*
&AH66	R1/R2	PRESET	UP/DOWN/1-99/SAVE/DELETE/?	ENTER

Examples:

&AH66,R1,PRESET,UP<cr>	Changes CHASSIS ONE'S (R1) tuner to the next higher (UP) PRESET (PRESET).
&AH66,R2,PRESET,DOWN<cr>	Changes CHASSIS TWO'S (R2) tuner to the next lower (DOWN) PRESET (PRESET).
&AH66,R1,PRESET,47<cr>	Changes CHASSIS ONE'S (R1) tuner to PRESET (PRESET) number 47 (47).
&AH66,R1,PRESET,SAVE<cr>	SAVES (SAVE) CHASSIS ONE'S (R1) currently selected station as a PRESET (PRESET). (Saves to the first available preset slot.)*
&AH66,R1,PRESET,SAVE,1-99<cr>	SAVES (SAVE) CHASSIS ONE'S (R1) currently selected station as PRESET (PRESET) 1-99 (1-99).
&AH66,R2,PRESET,DELETE<cr>	DELETES (DELETE) CHASSIS TWO'S (R2) currently selected PRESET (PRESET).*
&AH66,R1,PRESET,?<cr>	QUERIES (?) CHASSIS ONE'S (R2) currently selected PRESET (PRESET).

Example responses are: *AH66,R1,PRESET,1, *AH66,R1,PRESET,27,
*AH66,R1,PRESET,80, etc., where the number is the preset.
0=station is not a preset.

* - When these commands are entered as shown, they will execute in ten seconds. To force the commands to execute immediately, add ",ENTER" (omit quotation marks) prior to the Carriage Return <cr>.

Scan Presets Command

Description: Scans through presets. Plays the station for 10 seconds and then goes to the next station. This continues until another command is sent to the tuner.

Prefix	*TS*	*Parameter 1 Group*	*Parameter 2*
&AH66	R1/R2	SCAN	UP/DOWN

Examples:

&AH66,R1,SCAN,UP<cr>	Starts CHASSIS ONE'S (R1) radio SCANNING (SCAN) UP (UP).
&AH66,R2,SCAN,DOWN<cr>	Starts CHASSIS TWO'S (R2) radio SCANNING (SCAN) DOWN (DOWN).

When another command is sent to the tuner, it will stop scanning and execute the next command.

It is recommended to use the CANCEL command to stop scanning to avoid any unintended result. See page 74 for the CANCEL command.

Seek Command

Description: Tunes the radio to the next valid station.

Prefix	*TS*	*Parameter 1 Group*	*Parameter 2*
&AH66	R1/R2	SEEK	UP/DOWN

Examples:

&AH66,R1,SEEK,UP<cr>	TUNES (SEEK) CHASSIS ONE'S (R1) radio to the next valid station of a HIGHER FREQUENCY (UP).
&AH66,R2,SEEK,DOWN<cr>	TUNES (SEEK) CHASSIS TWO'S (R2) radio to the next valid station of a LOWER FREQUENCY (DOWN).

Signal Strength

Description: Queries the signal strength of the currently tuned station.

Prefix	*TS*	*Parameter 1*	*Parameter 2*
&AH66	R1/R2	SIGNAL	?

Examples:

&AH66,R1,SIGNAL,?<cr> QUERIES (?) the SIGNAL STRENGTH (SIGNAL) of the CHASSIS ONE (R1) radio's currently tuned station

&AH66,R2,SIGNAL,?<cr> QUERIES (?) the SIGNAL STRENGTH (SIGNAL) of the CHASSIS ONE (R1) radio's currently tuned station

Example query responses: *AH66,R1,SIGNAL,66, *AH66T,R2,SIGNAL,87 where the number is the signal strength.

Stereo / Mono Select Control

Description: Sets FM signal decoding to stereo or mono. Status can be queried.

Prefix	*TS*	*Parameter 1*	*Parameter 2*
&AH66	R1/R2	STEREO	ON/OFF/TOGGLE/?

Examples:

&AH66,R1,STEREO,ON<cr> Sets CHASSIS ONE'S (R1) radio FM DECODING MODE (STEREO) to STEREO (ON).

&AH66,R2,STEREO,OFF<cr> Sets CHASSIS TWO'S (R2) radio FM DECODING MODE (STEREO) to MONO (OFF).

&AH66,R1,STEREO,TOGGLE<cr> TOGGLES (TOGGLE) CHASSIS ONE's (R1) radio FM DECODING MODE (STEREO).

&AH66,R2,STEREO,?<cr> QUERIES (?) the FM DECODING MODE (STEREO) of CHASSIS TWO'S (R2) radio.

Possible QUERY responses are:*AH66,R2,STEREO,OFF or *AH66,R2,STEREO,ON, where OFF=MONO and ON=STEREO.

Tune Command

Description: Tunes to the selected frequency in the current band. Status can be queried

Prefix	*TS*	*Parameter 1*	*Parameter 2*
&AH66	R1/R2	TUNE	0-9/UP/DOWN/?

Examples:

&AH66,R1,TUNE,10350<cr>	TUNES (TUNE) CHASSIS ONE'S (R1) radio to frequency 103.50 (10350).*
&AH66,R2,TUNE,UP<cr>	TUNES (TUNE) CHASSIS TWO'S (R2) radio UP (UP) by one step. (103.50 to 103.60, for example.)
&AH66,R2,TUNE,DOWN<cr>	TUNES (TUNE) CHASSIS TWO'S (R2) radio DOWN (DOWN) by one step. (94.60 to 94.50, for example.)
&AH66,R1,TUNE,?<cr>	QUERIES (?) CHASSIS ONE'S (R1) radio frequency (TUNE) setting.

Example query responses: *AH66,R1,TUNE,9450, *AH66,R1,TUNE,10250, *AH66,R1,TUNE,630, etc.

***This command REQUIRES both digits to the right of the decimal point. You MUST enter the zero (0) for the command to function.**

Unsolicited Feedback (UFB)

Description: Enables or Disables the AH66T Tuner's UFB. The UFB Status can be queried.

Prefix	*TS*	*Parameter 1*	*Parameter 2*
&AH66	CH	UFB	ON/OFF/?

Examples:

&AH66,CH,UFB,ON<cr>	Turns BOTH CHASSIS' (CH) Unsolicited Feedback (UFB) ON (ON).
&AH66,CH,UFB,OFF<cr>	Turns BOTH CHASSIS' (CH) Unsolicited Feedback (UFB) OFF (OFF).
&AH66,CH,UFB,?<cr>	QUERIES (?) BOTH CHASSIS' (CH) Unsolicited Feedback (UFB) setting.

Possible query responses: *AH66,CH,UFB,ON, *AH66,CH,UFB,OFF.

The UFB consists of the Station Name, associated Preset (if any), RDS data, Signal Level, etc.

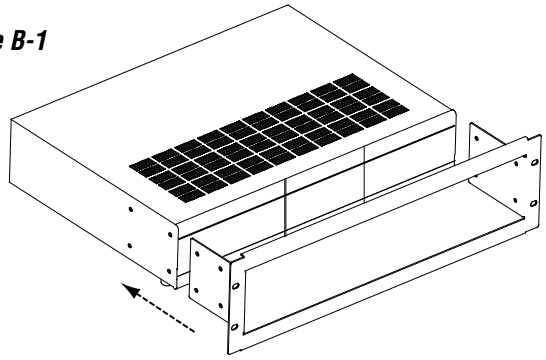
Appendix B: Rack Mounting

RMK3 Rack-Mount Kit

When mounting the AH66T controller in an equipment rack, use the ELAN RMK3 Rack Mount Kit for secure mounting and proper ventilation. The RMK3 requires three rack spaces. To install the RMK3 into a standard 19" equipment rack:

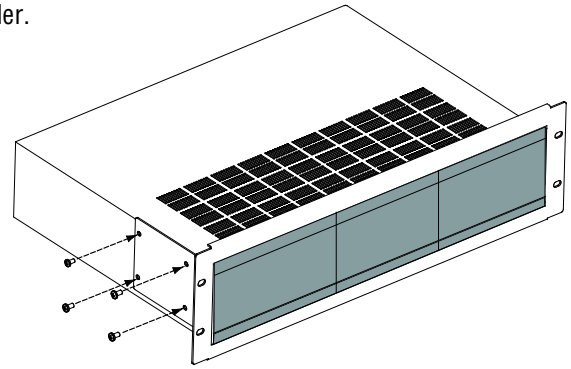
1. Slide the rack mount kit onto the AH66T chassis from the front as shown in Figure B-1.

Figure B-1



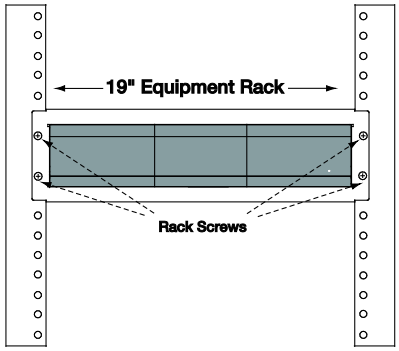
2. Ensure that the unit is flush with the front of the mounting kit. Install each of the eight screws (included) through the side mounting flanges into the holes in the sides of the unit as shown in Figure B-2. Hand tighten screws! Over-tightening could cause damage to the AH66T Controller.

Figure B-2



3. Once the unit is securely mounted into the RMK3, install the entire assembly into a standard 19" equipment rack from the front using four rack screws (not included).

Figure B-3



Appendix C: Default Configuration

The AH66T and OLED2 Touchpads may be custom configured for a wide variety of needs; however, it is not necessary to program them with the ATON SystemWorx software in order to have an operational system. This appendix covers the "out of box" functionality of the system.

Note: Default functionality is only applicable to single chassis systems. Dual AH66T systems MUST be programmed using the ATON SystemWorx software.

Sources

The AH66T accommodates six sources, plus the internal AM/FM tuner. By default, source one is the iPod docking station. Connect the audio outputs of the iPod dock to the Source One audio inputs of the AH66T.

Additional audio sources may be connected to Source inputs two through six. The additional sources may be selected using the OLED2 user interfaces and controlled using the sources' factory remotes.

Source IR Ports

The table below shows the default IR routing of the AH66T. Connect the IR emitter for each source to the corresponding IR output.

		Active IR Ports						
		1	2	3	4	5	6	ALL
Selected Source	iPod	**X**						**X**
	Source 2		**X**					**X**
	Source 3			**X**				**X**
	Source 4				**X**			**X**
	Source 5					**X**		**X**
	Source 6						**X**	**X**
	AM/ FM Tuner						**X**	**X**
	System Off						**X**	**X**

Comm Ports

Comm Port one is preconfigured for the Sonance FS-22 or IW-22 docking station. Connect the dock as shown in Figure 4-2 on page 35 or Figure 4-3 on page 36, depending on the model of the dock.

Comm Port two is preconfigured for the RadioRA2 lighting system. Connect the lighting system as shown in Figure 4-4 on page 37.

Relay

The on-board relay is NORMALLY OPEN by default. Selecting ANY source in Zone one will activate the relay.

Lighting Commands

The OLED2 Touchpads are preconfigured to issue RadioRA2 phantom button commands one through six. The table below shows the button name as it appears on the OLED2 interface and the corresponding lighting command.

Note: The lighting system must be programmed separately. It is recommended that the lighting system be programmed to conform to the OLED2 buttons.

Default Button Configuration for all zones.	OLED2 Button Press					
	All On	All Off	Day	Night	Party	Away
RadioRA 2 Phantom Button	1	2	3	4	5	6

Specifications

Item	Description
System	Multi-Source / Multi-Zone Controller
Source Inputs Input Sensitivity Input Impedance	 0-2V RMS 47K Ohms
Pre-Amplifier Output Max. Output Power Frequency Response THD+Noise (@1KHz) Signal-to-Noise (A Weighted) Output Impedance	 6dB 20Hz to 20kHz, +/-0.5dB <0.02% >95dB 600 Ohms
Amplifier Output Max. Output Power Speaker Impedance Frequency Response THD+Noise (@1KHz) Signal to Noise (A Weighted)	 30W @ 8 Ohms 8 Ohms 20Hz to 20kHz, +/-0.5dB <0.02% >95dB
Music On Hold Output Output Impedance Max. Output Level	 600 Ohms +6dB
Page & Doorbell Input Input Sensitivity Input Impedance	 0-2V RMS 47k Ohms
Relay	24V AC/DC, 1 Amp Maximum
System Trigger Output	12VDC, 100mA

Specifications (Continued)

Item	Description
Connectors	
AC Power	3-Prong Heavy Duty Cord
A-Net IN/OUT	RJ-45
OLED2 Inputs (6)	RJ-45
Zone Speaker Outputs (6)	Removable Quick Lock Connectors
Zone Pre-Amp Outputs (6)	RCA Type, Line Level Only
Music On-Hold (MOH OUT)	RCA Type, Line Level Only
Page In/Out (PG IN/OUT)	RCA Type, Line Level Only
SENSE TRIGGER Inputs (8)	RCA Type, Line Level Only
Sense Inputs (6)	3.5mm Connectors (stereo)
Source IR Outputs (6)	3.5mm Connectors (mono)
All IR Outputs (2)	3.5mm Connector (mono)
Programming	USB-Mini
General	
OLED2 Power (Zone Input Connection)	300mA @ 12VDC per zone
Power Requirements	120VAC 50/60 Hz (AH66TINT) 230-240VAC 50/60Hz
Power Consumption	440 W
Dimensions w/Feet 2U w/out feet	17”W x 4 1/8” H x 16 1/2” D (432mm W x 105mm H x 419mm D)
Weight	
Unit Weight	25 lbs (11.3 kg)
Carton Weight	28 lbs (12.7 kg)

Limited Warranty

AH66T

ATON* warrants to the purchaser/end user ("you") that the AH66T Digital Multi-Source / Multi-Zone Controller is to be free from defects in materials and workmanship for a period of two (2) years from date of purchase (the "Warranty Period"). This warranty is transferable to subsequent owners of the product as long as the original proof of purchase is retained. If you discover a defect in material or workmanship within the Warranty Period, you can obtain warranty service by contacting ATON during the Warranty Period at (859)-422-7137 or service@atonhome.com. If ATON determines that the product is in fact defective, ATON shall, at its option, repair or replace the product free of charge to you.

This warranty shall not apply to equipment (a) not manufactured by ATON, (b) to equipment which was improperly installed, (c) which was repaired or altered by persons other than ATON or its authorized representatives or subject to unauthorized tampering, alteration or modification, (d) damaged due to misuse, negligence, accident, acts of God (including, but not limited to, excess moisture, insects, lightning, flood, electrical surge, tornado, earthquake, or other catastrophic events beyond ATON's control), or (e) subject to improper operation, maintenance or storage or unreasonable use. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installation or other expenses which may be incurred in connection with repair or replacement. The foregoing remedies shall be your exclusive remedies for any breach of warranty.

Further, the foregoing warranty does not extend to equipment sold, but not manufactured by, ATON ("Third Party Products"). With respect to any Third Party Products, the warranty for such product shall be as provided by the manufacturer of such product, who will also be responsible for warranty service, and ATON will pass through to you any transferable warranty actually extended to ATON by the manufacturer.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED AND IMPLIED WARRANTIES. ATON EXPRESSLY DISCLAIMS ALL SUCH OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.

Notwithstanding the above, where applicable, if you qualify as a "consumer" under the Magnuson-Moss Warranty Act, then you may be entitled to any implied warranties allowed by law for the Warranty Period. Some states do not allow limitations on how long an implied Limited Warranty lasts, so the above limitation may not apply to you.

ATTENTION: TO OUR VALUED CONSUMERS

Valid proof of purchase is required for all warranty services. Warranty service requests made without proof of date of purchase will be denied. Please keep the original sales receipt for your records and send a copy to request warranty service.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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