



# **DH46X**

## **4 SOURCE/6 ZONE**

### **DIGITAL AUDIO EXPANSION ROUTER**



[www.atonhome.com](http://www.atonhome.com)



## 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.**



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.



## DH46X 4 Source, 6 Zone Digital Audio Expansion Router



**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. The Master Control Unit battery should be replaced only after turning the power off and only by an authorized installer.

**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 in-stalled 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

### Caring For the DH46X

Clean only with a dry soft cloth.

It is important to properly care for your DH46X Digital Audio Expansion Router. Follow these guidelines to ensure your device is preserved and protected.

- Do not expose the DH46X to rain, liquids or moisture for an extended period of time.
- Do not expose the DH46X to temperature extremes.
- Do not place any objects on top of the DH46X to prevent chassis damage.

### Operating Temperatures & Environments

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

### Precautions

- Always exercise care when operating the DH46X Digital Audio Expansion Router.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- In the unlikely event that smoke, abnormal noise, or strange odor is present, immediately power the DH44 off. Please report the problem to your dealer immediately.
- Never attempt to disassemble the DH46X. You will lose any product warranty on the unit.



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## DH46X 4 Source, 6 Zone Digital Audio Expansion Router

### 1. Introduction

#### Modern Convenience

The DH46X 4 Source, 6 Zone Digital Audio Expansion Router, when used with the DH44 Digital Audio Router, provides the ability to listen to 4 different audio sources in up to 28 separate areas of the home for total flexibility and convenience. No need to have multiple audio systems in different areas, just select a source from one of ATON's revolutionary Touch Pads, sit back and enjoy!

#### Elegant Control Options

Select a custom faceplate option for each touchpad to blend into the décor of every room to fit the way you live. ATON's DHTP1 Amplified Touch Pads (sold separately) provide full system control - source selection, volume, tone, mute, etc. - with no unsightly buttons. Use the included learning Remote Control to fully control each source connected to the DH46X.

#### Crystal Clear Digital Sound

End-to-end digital architecture means that the entire signal path of the audio system remains in the digital domain from start to finish. This means that noise, signal loss and other unwanted effects are never present. Each touchpad contains a 30 Watt per channel digital amplifier that allows the user to play music at loud volume when desired. This also means that music at any volume is full and rich, without distortion and with plenty of bass!

#### Simple, Logical Installation

The DH44 and DH46X connect with CAT-5 and speaker wire, making them reliable and easy to install. Any digital or analog audio source can be connected directly to the DH44 Digital Audio Router, or remotely using a DHSIP Local Source Wall Plate. Touch Pads and Wall Plates are connected to the DH46X using CAT-5 wiring (inexpensive and reliable), while speakers are connected to DHTP1 Amplified Touch Pads using traditional speaker wire.

#### Entertaining Possibilities

Whole House Music and Zone Grouping features make entertaining more fun than ever. Fully customized audio options allow for control of the entire house from one location and also allow for the creation of multiple zone linking, where groups of zones work together..

#### Control for Parents

The Source Lock Out feature allows you to disable specific sources in the kid's rooms that you don't want them to access.

#### About DIGI-5 Technology

DIGI-5 is a revolutionary new technology standard that provides a complete end-to-end digital audio solution over Cat-5 wiring. DIGI-5 is based on advanced digital distribution and amplification circuits that allow multi-room audio systems to be installed quickly and cost effectively.

DIGI-5 is a collaboratively developed technology that is licensed by the Linear Home Technology Group and is being initially integrated on a Linear group-wide basis, targeted to expand market and consumer acceptance of such systems.

#### Package Contents

**DH46X Digital Audio Expansion Router**

**DH4RM Slimline IR Remote**

**User/Installation Manual**



### Features

- **4 Source, 6 Zone Expansion for DH44 Digital Audio Router**
- **Combine Up to 4 DH46X Chassis for Total of Up to 28 Zones**
- **Stand-Alone 4 Source 6 Zone Capability Expandable to 24 Zones**
- **End-to-End Digital Architecture For Crystal Clear Sound with No Signal Loss**
- **Simple Cat-5 Wiring requirements**
- **Innovative DHTP1 Amplified Touchpad Controllers (not included) Provide Custom Control Options**
- **No PC Software Required for Setup-Simply Plug in DHTP1 Touch Pads and Go**
- **DH4RM Slimline IR Remote Included**
- **Whole House Music-Turns On All Zones to the Same Source**
- **Zone Functions, Do Not Disturb, Source Lock Out, Tone Control, Balance, Loudness, Dynamic Range Compression (DRC)**
- **Local (In-Room) Source Connectivity with Optional DHSIP Local Source Wall Plates**
- **Supports all Features of DH44 Digital Audio Router**
- **Paging/DB Functionality w/ Optional Communications Controller**
- **Compact Single Rack Space Design**
- **Rack Mountable – Optional Rack Ear Kit Available (REKT)**
- **2 Year Limited Warranty**

### ATON DH46X Accessories

<b>DH44</b>	<b>4 Source, 4 Zone Digital Audio Hub</b>
<b>DHTP1</b>	<b>Amplified Touchpad Controller</b>
<b>DHSIP</b>	<b>Source Input Wall Plate</b>
<b>DH4RM</b>	<b>Slim-Line Remote</b>
<b>DH44KT</b>	<b>Complete Kit w/ DH44 Router, 4 DHTP1 Touch Pads, 1 DHSIP Source Input Wall Plate, 4 IR Emitters, and Learning Remote</b>

*Note: For more information and purchase options, visit our website at: [www.atonhome.com](http://www.atonhome.com).*



## DH46X 4 Source, 6 Zone Digital Audio Expansion Router

### Defining Terms

#### Zone

A **Zone** is defined as an area of the house that has separate source selection capabilities from all other areas of the house. Typically, a zone is comprised of a single room, but it is possible for a zone to spread across multiple rooms (kitchen/dining room, master bedroom/master bath) or for multiple zones to be contained in one room (game room/bar area or multiple zones in the yard).

#### Source

A **Source** is any audio (or audio/video) device that is connected to the **SOURCE INPUTS** of the DH44. Any **Source** can be heard in any zone in the system.

#### Local Source

A **Local Source** is an audio (or audio/video) device that is connected to a **DHSIP Source Input Wall Plate**. Local Sources are able to be heard only in the zone in which they are installed and may not be heard in other zones of the system.

### Front Panel

The front panel of the DH46X is populated simply by a Power LED and a power button. **Figure 1-2** and **Table 1-1** provide descriptions and locations of Front Panel controls and indicators.



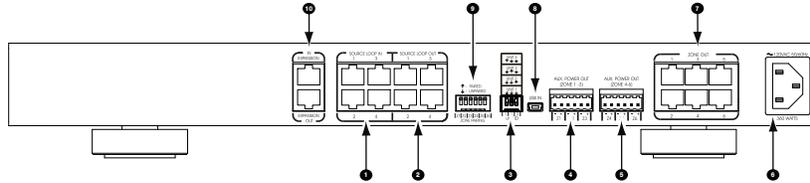
**Figure 1-2: DH46X Front Panel**

	Indicator/Button	Function	LED
1	Power LED	Indicates Power ON/OFF Status	Red
2	Power Button	Turns System Power ON/OFF	

**Table 1-1: Front Panel**

**Rear Panel**

The Rear Panel of the DH44 has connections for Power, Source Loop Inputs (from DH44), Source Loop Outputs (to additional DH46X chassis), Zone Outputs, IR Outputs, Auxiliary Power, USB and Expansion capabilities as well as Zone Pairing and Unit I.D. DIP Switches. **Figure 1-3** and **Table 1-2** provide descriptions and locations of Rear Panel connections.



**Figure 1-3 : Rear Panel**

Item	Connector	Function
1	Source Loop Input	Source Audio Inputs from DH44
2	Source Loop Output	Source Audio Outputs to DH46X Expansion Chassis
3	Unit I.D. DIP Switches	Sets Chassis Unit Identification
4	Aux. Power Out Zones 1-3	Provides Additional Power to Touch Pads
5	Aux. Power Out Zones 4-6	Provides Additional Power to Touch Pads
6	AC Power Connector	Plugs into 110 VAC Wall Outlet
7	Zone Output Ports	Connect to DHTP1 Amplified Touch pads Located in Each Zone
8	USB Port	For Firmware Updates
9	Zone Pairing Switches	Links Multiple Zones Together
10	Expansion Port IN/OUT	Control/Status Link Between DH44 and Additional DH46X Chassis



## 2. System Design Overview/Applications

### Planning

Before installing the DH46X, it is essential to have a detailed and accurate system design. 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, Touch Pad and equipment locations, etc. Make sure that all locations are decided upon before pre-wiring so that all necessary wiring and installation hardware is in place.

It is essential that ALL system components are accounted for prior to the pre-wire stage. After establishing design goals, make a detailed list of all components. Include source equipment, Touch Pads, expansion Routers, local source wall plates, IR emitters, etc.

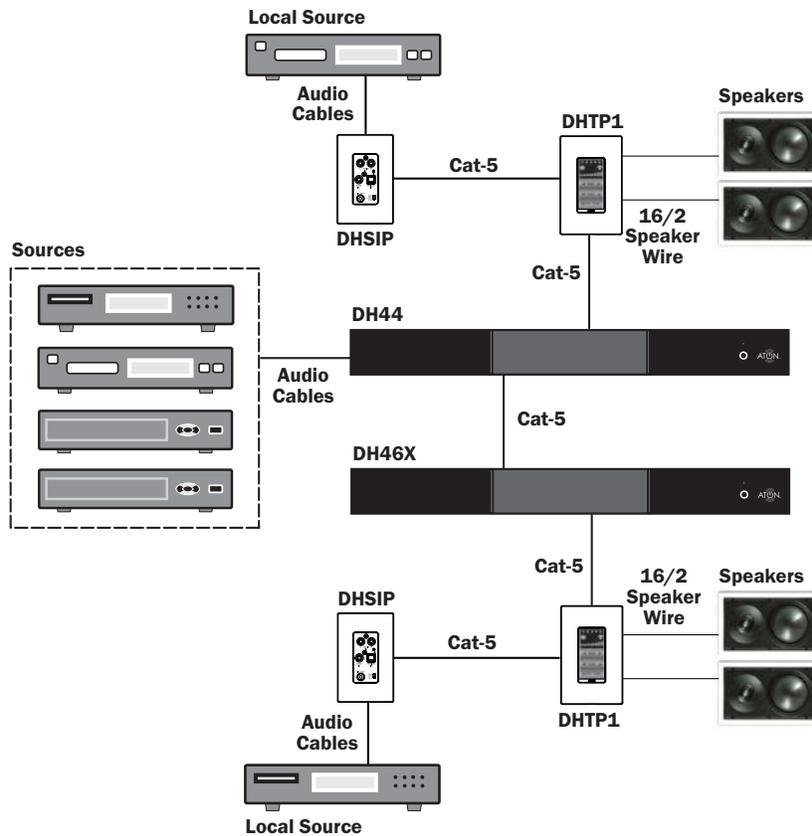


Figure 2-1 : System Wiring Overview

Note: For clarity, Figure 2-1 shows a single zone connected to a DH44 and a single zone connected to a DH46X Expansion Router.

## DH46X 4 Source, 6 Zone Digital Audio Expansion Router



### Pre-Construction

In a pre-construction installation, walls and ceilings are open with no drywall installed. This is desirable and allows the installer greater access than in retro-fit applications.

Before actually running any wire or cable, take the time to look around each room or area of the house and plan your wire paths for maximum efficiency. Look for routes through uncluttered parts of the stud wall or ceiling that allow you to group all low-voltage (video, speaker wires, Cat-5, telephone, etc.) wires wherever possible. It is a good practice to label both ends of all cables and to protect wires by tying a plastic bag over the ends.

**Note: Do not run low-voltage wires closer than 12" from high-voltage wires. If necessary, cross low-voltage wires at a 90° angle to prevent interference.**

### Retro-Fit Wiring/PostConstruction

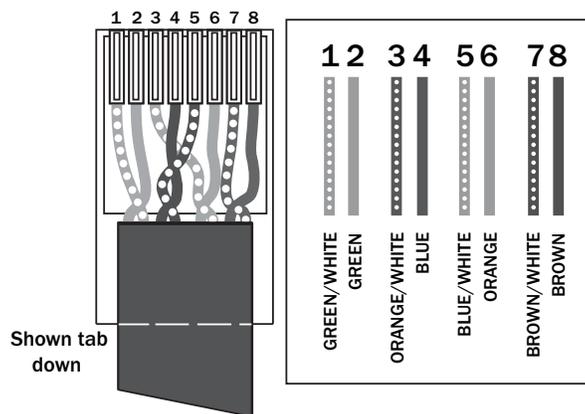
Retro-fit installations are more difficult to complete than pre-construction because walls and ceilings are intact. Typically wires must be fished into position through walls, floors and ceilings. Holes must be cut; speakers mounted directly in the ceiling or walls with no rough-in brackets and Touch Pads and local source wall plates must be mounted in existing drywall.

### Pre-Wiring

#### DH46X to DHTP1 Touch Pads

The DH46X and all associated components are wired using Cat-5 terminated to the T-568A Wiring Standard (**Figure 2-2**). When pre-wiring, run lengths of Cat-5 from the pre-determined equipment location (the "head-end") to each Touch Pad location. The Cat-5 routes all audio, power, IR and status information needed for full system operation.

**Note: For maximum performance over long runs (more than 150 ft) run an additional 16AWG 2-conductor wire for external power.**



**Figure 2-2 : T-568A Wiring Standard**

#### Touch Pads to Speakers

Run 16AWG 2 conductor stranded copper speaker wire between touchpad locations and speaker locations.



## DH46X 4 Source, 6 Zone Digital Audio Expansion Router

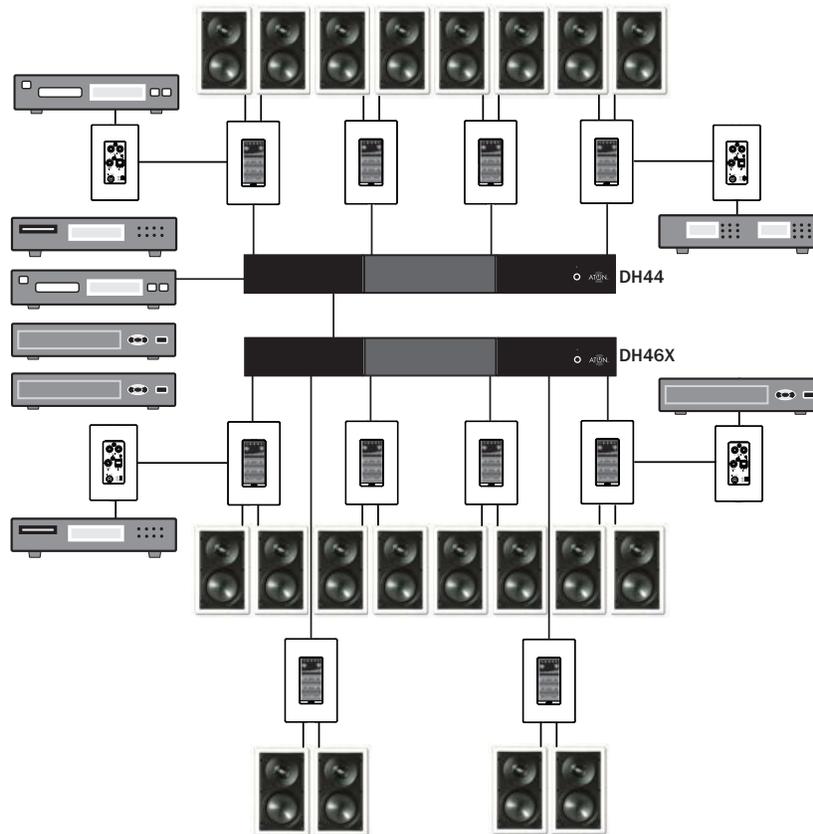
### Local Sources to Touch Pads

Local sources are only available within the area that they are installed. They will not be available to other areas of the house as they are not distributed by the DH44/DH46X. Run lengths of Cat-5 from any local (in-room) source to the touchpad located in that area.

### Expanded 4 Source, 8-28 Zone System

#### DH46X Expansion Router

**Figure 2-5** shows an expanded system with four sources and ten zones with the addition of Local Sources in four of the zones. Each zone can have **one** local source. The system is comprised of a **DH44 Digital Audio Router**, **DH46X Expansion Router**, **DHTP1 Amplified Touchpad Controllers**, **DHSIP Local Source Wall Plates** and **ATON Storm Series Speakers**. This configuration provides audio from each source into each zone as well as control of each source from each zone. Zones with Local Sources have access to and control of those sources, but the Local Sources are **not** available to other zones within the system. This system can be expanded up to 28 zones using additional DH46Xs.



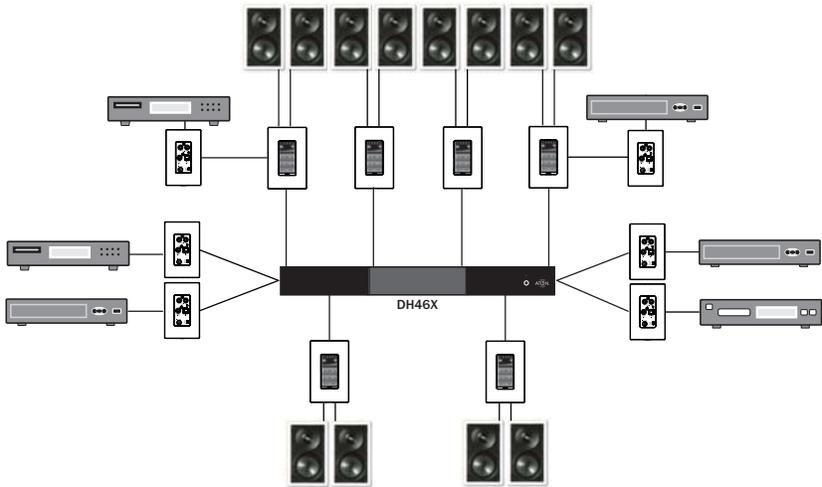
**Figure 2-5 : Expanded System - 4 Sources/10 Zones + Local Sources**

**DH46X 4 Source, 6 Zone Digital Audio Expansion Router**



**Stand-Alone (No DH44) 4 Source, 6 Zone System**

Figure 2-6 shows a stand-alone system with four sources and six zones with the addition of Local Sources in two of the zones. Each zone can have **one** local source. The system is comprised of a DH46X , DHTP1 Amplified Touchpad Controllers, DHSIP Source Input Wall Plates and ATON Storm Series Speakers. This configuration provides audio from each source into each zone as well as control of each source from each zone. Zones with Local Sources have access to and control of those sources, but the Local Sources are **not** available to other zones within the system. This system can be expanded up to 24 zones using additional DH46Xs.



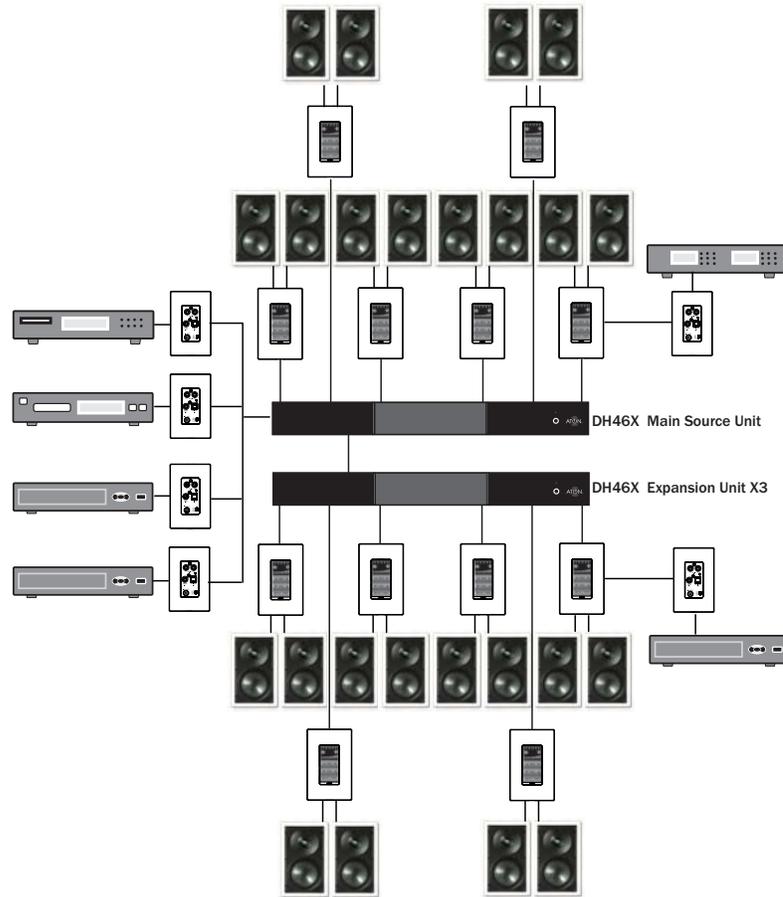
**Figure2-6: Stand-Alone 4 Source, 6 Zone**



## DH46X 4 Source, 6 Zone Digital Audio Expansion Router

### Expanded Standalone (No DH44) 4 Source, 6-24 Zone System

**Figure 2-7** shows a stand-alone system with four sources and twenty four zones with the addition of Local Sources in eight of the zones. Each zone can have **one** local source. The system is comprised of four DH46X , DHTP1 Amplified Touchpad Controllers, DHSIP Source Input Wall Plates and ATON Storm Series Speakers. This configuration provides audio from each source into each zone as well as control of each source from each zone. Zones with Local Sources have access to and control of those sources, but the Local Sources are **not** available to other zones within the system.



**Figure 2-5 : Expanded System - 4 Sources/24 Zones + Local Sources**

### 3. Connections

The DH46X is part of an integrated system that requires the use of other components. Depending on the system design, these components may include:

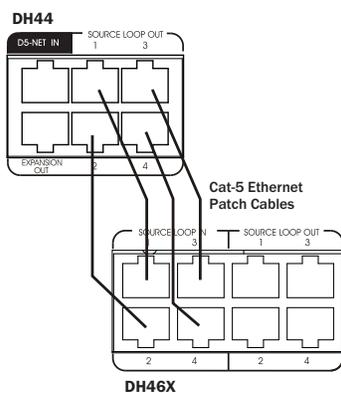
- **DH44 Main Digital Audio Router w/Integrated Source Inputs**
- **DHTP1 Amplified Touch Pads - at least one per zone required**
- **DHSIP Source Input Wall Plates - one per zone where a Local source is desired**
- **ATON Storm Series Outdoor, Ceiling and In-Wall Speakers**
- **ATON IR Emitters and accessories**

This section describes the connectivity between these various components and the source audio components that comprise the system. Each DH44/DH46X system is unique, and not all connections will be made in every installation.

**Important Safety Note: Make sure that the DH46X is powered OFF before making any connections.**

#### Source Loop Inputs (SOURCE LOOP IN)

The Source Loop Inputs are used primarily when adding DH46X Routers to a DH44 in order to create more than four zones. These connectors carry Audio, and IR information between the units and allow seamless functionality in all areas of the home with no complicated cross-wiring, splicing or specialized adapters needed. When adding a DH46X Router to a DH44 system, simply connect Cat-5 Patch Cables (included with the DH46X) from the **SOURCE LOOP OUTS** of the DH44 to the **SOURCE LOOP INs** of the DH46X as shown in **Figure 3-1**. Complete connections for expanded systems are described in the section entitled **Multi-Chassis Connections**.



**Figure 3-1: Source Loop Inputs**



## DH46X 4 Source, 6 Zone Digital Audio Expansion Router

### EXPANSION IN

Connect the Cat-5 Patch Cable included with the DH46X from the DH44's **EXPANSION OUT** port to the DH46X's **EXPANSION IN** port as shown. Complete connections for expanded systems are described in the section entitled **Multi-Chassis Connections**.

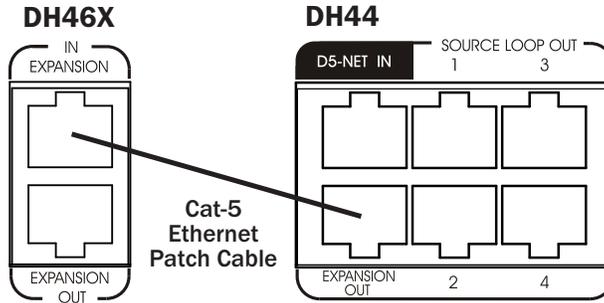


Figure 3-2: Expansion In

### ZONE OUT

The **ZONE OUT** RJ-45 connectors interface with **DHTP1 Amplified Touchpad Controllers** through Cat-5 cables wired to the T-568A Standard. These connectors carry IR information from the Touch Pads as well as audio information to the Touch Pads. Status information is also carried between the DH44/DH46X chassis and the Touch Pads. While a great deal of information is handled by the **ZONE OUT** connections, the connections are straightforward. Simply connect Cat-5 cables terminated to the T-568A configuration (**Figure 3-3**) from each touchpad to the corresponding **ZONE OUT** connector as shown in **Figure 3-4**.

**Note: For wire runs up to 150', the Cat-5 connections are all that is necessary. For wire runs over 150', use the AUX POWER OUT connectors as described in the section entitled Auxiliary Power Connector (AUX POWER OUT).**

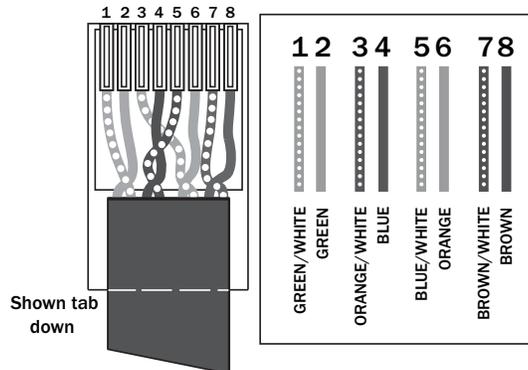
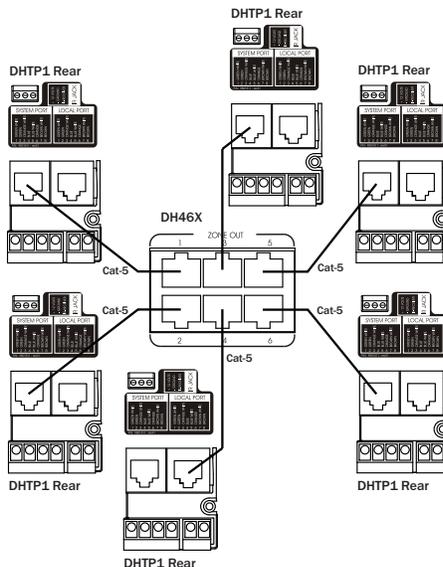


Figure 3-3: T-568A Wiring Standard

## DH46X 4 Source, 6 Zone Digital Audio Expansion Router



**Figure 3-4: ZONE OUT Connections**

### DHTP1 Speaker Connections

The DH46X sends a digital audio signal to connected DHTP1 Touch Pads where it is amplified and sent to speakers.

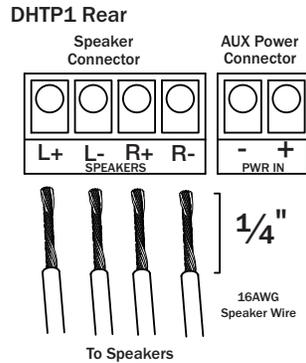
**WARNING!: The DHTP1's amplifier is capable of powering a single pair of 8-6 Ohm speakers. DO NOT connect speakers with a rating of less than 6 Ohms! DO NOT connect more than one speaker to either speaker connector of the DHTP1. In doing this, damage to the DHTP1 may occur and will void the products warranty.**

To connect speakers to DHTP1 Touch Pads:

1. Ensure that system power is OFF!
2. Remove the SPEAKER CONNECTOR from the DHTP1
3. Strip speaker wire back 1/4"
4. Loosen speaker terminal screws on the speaker connectors
5. Insert speaker wires into terminals making sure to maintain +/- polarity
6. Tighten screws on speaker terminals
7. Re-connect the terminal strip to the SPEAKER CONNECTOR on the DHTP1
8. Connect speaker wires to the room speakers maintaining correct polarity



## DH46X 4 Source, 6 Zone Digital Audio Expansion Router



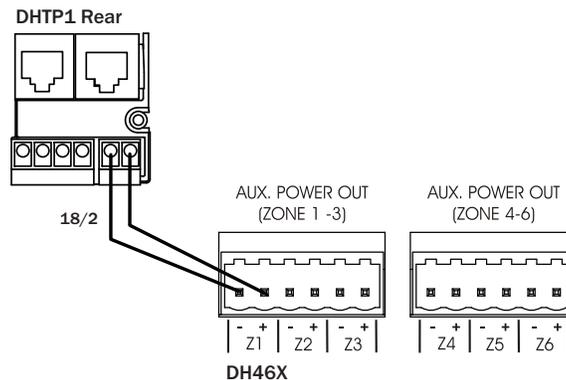
**Figure 3-5: Speaker Connections**

### Auxiliary Power Connector (AUX POWER OUT)

For wire runs over 150', it is recommended to run an additional 16 AWG/2 conductor wire from the head-end location to the Touch Pad locations. This will allow the **AUX POWER OUT** terminals to supply additional power to the Touch Pads to compensate for the additional distance. For wire runs over 300', 16 AWG/2 conductor wire is required. The maximum wire run using Cat-5 and 16 AWG/2 conductor is 600'. Make all connections between the DH46X and the DHTP1 Amplified Touch Pad as previously described, then make the aux power connections described below.

To make connections:

1. Ensure that system power is OFF!
2. Strip the ends of the 16 AWG wire 1/4" on both ends of the wire run.
3. Remove the terminal strip from the AUX POWER OUT connector on the DH46X.
4. Loosen the screws for the appropriate zone's terminal pairs on the terminal strip.
5. Insert the wires into the terminal strip, paying close attention to polarity (+/-).
6. Tighten the screws on the terminal strip.
7. Remove the terminal strip from the PWR IN connector of the DHTP1.
8. Loosen the screws on the DHTP1's PWR IN terminal.
9. Insert the wires into the terminal, paying close attention to polarity (+/-).
10. Tighten the screws on the DHTP1's PWR IN terminal.
11. Connect the terminal strip back onto the AUX POWER OUT connector on the DH46X



**Figure 3-6: AUX POWER OUT ZONES 1-3, 4-6, Connections**

## DH46X 4 Source, 6 Zone Digital Audio Expansion Router



### USB Port (USB IN)

The USB IN port is designed to allow upgrades to the DH46X's firmware.

### AC Power Connector

Connect the supplied cord from the AC Power Connector into a properly grounded electrical outlet.

### System Expansion

The DH46X is capable of supporting up to four sources to up to six zones. The system may be expanded in two ways:

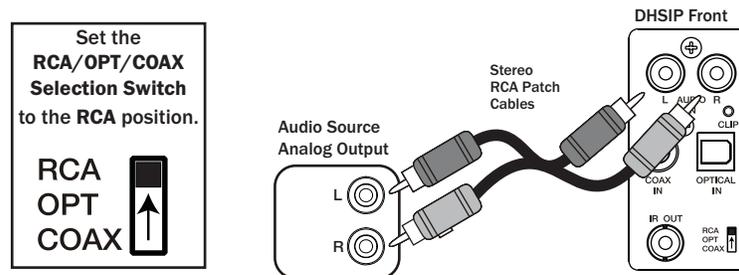
- **Local Sources**
- **Adding Zones (Additional DH46X chassis)**

#### Local Sources

Each zone of a DH44/DH46X-based system can have its own "Local" source connected directly to the zone's DHTP1 Amplified Touchpad using a DHSIP Source Input Wall Plate. A source connected to a DHTP1 is accessible from the zone in which it is connected. It is NOT AVAILABLE to the other zones of the system. Both audio and IR control capabilities are available to Local Sources through the DHTP1. A zone may have a maximum of one Local Source.

#### DHSIP Source Input Wall Plate

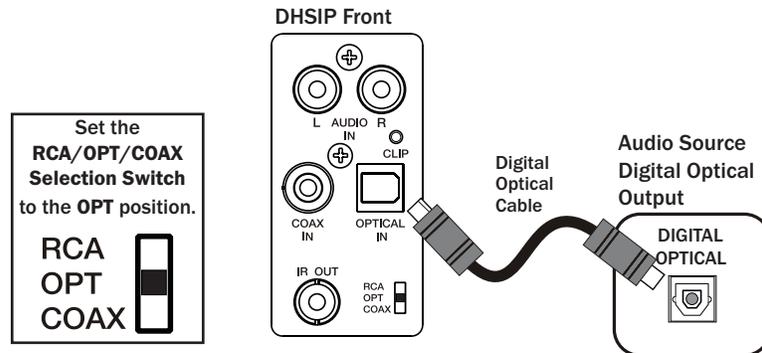
A DHSIP Source Input Wall Plate is required to add a Local Source to a zone. The wall plate has audio and IR connections similar to the SOURCE INPUT of the DH44. A run of Cat-5 terminated to T-568A standard (see **Figure 3-3, page 12**) is required between the DHTP1 Amplified Touchpad and the location designated for the DHSIP. Connections between a source component and the DHSIP are detailed in **Figure 3-7, Figure 3-8** and **Figure 3-9**, while connections between the DHSIP and the DHTP1 Amplified Touchpad are detailed in **Figure 3-10**.



**Figure 3-7: Local Source to DHSIP Connections - Analog**



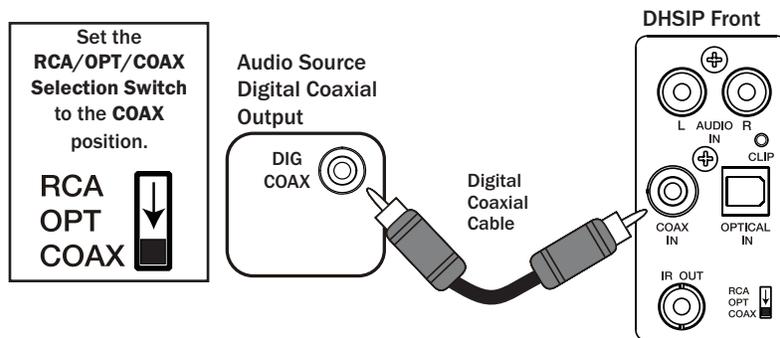
## DH46X 4 Source, 6 Zone Digital Audio Expansion Router



**Figure 3-8: Local Source to DHSIP Connections - Digital Optical**

**NOTE:** Multi-channel digital audio formats (5.1, 7.1 etc.) are not supported by the DHSIP, DH44, or DH46X. However, many audio/video sources allow you to change the digital output to PCM Stereo. In most cases this will allow multi-channel audio sources to output a "summed" stereo signal through the digital output. Consult the audio/video source manual for details.

**NOTE:** Some audio sources which utilize a digital output require that you enable the digital output before it will function. If there is no audio present, check the setup menu of the audio source to confirm that the digital output is enabled.



**Figure 3-9: Local Source to DHSIP Connections - Digital Coaxial**

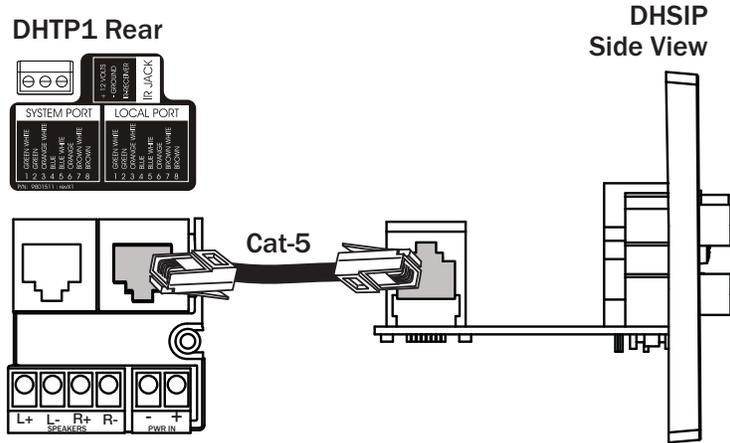


Figure 3-10: DHSIP to DHTP1 Connections

**IR OUT**

Connect a standard IR Emitter (ATON AIE2, for example) from the IR OUT port on the front of the DHSIP to the IR receiver on the front of the audio source (see **Figure 3-11**). For sources that have an IR Input port on the back of the unit, use a 3.5mm to 3.5mm mono interconnect cable instead (see **Figure 3-12**).

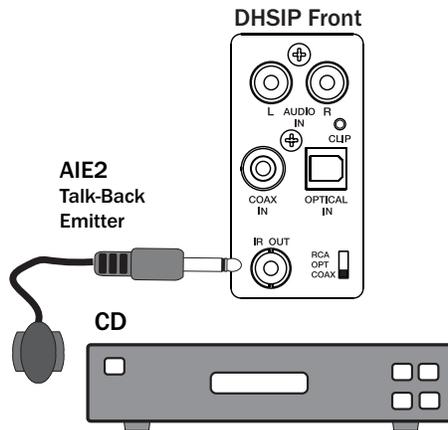
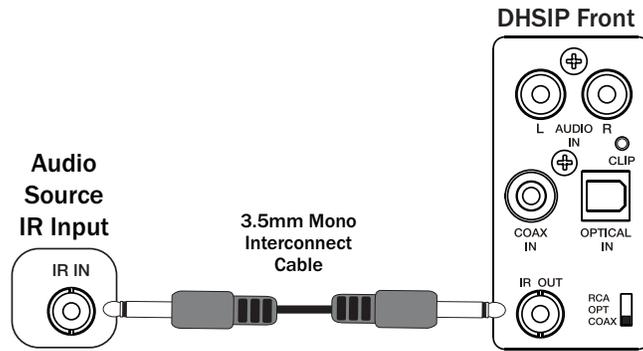


Figure 3-11: IR OUT to Local Source - IR Emitter



**DH46X 4 Source, 6 Zone Digital Audio Expansion Router**



**Figure 3-12: IR OUT to Audio Source  
3.5mm Interconnect Cable**

## DH46X 4 Source, 6 Zone Digital Audio Expansion Router



### Adding Zones to a DH44 Digital Audio Router

A basic DH44 system can contain a maximum of four sources and four zones. By adding DH46X Digital Audio Routers, the system can contain a maximum of twenty-eight zones. Each DH46X expands the system by up to six zones, while still maintaining a four source maximum limit. This section details connections required for adding DH46X Digital Audio Routers to a DH44.

# of Chassis	Max # of Zones
DH44 x 1	4
DH44 x 1/DH46X x 1	10
DH44 x 1/DH46X x 2	16
DH44 x 1/DH46X x 3	22
DH44 x 1/DH46X x 4	28

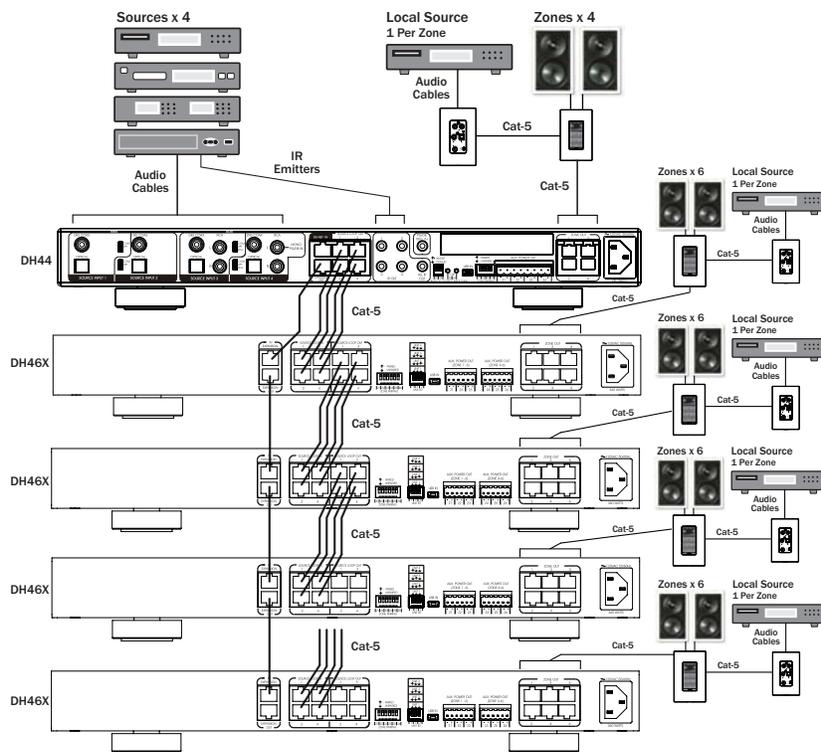


Figure 3-13: Expanded System Overview