Introduction

Thank you for choosing Harman Kardon! The ABH 4000 Expansion Hub will enable you to extend the capabilities of an A-BUS®-based multiroom system to four zones and up to eight or more rooms, with a Harman Kardon® AB 2 amplified module as the control point. A few simple connections to a Harman Kardon A-BUS-equipped product, or a source device's multiroom, tape or line-level output, will enable you to add the power and simplicity of A-BUS to your home.

We strongly recommend that you read this instruction sheet carefully before installing your new ABH 4000. If you do not have experience installing in-wall electrical and telecommunications components, you are advised to consult with a qualified low-voltage contractor or custom installer.

If you have any questions about this product, its installation or its operation, please contact your retailer or custom installer. They are your best source of product information.

The ABH 4000 will add to your listening pleasure by distributing sound through-out your home with the level of performance for which Harman Kardon has been famous for more than fifty years.

Features

- Simple connection to any A-BUS-equipped Harman Kardon receiver and many other A-BUS products
- Analog audio inputs and outputs, along with IR outputs, enable use with non-A-BUS products as well
- Adds A-BUS capability to multiroom systems with only a single Category 5 cable run to each remote module
- Allows for up to four separate zones, each distributing an independent source device
- Two banks available, allowing up to two rooms per zone
- Expandable to up to 16 zones using additional ABH 4000 hubs
- Infrared (IR) commands from each zone are routed separately, allowing for more than one source device of a given type
- Twelve-volt trigger output may be used to power on source devices
- Designed for easy mounting on wire back-boards, or for shelf placement

IMPORTANT SAFETY AND INSTALLATION INFORMATION!

Wire Separations

Category 5 wiring systems must be installed to minimize the possibility of accidental contact with hazardous power and lighting wiring. Never place Category 5 wiring near bare power wires or lightning rods, antennas, transformers, steam or hot water pipes, or heating ducts. Never place Category 5 wire in any conduit, box, channel, duct or other enclosure containing power or lighting circuits of any type. Always provide adequate separation between Category 5 wiring and other electrical wiring according to code. When in doubt about separation distances, the "Rule of Sixes" can be used. This rule requires 6 feet of separation between Category 5 wiring and open high-voltage wiring, lightning grounding wire or grounding rods. It requires 6 inches of separation from all other high-voltage wiring, unless in conduit. Of course, local building and electrical codes always govern.

Cutting and Drilling

Always observe all applicable safety rules for in-wall wiring. Be extremely careful not to cut through or drill into concealed wiring or pipes. Make a small inspection opening before cutting or drilling.

Additional Installation Information

Common wire-splicing techniques may cause the wire to break, resulting in poor circuit integrity. This can cause interference and result in poor system performance.

Dust or dirt can cause special problems on wiring contacts. Be sure all contacts are clean and that all parts are installed correctly to protect them from dust and dirt.

Your new Harman Kardon ABH 4000 A-BUS Expansion Hub has been designed only for use with A-BUS products. Do not connect the RJ-45 jacks to any other device.

Make sure to follow all instructions when preparing wiring for use with the ABH 4000 Expansion Hub and associated equipment. Failure to do so may result in a potential safety hazard, including possible danger to persons and/or equipment.

If you will be running RJ-45 cable through a ventilation plenum, use plenum-rated cable to comply with NEC and local electrical codes. Failure to do so may result in a potential fire or safety hazard.

Installation Planning

The ABH 4000 may be placed flat on a shelf or mounted to a wire back-board using standard wood screws and the keyhole notches on its outer edges. The unit's power supply must be placed on a shelf and should not be attached to a back-board. When planning an installation, allow sufficient clearance for all wires
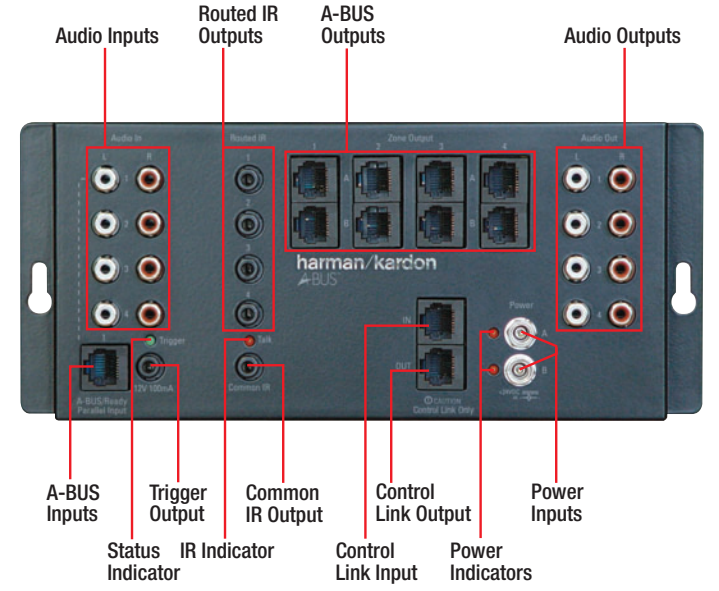
and connectors that will be attached to the ABH 4000 so that severe angle bends of connecting cables are avoided.

The wiring used to connect the ABH 4000 to the A-BUS-equipped product and A-BUS modules in remote rooms may be Category 5 or higher wiring. Consider any specific electrical or building code requirements for riser or plenum use. The system speaker wiring should also be in-wall-rated as required, and may not exceed 2 square millimeters. To simplify wiring, use two pairs of (4 x 14) CL-3-rated in-wall wiring and run a single cable from each amplified A-BUS module to both locations. One pair will be used to connect the first speaker and the other will continue to the second speaker.

What Is Included

Your ABH 4000 should be packed with the following items. If any of the below are missing, please contact Harman Kardon customer service.

- ABH 4000 Expansion Hub
- One Power Supply
- One AC Power Cord
- RJ-45 Connection Jumper Cable

Audio Inputs Routed IR Outputs A-BUS Outputs Audio Outputs

A-BUS Inputs Trigger Output Common IR Output Control Link Output Power Inputs

Status Indicator IR Indicator Control Link Input Power Indicators

ABH 4000 Connections and Indicators

Audio Inputs: When the ABH 4000 is used with a receiver or source devices without an A-BUS jack, connect the analog audio outputs from the receiver or source to one set of these input jacks. Up to four independent devices may be connected to the Audio Inputs, each of which may be selected by any one or more of the ABH 4000's four output zones.

NOTES:

- When any source is selected, the ABH 4000 hub and all A-BUS modules connected to it that do not have individual power on/off capabilities will turn on.
- Audio Input 1 is wired in parallel with the A-BUS Input. If the A-BUS input is connected directly to an A-BUS-equipped device, no connections should be made to Audio Input 1.

A-BUS Input: This jack connects to the device that is providing the A-BUS system source that feeds the A-BUS modules used with this ABH 4000. In most applications, the connection will be to the A-BUS port on an A-BUS-equipped Harman Kardon receiver. Do not connect the A-BUS Input to the Control Link Output of another ABH 4000, or the expansion output of a Harman Kardon ABH 4 or other A-BUS expansion hub. Connect multiple hubs, using the Control Link Input and Output. The connection should be made using a standard TIA 568A RJ-45 jumper cable.

Status Indicator: This LED will light when the ABH 4000 is activated. In most cases, it will light when a Harman Kardon A-BUS-equipped product connected to the ABH 4000 is turned on, or when a command is received from any of the four zones. When the ABH 4000 is used with non-A-BUS products, the Status Indicator will light when any of the four sources is selected. When the Status Indicator is lit, a 12V signal is available at the Trigger Output.

Trigger Output: The Trigger Output may be used to turn on compatible devices when the ABH 4000 is activated, as indicated by the Status Indicator.

Routed IR Outputs: When the ABH 4000 is used with non-A-BUS sources, these jacks may be used to route IR signals to devices with compatible remote IR inputs, or to optional remote IR emitters. The emitters should be placed over the IR receiver in the source components to be controlled. This enables a remote to control source components, from the room where an A-BUS module is installed, when the module includes an IR receiver.

NOTE: The Routed IR Outputs will only emit commands from the zone that has selected the source, allowing connection of more than one source device of the same type to the ABH 4000 without concern that commands issued from one zone will have undesired effects on playback in another zone. However, if the source devices are physically near each other, you may wish to use light-block-ing caps with the emitters to prevent cross-communication.

Common IR Output: This output passes control commands from all zones to compatible non-A-BUS devices, allowing control of common components. It may

be convenient to connect this output to the compatible IR input of an A/V receiver without A-BUS.

IR Indicator: This LED will flash to confirm that an IR signal is being passed through the ABH 4000. This signal may originate from a remote A-BUS module in any of the four zones.

A-BUS Outputs: These jacks are the communications link between the remote A-BUS modules and the ABH 4000, carrying audio signals and power to the A-BUS modules, and IR or other control commands from the A-BUS modules to the ABH 4000 and products connected to it. Connect a Category 5 cable from each remote A-BUS module to these outputs using standard RJ-45 connectors with cabling wired in compliance with the TIA 568A standard. When expanding the system using single-source A-BUS devices other than additional ABH 4000 hubs, connect the devices to one of the A-BUS Outputs. If the device is powered (e.g., an ABH 4 hub), it may be connected without using the ABH 4000's power supply.

Audio Outputs: The ABH 4000 passes signals from the Audio Inputs straight through to the corresponding Audio Outputs for sharing with other devices, such as an A/V receiver.

Control Link Output: If you are using more than one ABH 4000 in your system to add additional rooms, connect one end of a jumper cable with RJ-45 connectors to this jack. Connect the other end of the jumper cable to the Control Link Input on the next ABH 4000. To expand the system using an ABH 4 or other hub, connect one of the ABH 4000's A-BUS Outputs to the expansion input on the ABH 4 or other hub. You may use one of the Bank B A-BUS Outputs for this purpose without connecting a power supply.

Control Link Input: Connect this jack to the Control Link Output on another ABH 4000 to expand the total number of rooms in your system.

NOTES:

- The Control Link Input and Output are used to pass control data between ABH 4000 expansion hubs in an A-BUS system. Do not connect the Control Link Input or Output to any device other than an ABH 4000.
- Do not connect an ABH 4000 to the Expansion Output of an ABH 4 hub, as the ABH 4000 will not operate correctly.

Power Inputs: Connect the 2.5mm DC plug at the end of the ABH 4000 power supply to Power Input A, to power Bank A of the system. If you are con-necting modules to Bank B of the system, a second power supply (not included) must be connected to Power Input B. Do not use a power supply other than one recommended by Harman Kardon, to avoid damaging the ABH 4000 or other system components.

Power Indicators: These LEDs will light to indicate that Bank A or Bank B of the ABH 4000 is connected to a power source that enables the remote modules and the infrared relay system to operate. This power source may be either a connection to an A-BUS product, the ABH 4000's power supply or through a connection to another ABH 4000. The ABH 4000's external power supply must be connected in order for it to power multiple remote modules.

INSTALLATION AND CONNECTION

Important Safety Note

Before beginning the installation process, turn off all electronics products in the system and disconnect them from their A/V power connection. This avoids the possibility of accidental activation that could possibly damage the equipment or cause personal injury. Do not turn on the equipment until instructed.

The ABH 4000 may be used in two modes of operation. The installation process will vary, according to which option you select.

- When used in conjunction with an A-BUS-equipped Harman Kardon product, the ABH 4000 provides the power that enables up to eight remote rooms to be equipped with A-BUS modules such as the Harman Kardon AB 1 or AB 2, with more room installations possible through the use of additional ABH 4000 or ABH 4 hubs.
- The ABH 4000 may also be used with any receiver, preamplifier or surround processor that has an analog audio output to send the selected source to A-BUS modules installed in remote rooms. Alternatively, up to four source devices may be connected to the ABH 4000 to create a multiroom audio system with up to four independent zones.

Mounting the ABH 4000 (optional)

The ABH 4000 may be mounted on a wall, using the screw slots provided on the sides of the unit, or it may be placed on any flat surface.

- To mount the ABH 4000 to a wall, first make certain that there is sufficient clearance on all sides for any cables that will be attached.
- While holding the ABH 4000 to the wall, trace the outline of the slots on the "wings" on the left and right sides of the ABH 4000 onto the wall.
- Drill a pilot hole and install an anchor or retaining socket sufficient to accommodate a #10 pan-head Phillips-type wood screw that is at least long at each side, under the circular part of the tracing. If possible, attach at least one side of the ABH 4000 to a wall stud, instead of using a wall anchor. If you have any

questions or doubt about the ability of the wall surface to properly support the weight of the ABH 4000, consult a properly trained installer before proceeding.

- When the anchor is installed, place a screw through the slot on either side of the ABH 4000, and tighten the screw most of the way into the anchor.
- Slip the ABH 4000 so that it slides down the keyhole notch of the slot, and tighten it securely.

Connections to an A-BUS-Equipped Product (see Figure 1)

Step One: Connect the ABH 4000 to the Receiver

Connect one end of the included RJ-45 jumper cable to the **A-BUS Input** and the other end to the A-BUS jack on the rear panel of your Harman Kardon receiver.

Step Two: Connect the A-BUS Modules

Connect the RJ-45 jacks on the Cat. 5 cabling that runs to the remote room modules to the **A-BUS Outputs**. Make certain that the connector is wired in accordance with the standard TIA 568A color-coding. Connect the A-BUS modules in the remote rooms to the Cat. 5 cable in accordance with the color-coding on the module. Install loudspeakers in each remote room and connect them to the A-BUS modules, following the manufacturers' instructions.

NOTE: To control the system from the remote zones, or when a non-A-BUS-equipped source is used, at least one A-BUS module in each zone must have an infrared receiver or the ability to control the ABH 4000 (i.e., power the system on or off and select a source). The Harman Kardon AB 2 module is equipped with both an IR receiver and built-in capability to control the ABH 4000. The Harman Kardon AB 1 module has the necessary IR receiver. We recommend installing at least one AB 1 or AB 2 module in each zone.
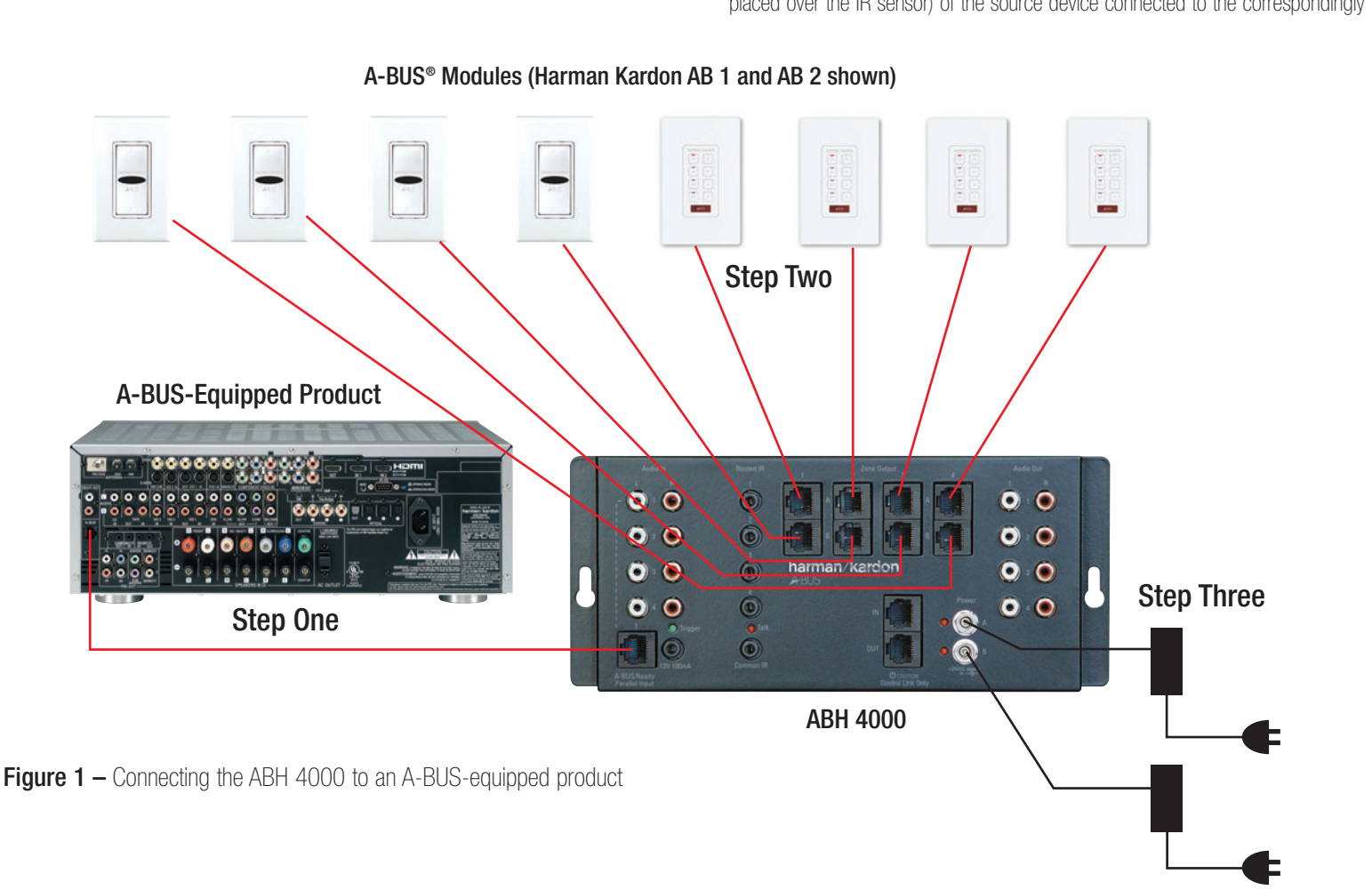
Step Three: Connect the AC Power Supply

Connect the AC Power Supply furnished with the ABH 4000 to **Power Input A**. If you have connected A-BUS modules to Bank B of the A-BUS Outputs, con-nect a second AC Power Supply (not included) to **Power Input B**. Plug each AC power cord into the socket on its Power Supply. Do not connect the power cords to an AC outlet at this time.

Optional Step Four: System Expansion

Up to three additional single-source or multisource hubs may be connected to the system. A single-source hub, such as the Harman Kardon ABH 4, is connected to only one source device, with the audio and control signals distrib-uted to the remote zones. A multisource hub, such as the ABH 4000, may be connected to up to four source devices, with the signals distributed to up to four independent zones.

Multisource Hubs

Up to four ABH 4000 hubs may be connected to create 16 independent zones with two room outputs per zone. To expand the audio signal, connect the Audio Outputs to the next hub's audio inputs. To expand the control data, connect an RJ-45 jumper cable from the Control Link Output to the Control Link Input on the next hub. Complete the system installation by following Steps Two and Three above.

Single-Source Hubs

In open-plan areas or adjoining rooms, single-source expansion may be required so that a common music source is heard in the area. Connect an RJ-45 jumper cable from one of the ABH 4000's A-BUS Outputs to the Expansion Input of an ABH 4 single-source hub. If connected to a Bank B Output, no power supply is required for Bank B. Complete the system installation by following Steps Two and Three.

NOTE: Do not connect an ABH 4 hub to the ABH 4000's Control Link Output, and do not connect an ABH 4000 hub to an ABH 4's Expansion Output.

Connections to a Non-A-BUS Product (see Figure 2)

The ABH 4000 may also be used to bring the benefits of A-BUS technology to virtually any audio system with a few additional steps to connect an audio feed and to install infrared emitters to control the source equipment. You may wish to have this installation completed by a trained installer who is familiar with A-BUS and audio/video systems integration.

Step One: Connect Audio Sources

Connect the audio outputs of up to four sources, using standard audio interconnect cables (not included) from the **Audio Inputs** on the ABH 4000 to the analog audio outputs of each source device, such as a preamplifier, receiver, surround processor, CD player, tuner or any other device equipped with line-level analog audio outputs. Although the Audio Inputs on the ABH 4000 are numbered 1 through 4, these numbers do not correspond to the output zones, and one may select any of the four sources for playback in any of the four A-BUS Output zones. The numbered Audio Outputs correspond to the Audio Inputs, not the zones.

Connect the source devices as follows, to allow for the simple source control available with the AB 2 (as described in the Operation section):

Source 1: Tuner or A/V receiver
Source 2: CD player or changer
Source 3: DVD player
Source 4: Any source device

NOTE: When using an A-BUS-equipped Harman Kardon A/V receiver, do not use the Source 1 Audio inputs. Source 1 is the AVR connected to the ABH 4000's A-BUS Input.

> Steps Two and Three are the same as in the Connections to an A-BUS-Equipped Product section.

Step Four: Connect the IR Outputs to the Source Devices

For non-A-BUS sources, infrared (IR) signals are used to control the sources remotely from each local A-BUS module. It is recommended that you install A-BUS modules with built-in IR receivers, such as the Harman Kardon AB 1 and AB 2, so that you may operate each of your sources.

When possible, connect the IR Outputs directly to compatible IR inputs on each source device.

Each Routed IR Output should be connected to the IR input (or an IR emitter placed over the IR sensor) of the source device connected to the correspondingly
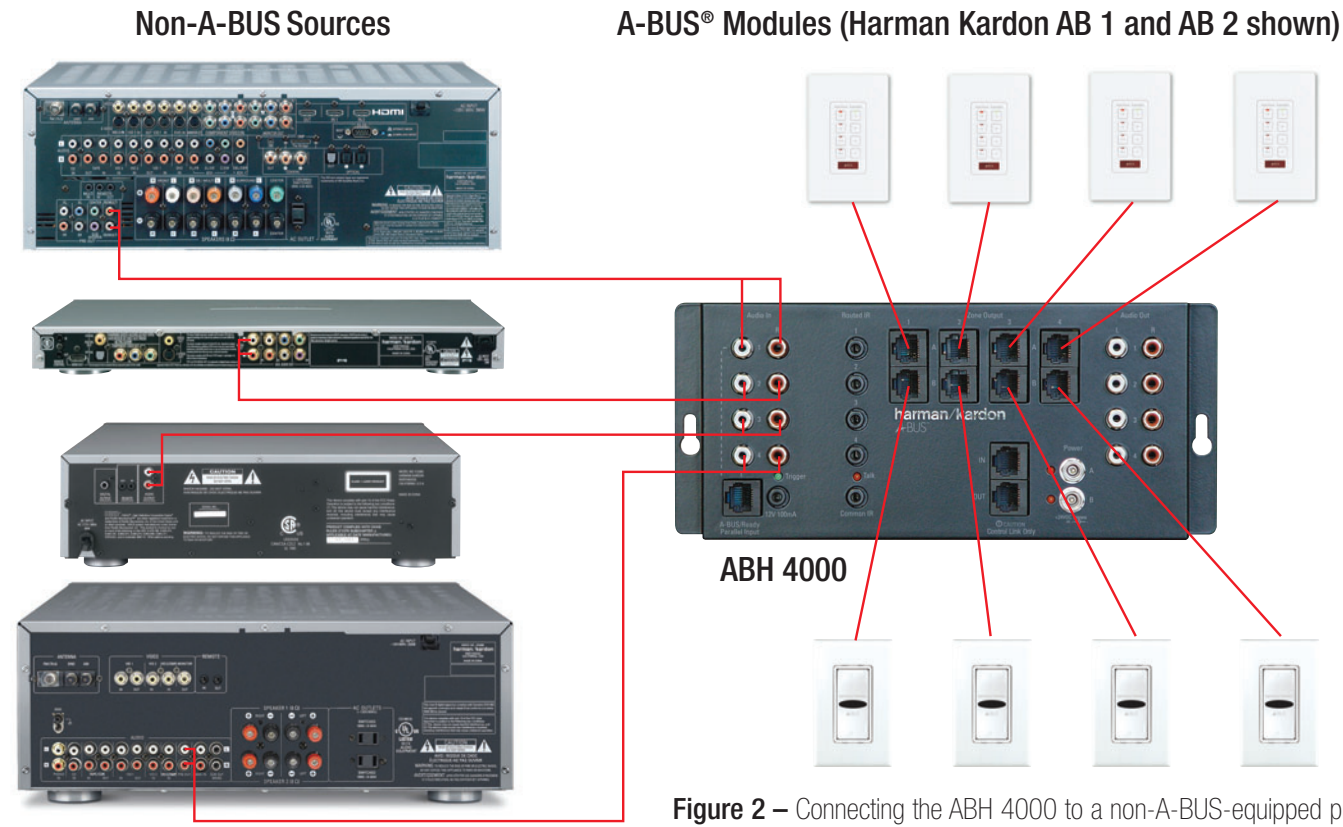
A-BUS® Modules (Harman Kardon AB 1 and AB 2 shown)

Step Two

A-BUS-Equipped Product

Step One

ABH 4000

Step Three

Figure 1 – Connecting the ABH 4000 to an A-BUS-equipped product

Non-A-BUS Sources

A-BUS® Modules (Harman Kardon AB 1 and AB 2 shown)

ABH 4000

Figure 2 – Connecting the ABH 4000 to a non-A-BUS-equipped product

numbered Audio Input. The ABH 4000 will route signals from any output zone that has selected that source device directly to that device. This allows you to use two sources with the same control code set, such as two CD players, with control commands affecting only the desired device.

Use the Common IR Output when all devices use independent code sets to simplify control through a receiver or other central component. All control commands received from all zones are output through the single Common IR Output. Connect it to a receiver's IR input, or connect an IR emitter that is placed over the receiver's IR sensor, as shown in Figure 3.

> **Optional Step Five: System Expansion**
> See Optional Step Four in the Connections to an A-BUS-Equipped Product section, to expand the system using additional hubs.

NOTE: The following steps provide additional options that extend the flexibility of your A-BUS system. If you are not familiar with audio/video systems installations, you may wish to have them completed by a properly trained installer.

Optional Step Six: Trigger Connection

Connect the Trigger Output to a component or power relay that turns on in response to a steady-state 12-volt trigger signal. When the ABH 4000 hub is turned on, the trigger signal will turn on any components connected to the Trigger Output, or components that are plugged into a power strip connected to the Trigger Output. When the ABH 4000 is turned off, the components will also turn off.

Optional Step Seven: Connect IR Emitters

If you are not using direct IR control connections to "IR In" jacks on non-A-BUS products and wish to control a source product, connect an optional IR emitter to the **Routed** or **Common IR Outputs** and place it over the IR sensor on the front panel of the unit to be controlled.
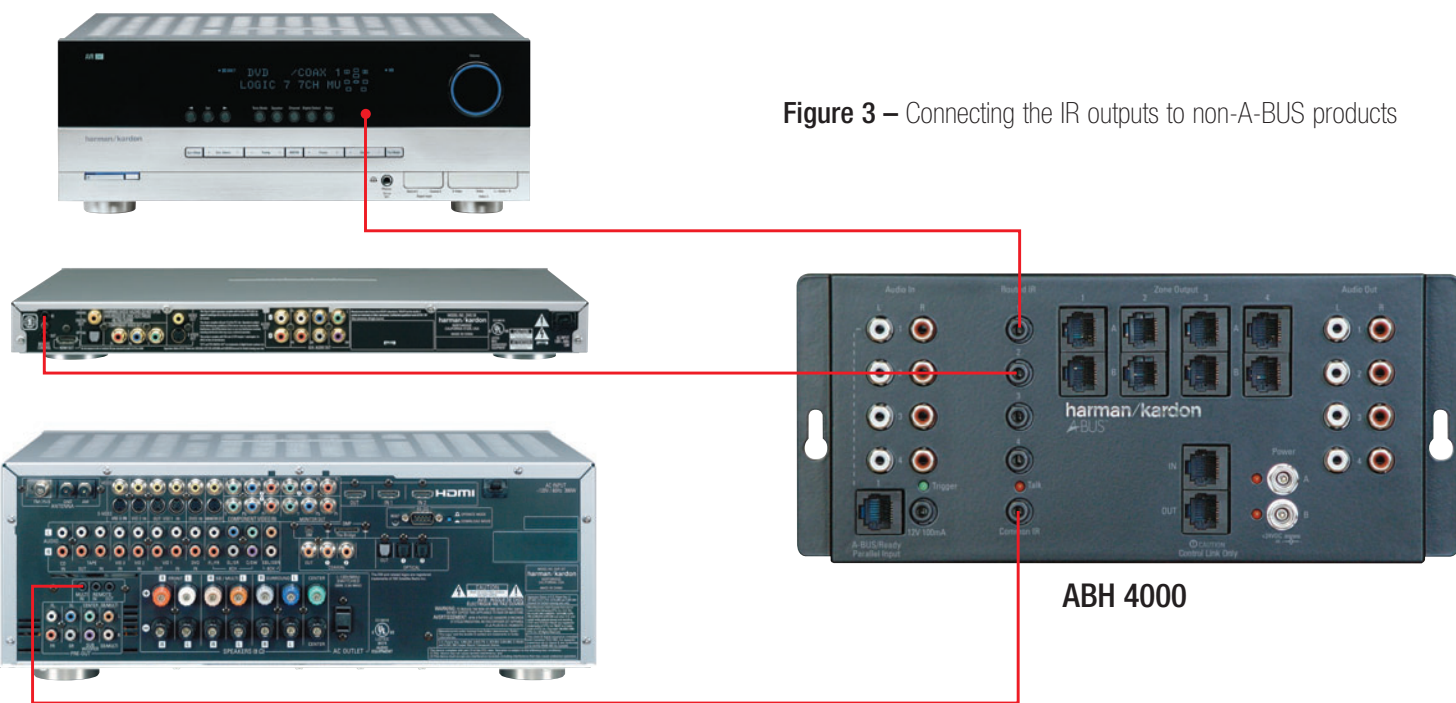

Figure 3 – Connecting the IR outputs to non-A-BUS products

ABH 4000

Operation

There are no user controls on the ABH 4000; it is controlled using an AB 2 keypad or the remote supplied with the AB 2.

After checking the connections, plug the AC power cord from the ABH 4000's Power Supply A into a non-switched AC outlet. If modules have been connected to Bank B for any zone, a second power supply (sold separately) is required and must be plugged into Power Supply B and a second non-switched AC outlet. The power supply is designed specifically for use with the ABH 4000. Do not substitute another power supply.

When the ABH 4000 is used with an A-BUS-equipped product, the A-BUS modules in the remote room operate as if they were connected directly to the host receiver. No further controls are needed. Follow the instructions included with the A-BUS modules for operation information.

When the multiroom system of a Harman Kardon A-BUS-equipped product is turned on or when a source is selected from one of the zones, the ABH 4000 will also be activated.

When a non-A-BUS source is used, the ABH 4000 turns on when a source is selected from one of the zones.

The Status Indicator will light, and the Trigger Output will activate, signaling any devices connected to it to turn on as well.

Use the second-zone remote included with an A-BUS-equipped product to operate the sources and the system, as described in the product's manual. For simple functions, when an AB 2 keypad is installed, it may be used to operate the sources and system as described below. The ABR remote included with the AB 2 may also be used, as described in the Function Table.

Figure 4 – AB 2 module

Figure 5 – ABR remote (included with AB 2)

The AB 2 keypad is operated using "long" and "short" button presses to activate different commands using the same button. A short press is released quickly. For a long press, continue to hold the button for about three seconds before releasing it.

Button Name	ABR Remote (Short Press on AB 2)	Long Press on AB 2
AVR	Turns on an A-BUS-equipped product and selects tuner as source. Subsequent presses toggle tuner band.	Turns on an A-BUS-equipped product, selects The Bridge as source and if an iPod is docked in The Bridge, begins play. If iPod was playing, it will pause. Press again if no audio is heard.
CD	Turns on CD player and issues Play/Pause command. If player is paused, it will begin playing. If player was playing, it will pause. Press again if no audio is heard.	If CD is already playing, issues Disc Skip command.
DVD	Turns on DVD player and begins play.	If DVD was turned on (LED on AUX button is lit), issues DVD Play command.
MP3	ABH 4000 selects Source 4.	ABH 4000 selects Source 4.
Power Off	Mutes or unmutes the AB 2; only that AB 2 is affected.	If Source 1 is playing, turns off an A-BUS-equipped product. If another source is playing, AVR remains on and ABH 4000 is turned off.
Skip (AB 2 only)	Depends on current source: Tuner – Preset Up CD – Track Skip Up DVD – Next Chapter Source 4 – no action	Depends on current source: Tuner – Preset Down CD – Track Skip Down DVD – Previous Chapter Source 4 – no action
Volume Up	Volume Up	Volume Up
Volume Down	Volume Down	Volume Down
System Off (ABR remote only)	If Source 1 is playing, turns off an A-BUS-equipped product. If another source is playing, AVR remains on and ABH 4000 is turned off.	Not applicable

Function Table

Source Selection

When an AB 2 is present or using the ABR remote, press any of its four source buttons to select that source. If the AB 2 and the ABH 4000 are turned off, they will turn on, and if the source is connected to the Trigger Output, it will be activated and play will begin. The AB 2's power indicator LED will light to indicate that the system is turned on, and the LED indicator for the selected source will light on the AB 2.

To select The Bridge as the source on an A-BUS-equipped Harman Kardon product when The Bridge is connected, press and hold the AVR Button on the AB 2, or press the appropriate source selector on the second-zone remote included with the AVR.

NOTES:

• The functions selecting The Bridge or a CD player as the source issue the Play/Pause command. However, the source's status is not communicated back to the AB 2, which always issues the same command when the button is pressed. If the source is selected and no audio is heard, press the button again.

• Some older CD players and other source devices require separate commands for the Play and Pause functions. These devices may not operate as described when connected to Source 2.

• It is preferable to connect all of the sources to an A-BUS-equipped Harman Kardon product, and select and operate them using the second-zone remote included with the product.

Source Control

If the source is an A-BUS-equipped product, or if it is connected to the Routed or Common IR Outputs using either a wired connection or an IR emitter, the AB 2 or its remote will provide simple control functions as described in the table above,

including Play, Pause, Preset Up/Down, Track Skip Up/Down, Chapter Next/Previous and Disc Skip.

For more sophisticated control, aim a properly programmed remote control, such as the second-zone remote included with an A-BUS-equipped Harman Kardon receiver, at the IR Receiver on the AB 1 or AB 2 (or other A-BUS module if so equipped), and control commands will be passed directly to the source device.

Volume Control

Volume is controlled locally for each room of each zone using its A-BUS module. On the AB 1, tap the Volume Down Button to temporarily mute the audio, and tap the Volume Up Button to restore audio. For the AB 2, each short press of the Power Off Button toggles between the muted and unmuted modes.

NOTE: When the system is turned off, all modules will reset to their minimum volume.

Powering the System Off

Press and hold the Power Button on an AB 2 to turn off the ABH 4000 and the entire system, if the Harman Kardon A-BUS-equipped receiver is in tuner mode. If another source is playing, the AVR will remain on – for example, if someone is watching a DVD in the main listening room. However, the ABH 4000 will turn off, which terminates the trigger signal and thus turns off any sources connected to the Trigger Output.

NOTES:

• If you wish to fully power down the system, select the tuner as the source just before pressing and holding the Off Button.

• If you only wish to power down the ABH 4000, make sure that any sources being used by others are not connected to the Trigger Output, or they will turn off.

LED Indicators

The three LED indicators on the ABH 4000 signify the following operational modes:

• The Status Indicator lights when the system is activated either by connection to an A-BUS-equipped product that is turned on, when a source is selected, or when the system is turned on from a remote zone. This light also indicates that the Trigger Output is active.

• The Power Indicators light when an AC Power Supply is connected to either power input on the ABH 4000 (for Bank A or B) and/or when a connection is made between the ABH 4000 and an A-BUS-equipped product. This light does not indicate that the system is powered on; that is indicated by the Status Indicator.

• The IR Talk Indicator flashes whenever an IR command is transmitted through the system.

Troubleshooting Guide

If the remote A-BUS modules do not operate at all:

• Verify all connections between the remote modules and the ABH 4000.

• Check the RJ-45 connection between the ABH 4000 and the host product.

• Check the AC power connection at both the ABH 4000's Power Jacks and on the Power Supplies.

If the remote module's status LED is lit but there is no sound:

• Make certain that an active source has been selected on the host receiver.

• Check the RJ-45 connection between the ABH 4000 and the A-BUS-equipped host product.

• Check the audio connections between the ABH 4000 and the non-A-BUS host product.

• When the ABH 4000 remote or the AB 2 keypad is in use and the CD player or The Bridge has been selected, repeat the command, as it issues Play and Pause and depends on the current status of the source.

For additional troubleshooting information and updated operational and installation hints, please visit the Product Support section of the Harman Kardon Web site at www.harmankardon.com.

Specifications

ABH 4000 Dimensions (D x W x H):
83mm x 184mm x 30mm (3-5/16" x 7-3/16" x 1-3/16")

Weight: 410g (0.9 lb)

Power Supply Dimensions (D x W x H):
70mm x 151mm x 36mm (2-13/16" x 5-15/16" x 1-7/16")

Weight: 450g (1 lb)

Power Supply Input: 108V – 264V AC, 115 watts

Power Supply Output: 24-volt, 4-amp supply included

Trigger Output: 12 volts, 100ma

Wiring protocol for A-BUS connections: TIA wiring specification for TIA 568A

ABH 4000

4-Zone/8-Room Expansion Hub
for A-BUS® Applications

harman/kardon®

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