Structured Wiring Hubs

ABX-84

Four-Source, Multi-Zone/Expansion Structured Wiring

Installation Guide / Warranty Information

forté A-BUS®

Welcome to Forté A-BUS

We hope you enjoy your Forté A-BUS system. Your Forté A-BUS component has been designed to give high quality sound and be simple and functional to operate. All Forté A-BUS products bearing the Forté A-BUS logo are made to the A-BUS Standard, so when you connect Forté A-BUS Multi-Source Hubs, Volume Control Modules or A-BUS/DIRECT Speakers they are compatible with each other. Some functions on some manufacturer's products may not work with other manufacturer's products; however, most features will be interoperable. All Forté A-BUS components are simple to service or upgrade, so upgrading your system with components that offer improved features should be easy.

The ABX-84 Hub is the core of your Forté A-BUS system. It will accept up to four ABX-75 Source Input Modules to connect the hub to a maximum of four source components. It also distributes power and sound to to up to eight room Volume Control Modules or A-BUS/DIRECT Speakers. It also repeats infrared (IR) commands to the source components. When used with up to three ABX-85 Expansion Hubs, the system may be expanded to up to 16 zones, each with the ability so select from any of the four sources. Single-Source Forté A-BUS hubs may also be used to expand each zone to additional rooms.

Features
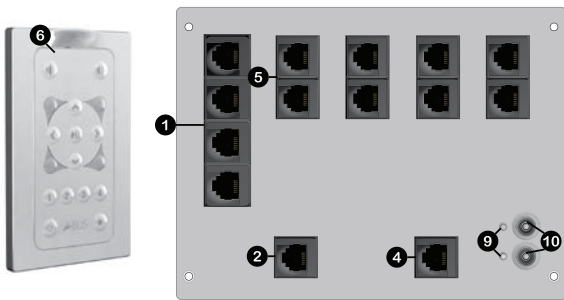
The ABX-84 requires 1-4 ABX-75 Source Input Modules (included)

Source Inputs [1] - A-BUS inputs from ABX-75 Source Input Modules (1-4)

ABX Control In/Out [2] - To expand the system to additional zones up to three ABX-85 Expansion Hubs may be connected to the ABX-84 Hub providing for a maximum of 16 zones
CAUTION: The ABX Control ports are used strictly to interconnect ABX-85 Hubs and may not be used for any other purposes.
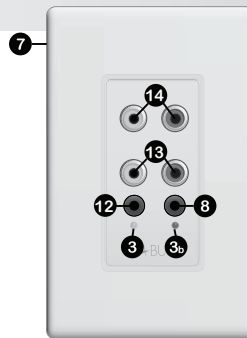
ABX Audio In/Out [4] - To expand the system to additional zones up to three ABX-85 Expansion Hubs may be connected to the ABX-84 Hub providing for a maximum of 16 zones. **CAUTION: The ABX Audio ports are used strictly to interconnect ABX-85 Hubs and may not be used for any other purposes.**

4 Zones   8 Zones
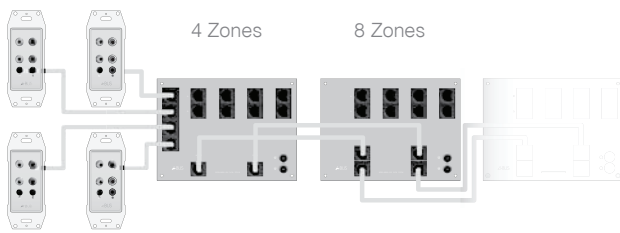
Expansion wiring example

A-BUS Outputs [5] A & B - Each of the A-BUS Outputs provides the power, audio and data signals to feed a Volume Control Module or A-BUS/DIRECT Speaker. There are four output zones; each zone may independently select from any of the four sources. Each zone has two outputs, Bank A and Bank B. When one APS-40 A-BUS Power Supply is used with the Hub, the rooms for Bank A may be powered. A second APS-40 Power Supply can be added to power the Bank B rooms or alternatively any of the Bank B output can used as an expansion port to feed one or more single source Hubs. **CAUTION: Only an approved A-BUS 4A Power Supply [11] should be used. Substitutes which may appear to be suitable are not recommended and will void the warranty.**

IR Remote Control [6] - At least one ABR-43 A-BUS Learning Remote Keypad with Cradle is needed with the ABX-84 Hub. This Remote Control includes a dedicated A-BUS bank and includes keys for most standard functions. Please see separate instructions.

Power Indicators [9] - The two red power lights indicate when the power supplies connected to bank A or bank B are active. These indicators do not indicate the system is active (see System Indicator [3]).

DC Power Input Sockets [10] - There are two power sockets one for each output bank 'A' and 'B'.

12v DC Trigger [12] - This is a 12v DC output that turns on when that source is selected. The output can be used to trigger a relay for power control of the source component.

ABX-85 Expansion Hub

The ABX-85 Expansion Hub is similar to the ABX-84 and connects directly to it. The ABX-84 Hub has two ABX Outputs for connection to the ABX-85 Expansion Hub; one for Audio [2] and one for Control [4]. The ABX-85 has corresponding ABX Inputs and Outputs for accepting inputs from an ABX-84 Multi-Source Hub and extending outputs to an adjacent ABX-85 Expansion Hub. Up to three ABX-85 Expansion Hubs can be daisy-chained to expand the system to a maximum of sixteen zones.
CAUTION: The ABX ports are used strictly to interconnect ABX-85 Hubs and may not be used for any other purpose. The jumper cables used to interconnect ABX ports between any two hubs must not exceed 1m in length or else system performance may be compromised.

Dining Room (Listening to CD)

Source Equipment (with loop-out)   ABX-85   APS-25   A-BUS/DIRECT   ABR-43   LOCAL INPUT MODULE   AB-45   AB-40RC   ABX-75   Source Equipment

ABX-75 Source Input Module

Installation – The ABX-75 Source Input Module installs wherever it is desired to locate an audio source component that will be used as an input to the ABX-84 Hub. Typically, Source Input Modules are located in the entertainment center, family room, kitchen, master bedroom, office or utility area or other areas where computers, cable boxes, satellite receivers, media bridges and/or televisions are located. It is best to locate the actual module in a single-gang box near, but not directly adjacent to, a power receptacle. The ABX-75 Source Input Module may be located up to 100ft (30m) away from the ABX-84 Hub. The Forté A-BUS System uses Cat 5/5e wiring following the TIA 568A color code (see A-BUS Wiring Color Code).

Input Level Adjustments – On the back of the ABX-75 [7] Source Input Module are Left and Right Input Level Adjustments. Normally these are set to the full clockwise position. Turn each control counterclockwise to reduce the input level to match the volume level of the lowest source in the system. Repeat this procedure for any other sources that are too loud, until all sources are balanced. Some audio sources such as computer sound cards may have very low output. In these cases it is recommended that the volume be turned up at the output of the source. Check for either a physical volume control or an IR remote volume control on such devices.

Status Indicator [3] - The green status light indicates when the system is turned on. The system is activated when the Hub receives a source-select command from any zone. Other zones may be activated at any time. Individual Volume Control Modules may have to be turned on separately before sound can be heard.

Infrared Talkback Indicator [3b] - The Red Talkback indicator flashes when an infrared data command is passing through the Hub.

Infrared (IR) Emitter Port [8] – This will accept a standard IR emitter with a 3.5mm 2-cond. mini plug. This jack is provided for infrared control of the source component. It is a routed output that will only emit commands from a Volume Control Module or A-BUS/*DIRECT* Speaker in a zone that has selected that source. Some components have a 2-cond. IR input jack on the bac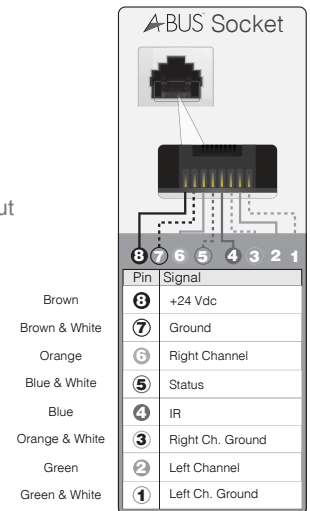k. It is recommended that this direct connection be used. **CAUTION: Do not confuse a serial data port connection with an infrared port.**

12v DC Trigger [12] - This is a 12v DC output that turns on when that source is selected. The output can be used to trigger a relay for power control of the source component. **CAUTION: Do not hook up devices to the Trigger that will exceed 100mA of current draw.**

Audio Input [13] - For connection to source component.

Loop Out [14] - To loop the same audio component source into a home theater receiver or an amplifier.

A-BUS Socket

Color	Pin	Signal
Brown	8	+24 Vdc
Brown & White	7	Ground
Orange	6	Right Channel
Blue & White	5	Status
Blue	4	IR
Orange & White	3	Right Ch. Ground
Green	2	Left Channel
Green & White	1	Left Ch. Ground

T568A

System Design

The ABX-84 is controllable with any Forté A-BUS IR Volume Control Module or A-BUS/*DIRECT* Speaker the ABX-84 by pointing a Forté A-BUS IR Remote at the Volume Control Module or A-BUS/*DIRECT* Speaker, which will repeat the IR commands to the ABX-85 Hub.

Forté A-BUS is a very flexible system; it allows for many variations not normally possible in traditional multi-room systems. For instance; it is possible to mix Multi-Source Hubs with Single-Source Hubs. There are many reasons why you may want to do this; the most common reason is because in an open plan house you may have interconnecting areas, which are acoustically the same (family rooms, dining rooms and kitchens). So if you change the source in one area the other rooms can track the same source. Another example is bedrooms with bathrooms. In the master bedroom, the full function Volume Control Module would normally be used; however, in the bathroom a less expensive Volume Control Module may be all that is needed. Each Multi-Source Hub has an A and B output (the second bank requires a separate power supply) for each zone in order to cater to this requirement. Any zone output can also be fed into the Expansion Input of a separate Forté A-BUS Distribution Hub such as the ABK-4RJ Four-Output Audio Hub to expand that zone.

Installation
It is recommended that the ABX-84 be installed by a qualified technician and in compliance with relevant low-voltage regulations. The ABX-84 , ABX-75 Source Input Module and AB-45 Multi-Source Volume Control Module should not be installed next to or in the same box as high-voltage devices. These devices all connect via a single Cat 5/5e cable using the TIA 568A wiring color code. It is recommended that no length of cabling should be run parallel or close to high-voltage cables or data cables. If the A-BUS cabling must cross other wires, it is best to cross at a perpendicular. It is recommended that the Cat 5/5e cable length be no longer than 100ft (30m); longer runs may cause induced noise and reduce sound quality.

Operation
The ABX-84 is controlled by A-BUS infrared (IR) commands. There are four inputs into which ABX-75 Source Input Modules may be connected. When the Hub receives a command for any one of the four inputs in any zone, the Hub will turn on. This will be indicated by the green Status Indicator [3]. The 12v DC Trigger [12] will also activate. If source components are activated by a power strip switched by the Trigger, they will also activate. Each zone

must have one Volume Control Module with a keypad that includes buttons with A-BUS functions (Inputs 1-4 or Input Up/Down, Room Mute and System Mute commands). Alternatively, any Volume Control Module containing an IR receiver may be used in conjunction with an A-BUS IR Remote that has these IR commands built-in. Volume Control Modules without Room On/Mute will activate when any Zone is turned on. Other modules with individual On/Mute capability require either an On command or a Volume Up command to activate the module. These units will reset to a low volume level the next time the system is turned on. The A-BUS MUTE command will mute the Volume Control Module only. To mute the whole system, the SYSTEM MUTE command must be used.

Infrared Repeater - Volume Control Modules and A-BUS/*DIRECT* Speakers that include infrared receivers will pass most infrared commands without difficulty. They will repeat standard 38 kHz commands and 56 kHz commands, which are often used in satellite receivers. Care should be taken to ensure the emitters are properly placed over the receiver on the front of the component.

Infrared Remote IR Range - The operating range of your Remote Control will vary according to the light conditions in the room, the quality of the IR remote (and battery condition) and the system design in the components. In ideal conditions in areas with low light the range should be up to 70ft (20m), however, in areas of high sunlight or lighting such as low-voltage lighting which can emit light in the infrared frequency range the operating range can be substantially less. In direct sunlight the range may be reduced to as little as 15ft (5m). Care should be taken when planning your Forté A-BUS system installation to locate the Volume Control Modules in a position away from direct light and in a position convenient to the users to point the IR Remote Control to the receiver in the module.

NOTE: IR Remote Controls operate using infrared (invisible) light. The Remote needs line-of-sight and will not send commands around corners or through furniture or heavy curtains.

ABR-43 IR Learning Remote Keypad - Please see instruction sheet for remote control.

AB-45 Volume Control Module - Please see instruction sheet for remote control.

Structured Wiring Specifications

Hub	**ABX-84**	**Hub**
Inputs	Audio	4 x Source (RJ-45) from ABX-75 modules
	Power	2 x 2.5 mm DC Sockets +V Center (Banks A and B)
Outputs	A-BUS	2 x 4 Zones (RJ-45) (Bank A and B)
	Expansion	1 x RJ-45 Control out, 1 x RJ-45 Audio out to ABX-85
Size (WHD)		4-3/4" (121 mm) x 3/4" (20 mm x 3-1/2" (88 mm)

Hub	**ABX-85**	**Structured Wiring Expansion Hub**
Inputs	ABX Input	1 x RJ-45 Control In, 1 x RJ-45 Audio In from ABX-84
	Power	2 x 2.5 mm DC Sockets +V Centre (Banks A and B)
Outputs	A-BUS	2 x 4 Zones (RJ-45) (Bank A and B)
	ABX Output	1 x RJ-45 Control out, 1 x RJ-45 Audio out to ABX-85
Size (WHD)		4-3/4" (121 mm) x 3/4" (20 mm) x 3-1/2" (88 mm)

Power Supply	**APS-25**	**Power Supply 2.5A**
Input	Power	100-240v 50/60 Hz
Output	Power	24VDC 2.5 Amp
Size (WHD)		123 x 47 x 30 mm

Remote Control	**ABR-43**	**ABR-43 Learning Remote Keypad with Cradle**
	Colour	White
	Battery	2 x 3v DL2032
Size (WHD)	Cradle	73.8 x 117.8 x 10mm
	Remote	49.8 x 99.9 x 7.8mm

Input Module	**ABX-75**	**Source Input Module**
Inputs	Audio	1 x Stereo RCA Pair
Outputs	Audio	1 x Stereo RCA Pair Loop Thru
	IR	1 x 3.5mm mini phono
	Trigger	1 x 3.5mm mini phono 12vdc +V Center 50mA
	A-BUS	1 x Cat5 RJ-45

Power Module	**AB-45**	**Multi-Source Volume Control Module**
Inputs	A-BUS	1 x Cat5 RJ-45
Outputs	IR	Front Panel Infrared Receiver; 38kHz, 56kHz
	Speaker	Screw Terminal, 14-18ga., 6-8 ohm, >88dB sensitivity

Warranty

Please contact your place of purchase for warranty information.