

Designing a Multi-Room or Whole House Audio System Using a BoseLinked Lifestyle System

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Bose Lifestyle Home Theater Systems are best known for having excellent sound quality while blending seamlessly into any home decor. Bose products are well known for being **extremely user friendly and simple to hook-up**. What most people don't know however, is how a Bose Lifestyle System can be used as the media hub for a multi-room or whole house audio system. Bose is constantly finding innovative ways to simplify installation and to create the most user friendly systems available. By using a patented technology called Bose Link, Bose has given customers great tools to create a professional looking home theater setup that can also control sound in other rooms of the home. There are several products that can be used to complete a whole house audio system. The best feature of the Bose Lifestyle whole house audio system is it's capability of controlling two different music streams from **up to 14 different rooms** of your house. This means that a person can be listening to one audio source in one room, and someone else can be listening to a second audio source from another room.

It Starts with the Lifestyle System

The Media Center of the Bose Lifestyle System has two specific functions. First and foremost it is the main controller for an exceptional home theater surround sound system. Controlling five speakers and a subwoofer to fill the theater room with exquisite sound from either the built in AM/FM Radio or any one of the other six audio sources including stored uMusic (not available on all systems). The Lifestyle Media Center can either incorporate an Upscaling DVD player with a DVD based Lifestyle system (the system is progressive scan without the [VS2](#)) or you can choose to add your own DVD player with a Lifestyle V-Class system. The Media Center also has an AdaptIQ feature that automatically tunes and adjusts the sound to the acoustics of the room, as well as a feature called Bose Link for incorporation of distributed audio throughout the home.

When the Bose Link feature of the Lifestyle System is used, the media center functions not only as a home theater controller but also as the main control unit of the whole house audio system. A Bose system has the ability to allow two different audio streams simultaneously in two different areas of the house. This is done with Bose Link technology using Bose SA-2 or SA-3 amplifiers or a self powered BoseLink system, and a Bose second zone remote compatible with each particular Lifestyle system.

Expanding Your Bose Lifestyle System

With the Bose Link Technology it makes it very easy to expand your system into other rooms of the house and even outside. Let's take a look at the specific products necessary to set up a Bose Link controlled theater and whole house audio system. BoseLink expansion is included in all Lifestyle Series II, III, IV and V-Class systems.

Main System Control

Lifestyle System



	48 IV	38 IV	35 IV	28 III	18 III	V30	V20	V10
Comparison features								
Music storage with uMusic intelligent playback system	Yes, up to 340 hours	Yes, up to 200 hours						
DVD/CD player	✓	✓	✓	✓	✓			
Speaker type	Premium Jewel Cube speakers	Direct Reflecting cube speakers	Premium Jewel Cube speakers	Direct Reflecting cube speakers	Virtually Invisible single cube speakers	Premium Jewel Cube speakers	Direct Reflecting cube speakers	Virtually Invisible single cube speakers
HDMI connectivity	✓	✓	✓	Yes, with optional VS-2 video enhancer	Yes, with optional VS-2 video enhancer	✓	✓	✓
Audio-in options	4 RCA 4 Digital Coax 1 Fiber Optic	4 RCA 4 Digital Coax 1 Fiber Optic	4 RCA 4 Digital Coax 1 Fiber Optic	4 RCA 4 Digital Coax 1 Fiber Optic	4 RCA 4 Digital Coax 1 Fiber Optic	5 RCA 2 Digital Coax 5 Fiber Optic 2 HDMI audio	5 RCA 2 Digital Coax 5 Fiber Optic 2 HDMI audio	5 RCA 2 Digital Coax 5 Fiber Optic 2 HDMI audio
ADAPTiQ audio calibration system	✓	✓	✓	✓	✓	✓	✓	✓
AM/FM tuner	✓	✓	✓	✓	✓	✓	✓	✓
Bose link whole-home audio distribution	✓	✓	✓	✓	✓	✓	✓	✓

Wireless Expansion Options



The example we use below uses a hard wired connection for each room, but for ease of installation, the [Bose AL8 Homewide Wireless Audio Link](#) can be used in conjunction to a wired solution to provide sound wirelessly in up to 8 rooms. The transmitter in the AL8 needs to be connected to the Bose Lifestyle system, then the amplifier for the room's speakers is plugged in to the receiver of the AL8. Up to 7 additional receivers ([Bose AR-1](#)) can be purchased for a total of 8 wireless rooms. Two 7' BoseLink B cables are included with the AL8, one 7' BoseLink B cable is included with the AR1.

All-in-One BoseLink Solution



[Homewide powered speaker system](#) – This speaker system is specifically designed as an aesthetic and acoustic match to the Lifestyle 48 system with Jewel Cube speakers and uMusic technology, but is compatible with all Lifestyle systems. The speakers can be mounted on the wall via an optional [wall bracket](#) or used with [table stands](#) or [floor stands](#). However, the speakers must be wired through the Acoustimass module to work properly. It has a built in amplifier, comes with the PMCII remote control, and a 50' BoseLink B cable is included.

[Bose Roommate](#) – This counter top speaker solution is the easiest Lifestyle Expansion option. It has a built in amplifier, comes with the PMCII remote control, and a 50' BoseLink B cable is included.

Second Zone Remote Control



[PMCII](#)

[RC-18S](#)

Each room, or zone, **listed below** will need its own specialized remote to control what happens in that particular room. The remotes function on a Radio Frequency signal so it is not necessary to point them in a specific direction. The second zone remotes options for the different systems are:

- **[Personal Music Center II \(PMCII\)](#)** – Recommended for Lifestyle owners with uMusic systems (Lifestyle 38 & 48) - Gives full access to the uMusic Library with on screen menus
- ~~**[RC-38S](#)** – Provides access and control of your Lifestyle 38 or 48 DVD home entertainment systems from many locations around your house, even outdoors.~~ (Replaced by the PMCII)
- **[RC-18S](#)** – Gives you access to and control of your non-uMusic system and most audio/video sources attached to it, such as TV, VCR and Satellite or Cable box.

Self Powered BoseLinked System Options

Secondary Home Theater Systems



- **[Bose 321 GSX](#)** – For those of you who love music and movies but would rather have the simplicity of less speakers and wires. The 3-2-1 GSX system is the Bose premium selection in the 3-2-1 system family offering the benefit of music storage. It delivers much of the performance of a five-speaker home theater solution, with an intelligent approach to music.
- **[Bose 321 GS](#)** – Just two visible Gemstone speaker arrays make up Bose's smallest, most powerful 2 speaker system available. An Acoustimass module is also included to deliver enhanced sound performance from

almost anything you watch. Setup is simple: No center or rear speakers means no wiring to the back of your room. An elegant media center features a progressive scan DVD/CD player with AM/FM tuner. And the series II and III systems have a BoseLink included to connect to a Lifestyle system.

Table Top Speakers



[Acoustic Wave music system II](#) – Bose's best all-in-one music system performs like a large component stereo costing much more with far less complication and clutter. Advanced Bose speaker system and audio technologies deliver sound with clarity and consistency, even at loud volume levels, in larger rooms and outdoor spaces.



[Wave music system](#) – The acclaimed Wave music system still sets the standard for quality audio and ease of use among one-piece, table top radios and bookshelf stereos. Its award-winning design adds a touch of distinction to almost any room. It's no surprise so many people use it as their main home entertainment system for music listening. An [under-cabinet/wall bracket](#) option is available.



[Wave Radio II](#) – This counter top speaker solution is the radio that changed people's idea of a time-honored medium. Digital electronics and updated speaker technology allow this innovative table top radio to deliver more accurate audio with deeper lows. And its uncluttered design makes it welcome in almost any room. An [under-cabinet/wall bracket](#) option is available.

Amplifier Powered Speaker Options

Bose Lifestyle Second Zone Amplifier



A Bose Link amplifier works in direct correlation with the Bose Lifestyle Media Center to bring great Bose sound anywhere in the home. The multiple amps are connected directly to the Media Center and are controlled by the second zone remote controls. The remotes control the audio source and the volume level in each room independently. An amplifier is needed for each additional room of the house that sound is wanted. (**Every BoseLinked**

system listed above has a built in amplifier and **does not need** an external amplifier) There are two different external amplifiers that are available:

- [Bose Lifestyle SA-3](#)
100 Watt Amplifier recommended for the 251, 301, FreeSpace 51, AM5 speakers, or any room with a local source. A local source would be a television or any other audio source that you would want to play through your integrated speakers in the additional room. One 20' BoseLink A cable is included.
- [Bose Lifestyle SA-2](#)
40 Watt Amplifier recommended for the 161, 201, 151, 191, AM3 speakers, and any room without a local source. One 20' BoseLink A cable is included.

In Wall / In Ceiling Speakers



[191](#) – The Bose 191 is a very versatile speaker that can be used as either an in-wall or an in-ceiling speaker. A rectangular speaker grill cover comes in the box for the in-wall application use as well as a round grill cover to use with in-ceiling placement. The speaker itself has its own back box that acts as an acoustic chamber to help deliver good crisp mid-range and low end frequencies. This is a great speaker that can be used in many different applications.

Environmental Speakers



FreeSpace 51 – Ground speakers that offer exceptionally broad, even coverage due to a radial design that enables 360-degree sound dispersion. The FreeSpace 51 has a weather-resistant casing that can withstand even extreme weather conditions. They deliver uncompromising sound that can be completely hidden in the landscaping.



251 – The Bose 251 Environmental Speaker is the largest of the outdoor speaker family. These speakers have a unique design that allows the speaker to reproduce extreme lows and good clean highs. It is designed with its own mounting bracket that gives the speaker the capabilities of tilting up and down once mounted.



151 – These entry level outdoor speakers from Bose give good overall sound from a small, wall mounted speaker. This speaker would be recommended for smaller coverage areas. Brackets included.



131 – Designed to flush mount in the pre-cut speaker openings provided by many boat manufacturers, each Bose 131 marine audio speaker features a Bose full-range driver for high-fidelity sound, and a proprietary ported enclosure for smooth, consistent low-frequency response. A great solution for the bathroom or other locations where moisture may be an issue. These speakers are **80w speakers and can only be used with the SA2 amplifier.**

Bookshelf Speakers



161 – These are great for background music playing at low to moderate levels. These speakers are sold with a wall bracket so the speaker can be mounted or just set on a shelf.



201 – These speakers offer a 6-1/2 inch driver with a 1 inch tweeter to deliver full range of music. Designed as a traditional bookshelf speaker the 201's incorporate a moderately small cabinet but deliver a great sound. [Floor stands](#) and [wall brackets](#) options are available.



301 – The Bose 301 offers an 8 inch driver with two 1 inch tweeters - one firing to the front of the speaker and the other firing out of the side rear to use Bose's patented Direct Reflecting technology. These speakers like to get loud and deliver at any volume level. [Floor stands](#) and [wall brackets](#) options are available.

On Wall Speakers










Bose Acoustimass 5 – Also know as the AM5, these speakers take from the same design as the Lifestyle 38, 28 and V20 speakers incorporating an Acoustimass bass module with a cross-over point specified for the cube speakers. The speakers can be mounted on the wall via an optional [wall bracket](#) or used with [table stands](#) or [floor stands](#). However, the speakers must be wired through the Acoustimass module to work properly.



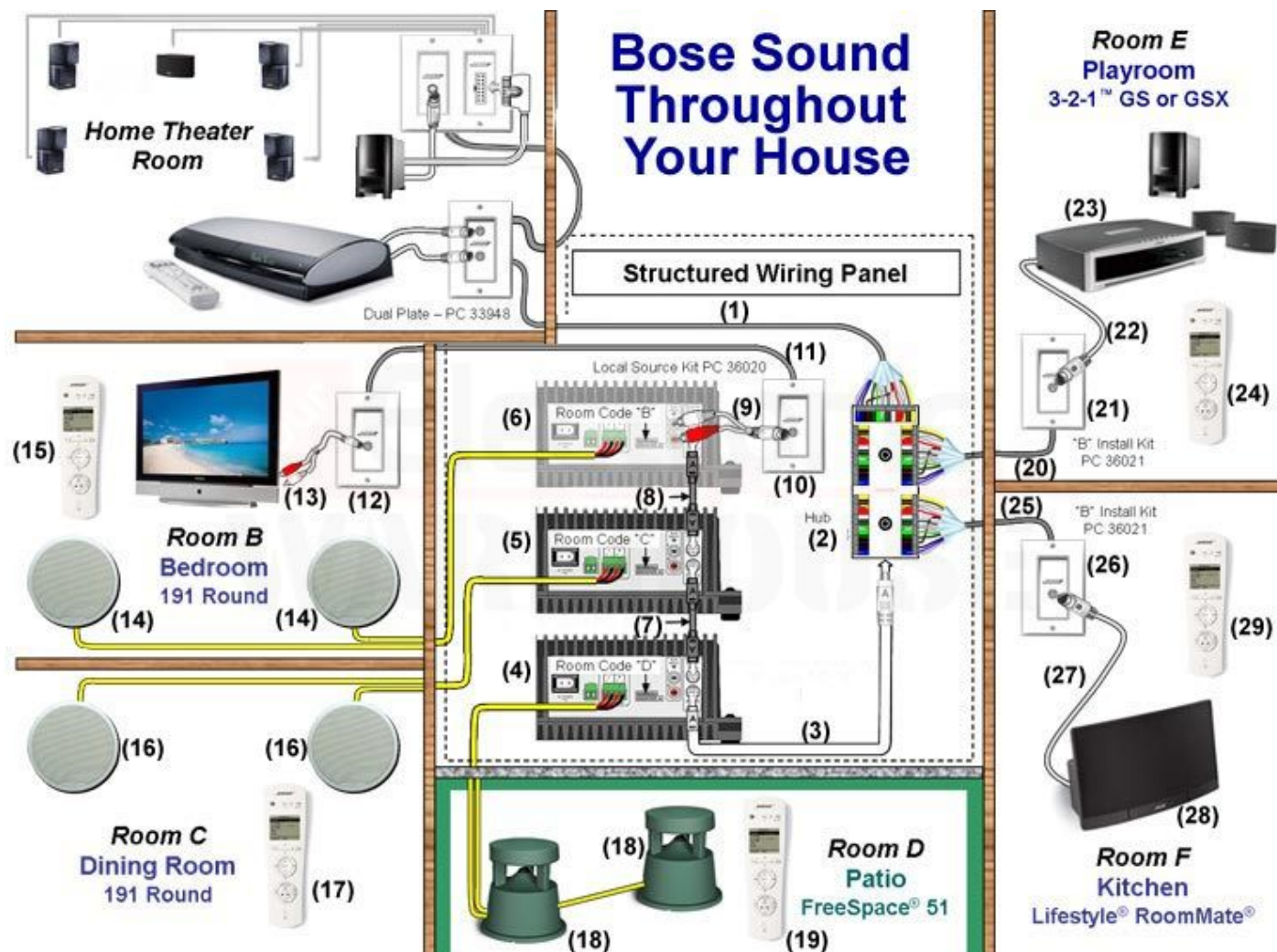
Bose Acoustimass 3 – Also know as the AM3, these speakers take from the same design as the Lifestyle 18 and V10 speakers incorporating an Acoustimass bass module with a cross-over point specified for the cube speakers. Like the AM5's there are mounting options (listed above) and the wiring must go through the Acoustimass module to work properly.

Bose Link Accessories

	<p><u>Bose Link A Source Cable</u> – Used to connect multiple SA-2 or SA-3 amplifiers to each other, Media Centers to local source plates, or a Media center directly to a SA2 or SA3 amp.</p>
	<p><u>Bose Link B Source Connection Cable</u> – Required cable for connecting an All-in-One (i.e. a Roommate) or a Self Powered BoseLinked system (i.e. a Bose Wave music system) to a Lifestyle system media center.</p>
	<p><u>Bose Link Extension/Expansion Cable</u> – 50' cable which extends the distance between a Lifestyle system media center and can connect up to 4 other BoseLinked systems.</p>
	<p><u>Bose Local Source Input/Output Cable</u> – The Local Source cable is used to take the standard stereo RCA outputs from most A/V devices and convert this connection into something that conforms to the BPIS II wiring standards. A second Local Source cable is required at the SA-3 amplifier to re-convert this signal back into standard RCA connections again.</p>
	<p><u>Bose Single Source/Destination Plate</u> –The Single Source/Destination plate is exactly the same as the <u>Dual Source/Destination plate</u>, but it only has one mini-DIN connection. This makes it ideally suited for Destination applications where a single product needs to be connected to a Bose link system cable. For termination of in-wall Bose link System Cable near destination systems (i.e. Lifestyle home theater Acoustimass module, Lifestyle SA-2/3 amplifiers, or a Bose link enabled systems). Also used as a <u>Local Source</u> plate when used with a SA-3 amplifier.</p>
	<p><u>Bose System Cable II Expansion Hub</u> – The Bose link Hub will allow an installer to divide the output of one Bose link System Cable into up to 10 additional Bose link solutions. The most common application for this part would be when more than one Bose link enabled system (e.g. Wave Music System or Roommate) is wired into the Bose link network. This solution would allow the installer to connect all Bose link System Cables from each location into this terminal block then connect the incoming Bose link System Cable coming from the Media Center using either the terminal strips or a Bose link A cable.</p>
	<p><u>Bose System Cable II</u> – Specially designed communications cable used to interconnect two Source/Destination plates. While there are “equivalent” wires available from different suppliers they do not necessarily offer the exact wire color scheme. Some alternate wire schemes use a solid black wire for each wire pair rather than a colored stripe. The Bose system cable makes it easy to identify which wire pair these wires are from because they have a matching stripe. (e.g. The black wire from a White pair will display a white stripe along the insulation.)</p>

Bose Whole House Wiring Example

Here is a diagram of how a Bose Link whole house solution would work. This is an example of a house completely wired with Bose sound.



The Pre-Wire

When building a new home, it is essential to have all of the wiring down before the dry-wall is hung. As shown above, there are a number of cables needed to properly wire for a Bose whole house audio system. The first step is to decide where the amplifiers are going to be housed for the different rooms of audio. The most common place in a new construction home would be the control room, or an unfinished part of a basement. Once the location is determined Bose System Cable II must be ran to that location from the room that will house the Bose Lifestyle Media Center, this will typically be the theater room. This cable is how the Media Center will communicate with the amplifiers. Once this cable is in place it is now time to figure out where the speakers are going to be placed in the specific rooms. Speaker wire must be pulled to these locations from the control room. If there are to be Roommates or additional 321 systems used in some rooms, those particular rooms will require system cable to be pulled instead of speaker wire, as shown in the diagram for rooms E and F. Don't forget about the theater room. Speaker wire must be pulled to each of the five speaker locations within that room from the location of the Lifestyle Bass Module. If you're not using the included system wire, pre-wire using the [Lifestyle Professional Install Kit](#) and if the system has Jewel Cubes use [AC-2's](#).

Now that we have all of our wires in place, let's take a look at the equipment and hook-up in every room. The main system is assumed to be a uMusic Lifestyle system.

Structured Wiring Panel

Parts Used: [Bose System Cable II](#) (1), [Bose System Cable II Expansion Hub](#) (2), [Bose Link A-Source Cable](#) (3), 3 Bose SA-3 Amplifiers (4,5,6), 2 [Bose Link Extension/Expansion Cables](#) (7,8), [Bose Local Source Input/Output Cable](#) (9), [Bose Single Source/Destination Plate](#) (10), Bose System Cable II (11)

In our example we are running two of the rooms with non-traditional speaker applications. Therefore we ran system cable from the control room to each of those rooms. Because of that we will have to wire in a System Cable Expansion Hub to distribute that signal. The System Cable that is coming from the theater room is wired directly into the input on the hub. The two runs of system cable that are going to room E and room F are then wired into two of the outputs on the hub. A Bose Link A-Source cable is then connected from the output on the hub to the input on the first SA-3 amplifier. The other two SA-3 amplifiers are then connected to one another via the Bose Link Expansion Cables. Lastly, the speaker wires are connected to the amplifiers for the remaining rooms.

The equipment installed in the structured wiring panel will be the foundation to your whole house audio solution. Next we will walk through each room on our diagram to explain what equipment is being used and how it is connected to the system. Refer to the diagram with each step to give yourself a visual aid of the connections.

Room B - Bedroom

Parts Used: TV, Speaker Wire, Bose Single Source/Destination Plate (12), Bose Local Source Input/Output Cable (13) Bose 191 Speakers (14), PMC II Remote (15)

The setup in Room B allows you to either listen to music from the Lifestyle System in your home theater room or get audio from the TV in Room B. For this setup to work, both the speakers and the TV have to be connected to the Room B SA-3 amplifier. The TV audio is connected to the SA-3 amplifier (6) by running the Bose Local Source Input/Output cable (13) from the TV's audio output to the Single Source Destination Plate (12). This connects the TV audio to the Room B amplifier (6) using the Bose System Cable II (11).

Next the speaker wire is run from the 191 speakers (14) to the SA-3 amplifier. Now that Room B is connected to the home theater room, the PMC II remote is used to let the user either listen to the TV's audio or listen to the radio, auxiliary input, CD/DVD or uMusic from the Lifestyle System in the Home Theater Room.

Room C - Dining Room

Parts Used: Speaker Wire, Bose 191 Speakers (16), Bose PMC II Remote (17)

Room C is a pretty straight forward setup; the 191 speakers are connected by speaker wire to the Room C SA-3 amplifier in the structured wiring panel. This allows the user to listen to audio from the Lifestyle System in the home theater room by utilizing the PMC-II remote.

*Even though the diagram shows the speakers connected to an SA-3 amp, we suggest an SA-2 amp. The difference between the SA-2 and SA-3 is the SA-3 has an auxiliary input and 100 watts of power while the SA-2 has no auxiliary input and has 40 watts of power. For a room inside the house that is just using speakers the SA-2 will be the more practical option and will also cost less.

Room D - Patio

Parts Used: Speaker Wire, Bose Freespace 51 speakers (18), Bose PMC-II Remote (19)

Room D (Patio) has practically the same setup as Room C; the tricky part is getting your speaker wire from the inside of your house to the outside and burying it underneath the ground to attach to the speakers. Other than the basic installation of the speaker wire, the only thing you have to do is connect the Freespace 51 speakers to the SA-3 amp with speaker wire. Even though this is the same type of setup as Room C, a SA-3 Amp is used to give extra power to the speakers that will be located furthest away from the Lifestyle. The PMC-II remote will allow you to control the music coming from the Lifestyle System.

*Although the diagram uses Freespace 51 speakers which rest on or partially in the ground, Bose also has the 151 and 251 outdoor speaker models which can mount to the side of the house.

Room E - Playroom

Parts Used: Bose System Cable II (20), Bose Single Source/Destination Plate (21), [7ft Bose Link B Source Connection Cable](#) (22), Bose Lifestyle [321 GS](#) or [321 GSX](#) (23), Bose PMC II Remote (24) [321 Pro Installation Kit](#) (not shown)

Since Room E has a Bose 321 System in it, the main functionality of Bose Link in this room will be to use the uMusic from the Lifestyle System in the other room. The installation in this room is very simple; attach a Bose System Cable II from the expansion hub (2) to the Single Source/Destination Plate (21). From there a Bose Link B Source Connection Cable is needed to connect the 321 System to the wall plate. Although the Bose 321 GS and 321 GSX both come with a remote for local source use, you will need a PMC II in order to use the uMusic and listen to any source connected to the Lifestyle System in the Home Theater Room.

Room F - Kitchen

Parts Used: Bose System Cable II (25), Bose Single Source/Destination Plate (26), [Bose Roommate](#) Speaker (28), Bose Link B Source Connection Cable** (27), Bose PMC-II Remote** (29) (**included with the roommate)

Room F has identical connections to Room E, the only thing different is that Room F uses a Bose Roommate Speaker to play audio from the Lifestyle System in the Home Theater Room. The Bose System Cable II (25) wires into the expansion hub (2) which connects it to the Single Source/Destination plate (26), a Bose Link B Source Connection Cable (27) connects the Roommate Speaker (28) to the rest of the Bose Link System. Once again you can control which audio source you want to use by selecting it on the Bose PMC-II remote.

Note: Each Bose Remote in the house can (and should) be set to control its respective zone so it doesn't interfere with others in the house.

Summary

This diagram is an example of an entire house filled with Bose sound. Understand that as long as you have a Lifestyle System you can choose one, or all of these options for Bose Link Expansion. Although this seems like a very complex installation project, it is much easier than mixing and matching parts to form a similar system. Bose Link is both the easiest and cleanest way to achieve whole house audio solutions.

Questions - Free Design Service

If you still have questions, or would like free design assistance from one of our custom installation specialists, give Electronic Warehouse a call at 1-866-224-6171.