

HOME THEATER BASICS

By Darryl Glover (15-Apr-2004)

Regardless of what you've read or heard to date, you can apply the following basics to setting up your home theater and achieve a sensational experience especially when viewing action DVD's. The system we describe is moderately priced (under \$5,000) yet will offer an experience unmatched by systems costing two or three times as much. Please remember to also budget an adequate amount of money for cabinets/furniture.

With current technology, you will need the following:

Device(s)	Recommended Mfr. & Model Number	Expected Retail Cost
TELEVISION		
(1) Large Screen TV or Monitor	Toshiba Model #36A43	\$800.00
AMPS		
(1) Digital (Dolby) Receiver	Yamaha Model #HTR-5660	\$500.00
(1) Sub-channel Stereo Amplifier	Samson Model #Servo 170	\$200.00
SPEAKERS		
(1) Center Channel Speaker	Monitor Audio Model Silver Center S-LCR	\$500.00
(2) Main Speakers	Klipsch Model #SF-3	\$400.00 Per Each
(2) Dipole Surround (Effects) Speakers	Monitor Audio Model Sfx or FXi Surrounds	\$800.00 Per Pair
(1) Subwoofer	JBL Model #E250P	\$500.00
A Sonic Transducer for every seat in the room (You'll probably need 4 - 1 for the sofa, 1 for the loveseat and 1 for each of 2 chairs or recliners)	Aura Sound Bass Shakers	\$50.00 Per Each
MISCELLANEOUS		
(1) DVD Player	Panasonic Model #S-47S	\$100.00
(1) Power/Surge Protection	Various	\$100.00
(1) Lot Speaker & Interconnect Cabling	Various	\$200.00
TOTAL		\$4,700.00

TELEVISION

- LARGE TV OR MONITOR

Depending on your budget (and room size), you can spend a lot of money on this item. Anything from a conventional 32" TV (about \$500), to a 42" Plasma Monitor (around \$2,500), to a front or rear projection system (how big is your budget?) will fill your needs. For most people a conventional (CRT) 36" TV like the Toshiba model listed above will be sufficient. When viewing movies, it is recommended you dim or turn off your lighting for maximum effect and because the TV will then be the strongest light source in the room, you will naturally focus your attention to the screen and enjoy your experience.

If the majority of your viewing on your home theater system will be DVD movies, you may consider a Plasma TV or monitor as they generally come in the wide-screen viewing format (16:9) as do most of the DVD movies. Conventional TV sets generally are in the 4:3 viewing format.

Some time in the future, be ready to upgrade to a progressive scan digital set. Currently they are not for the faint of heart (or should I say light of pocket).

AMPS

- DIGITAL (DOLBY, DTS) RECEIVER

The Receiver is the brain of the entertainment system. The receiver will process sound from the various audio sources (DVD player, TV, VCR, Cable, Satellite, Internal Tuner, etc...) and send the sound to speakers you connect to the receiver. You can use the receiver to switch video sources (i.e. select the desired connected video input from the receiver to display on your TV) but the receiver does not alter the video signal in any way.

For larger installations, often a separate pre-amplifier and amplifier(s) may be used, in lieu of a receiver, to allow for bi-amping or even tri-amping your speakers. Instead of defining all you need to know about this topic, we would prefer you contact us to aid you in designing a Unique Engineered Solution.

With any luck, you will get a receiver that comes with a remote control that is capable of operating the rest of your devices. Some remotes have programmable macros that can start everything with the pressing of one button.

- SUB-CHANNEL AMPLIFIER

This is your power source for your sonic transducers as well as your subwoofer, if it is not the active type. Be sure to get a large enough (watts) amplifier to handle twice the connected RMS of the connected speakers. This should equal the peak of the connected speakers. When doing your calculations remember that most professional subwoofers are rated at 4-ohms

instead of 8. You will also need to get a unit that has user volume adjustment capabilities.

Depending on the type of subwoofer (if yours is non-active) and the number of sonic transducers you have in your system, you may need more than one of these. Some models offer a signal pass-thru to accommodate wiring multiple amps if needed. If your sub-channel amp does not have this feature and you need more than one, you may additionally need to incorporate a signal distribution amplifier to your system.

SPEAKERS

- CENTER CHANNEL SPEAKER

In viewing digitally formatted movies, this is the most important speaker in the group as the center channel is where all the dialogue is sent. You want to be sure and get a good shielded and somewhat large speaker for your center channel. Placement, as in all the speakers in a multi-channel system, is crucial. It needs to be placed as near as possible to your TV - Ideally directly above or directly below. Package deals from most retailers usually offer a sub-par center channel speaker.

- MAIN SPEAKERS

The main or front left and right speakers are primarily your music speakers in a home theater system. When selecting what to purchase, it's a good idea to listen to these speakers as you would any normal 2-channel stereo speakers. When you're not viewing a movie in one of the sophisticated formats like 5.1, these are the only speakers you will hear. So be sure and take your favorite CD with you and don't be afraid to test the limits (lower as well as upper) of these speakers before your purchase. As a final thought on mains, your existing speakers if you have a nice sounding pair, may be more than adequate. If you use your existing speakers, be sure they have adequate capacity as your new receiver may pack a lot more punch than your old one.

- DIPOLE SURROUND (Effects) SPEAKERS

Unfortunately, not a lot of manufacturers make these little jewels. But they truly make a big difference. Some effects speakers now have the users choice to wired in a dipole or bi-pole configuration. Be sure to use the dipole option. Depending on your source material, you can get away with using ordinary monopole speakers for your effect speakers but in my opinion, this is a concession. A dipole speaker is where sound comes out of two sides of the speaker, and NO sound comes out of the "front" of the cabinet. The speakers are wired out of phase with each other (actually out of polarity) and this gives the sound a diffused splay, which makes it appear the sound is coming from a larger area. Dipole speakers are best when mounted on the ceiling even with your main seating area. For more about Dipole Speakers, read this from the Home Theater Forum. If at all possible, be sure to get your center channel and

effects speakers of the same series and by the same manufacturer. Package deals from most retailers usually offer sub-par surround channel speakers.

- SUBWOOFER

Most of the subwoofers available today from local retail stores are the active type (built-in amplifier). I prefer the front firing type over the down blast units.

- SONIC TRANSDUCERS

No package deal from retailers offer sonic transducers. This is the "creme de la creme" for your Home Theater system and will have all your friends envious of your system. The sonic transducers add a level of sensation that is amazing. The sonic transducers are attached to your seats (bottom). They vibrate the seat during explosive low frequency viewing moments to add an incredible sense of realism. This effect is achieved without an excessively high bass volume. Works well with heavy bass music and video games. They can produce several times the sensory bass effect of a subwoofer at a reasonable cost. Installs easily with 4 screws to the bottom of your seats.

MISCELLANEOUS

- DVD PLAYER

Of course you will need a DVD player. The one listed above is a good starter unit and will probably suit you for its lifetime. Regardless of the cost of a DVD player, there are basically only a couple manufacturers that make the drive unit and only a small difference in quality. Most newer unit are available with progressive scan technology but unless you have a digital TV or monitor, this feature can not be fully appreciated.

- SURGE PROTECTOR

As fate would have it, I live in the lighting capital of the United States and am a firm believer in protecting your electronic equipment with a good surge protection unit. The technology for these units is currently in somewhat of a dynamic state and I am therefore not prepared to recommend any particular make or model. I've noticed some of the units offer connected equipment warranties. I would hate to try collect on such a warranty but this seems like they are pretty sure of their unit's abilities.

- SPEAKER & INTERCONNECT CABLING

It's difficult to brief on this subject matter but let me try. Not to make light of this matter but make sure you get good stuff. Be sure and use stranded 12-gauge speaker wire. It is a good start and for a home system should be more

than adequate. An inexpensive option for this is 12-gauge stranded copper lamp cord from your local hardware or home center. You can even buy a 100-foot or 500-foot roll.

ADD-ONS

You can most likely add on your existing VCR, cable or satellite receiver and any other items you may be using with your current system.

IN CONCLUSION

This should satisfy most homes using a room up to 400 or 500 square feet for their home theater viewing and listening experience. Should you have a larger space or want professional aid in setting up your Home Theater, let us provide you with a Unique Engineered Solution so you can get a whole lot more than an off the shelf experience.