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# BUILD YOUR OWN HOME THEATER

***"No matter how much you think you know about home theaters, that information will be outdated tomorrow. You need to constantly keep on top of "the latest and greatest", and it isn't difficult to do: read a home theater blog daily and you can spend a few minutes a day catching up on the latest techno news with little effort."***

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# INTRODUCTION

## (THE CHAPTER NOBODY READS)

Congratulations… by downloading this ebook, you have decided to empower yourself with information that you will one day use to build and properly set up your very own home theater.

Blah, blah, blah…

Okay, let's cut to the chase because I'm starting to bore myself already, and I'm only on page 4.

Ever since word "got out" that I built an actual 11 person theater in my basement, I've been swamped with questions from family and co-workers about how they can do the same thing.

Since I was tired of repeating myself every time someone asked me for my opinion/information, I decided to put my 10 years of home theater research and experience on the Internet for others to access. This is were you can download all of my ebooks.

So I'm making this ebook available to anyone who wants to know THE BASICS of home theaters but doesn't want to spend a ton of time wandering around on the Internet reading garbage.

This is an ebook that outlines the basics, so don't send me emails complaining that you know all this stuff already… there are a ton of you out there that don't, and I'm worried about them right now… I'm writing more advanced ebooks… check my website.

So if you want more complicated tips and tricks, keep checking my site:

http://www.myhometheatersecrets.com/

Eventually, Volume 1 and Volume 2 of my Home Theater Handbooks will be available there.

**Let's get started before the readers with a short attention span get bored and move on to something else.**

# THE BASICS

Okay… the question I get asked most is: "What digital camera do I buy?" Of course that has nothing to do with this ebook, so we'll just skip that one… continuing along…

The second most asked question I get is: "What is HDTV and which one of these TVs should I buy." Followed closely by, "what is Dolby Digital 5.1, 6.1, 7.1?"

Welcome to the ebook that will answer those questions (not the digital camera one, the HDTV ones) and give you a few building blocks in your quest for building a home theater. Let's start with the 3 things that make up a home theater.

There are 3 important parts to a home theater… the first is the **video**, the second is the **audio**, and the third is **the room**.

In this ebook, we're going to be concerned with understanding the video and audio… if you want to know how the third part (the room) plays a part in a home theater, check out the detailed instructions on my website.

You will find them here: http://www.myhometheatersecrets.com

# VIDEO, VIDEO, VIDEO!

Okay, let's look at the video portion…

There is a movement in the television industry that has caused the major networks to re-think how they broadcast their signals. The old TV signals are being replaced by newer digital signals. These are called HDTV (High Definition TV) signals.

Of course this means that we all have to upgrade our old TVs to get these new digital signals. The old signals will stick around until Feb 2009, but after that, they're going to be shut off. It's gonna suck if you choose not to upgrade your current TV.

I figure the best way to explain this to you is to describe the current STANDARD television signal and then describe the HDTV signal, so you can compare.

## *The STANDARD Television*

Gosh… I cringe every time I type that word "standard". If you haven't bought a new TV in the last few years, "standard" is what you're currently watching. Anyways, I'm going to use point form, because frankly I can't stand reading long sentences. So, without further adieu, here is the breakdown of the "Standard" TV:

- TV signal is transmitted just like radio
- TV Signal is referred to as NTSC, PAL
- video is transmitted in AM
- audio is transmitted in FM
- TV signal interference causes ghosting and snow
- TV signal gets weaker as you move further away from transmitter
- color TV was not part of design until later

This system was developed after World War II, so you can see that it needs to be replaced with something more up to date.

### *The High Definition Television (HDTV)*

Unlike "Standard" TV, HDTV was designed from the ground up to take in all the factors of the TV signal such as B/W, color and audio. Here's the breakdown:

- TV signal transmitted as bits of info, like a computer writes to a CD
- TV signal is referred to as HDTV
- video and audio are transmitted as 1s and 0s
- since the signal is digital, there isn't ghosting or snow
- as you get further away from the transmitter, you don't see a degradation in picture, you just lose the entire picture
- Color and "wide screen" picture was included in the initial design

At the time of writing, there were 3 major HDTV technologies you could choose from when buying an HDTV… Plasma, LCD and DLP… they all have they're strength and weaknesses. The funny part is… ready for this? The funny part is… each time a new model of HDTV (usually every year) comes out, their weaknesses are fixed! Can you imagine?

That's right… the first generation of plasma had a huge problem with burn in (an image that "burns in" the glass of the TV, and can be seen after the TV has been turned of)… but guess what… it's not a problem anymore!

This is why you need to keep on top of the changes for each of these technologies… If you go into an electronics store under the impression that plasma still has a burn in problem, you may be limiting your options by excluding it from your choice.

So now you're scratching your head, right? Too many choices… too little time. What the heck are you going to do now? Which technology is best for you? It's like trying to hit a moving target!

If you haven't ventured out to buy your very own HDTV yet, I'll spend the next few pages to get you up to speed with the technologies, and the ins and outs with purchasing one.

### *Plasma vs LCD vs DLP*

Until now, your television viewing has probably been on a picture tube, which consists of a glass front, or a rear projector (older TVs over 40 inches). If you want to incorporate a new TV into a family room, there are a number of different HD technologies you should be aware of, and their names are “Plasma”, “LCD” and “DLP”.

Plasma television screens are made up of thousands of gas filled glass bubbles that have an electric current passed through them. The color of a particular bubble is directly related to the amount of voltage that is passed through it. They are thin and can be hung on a wall.

LCD (Liquid Crystal Display) television screens are made by “sandwiching” thousands of tiny crystals between two large pieces of glass. Voltage is passed through the crystals (and the corresponding color filters) to produce the picture. They are also thin and can be hung on a wall.

DLP (Digital Light Processing) television screens are made up of thousands of tiny mirrors that are on their own tiny hinges. As a light in the television shines on them, the angle of each tiny mirror in conjunction with a color “fly wheel” will produce the picture. These are rather thick… you can’t hang them on a wall.

### *So What TV Technology Should I buy?*

So now you're probably sitting there wondering "Which technology would look the best in my living room". Well, again… there isn't a right answer for that, and I've been asked that question many, many times… Here's my response when I get asked that question:

- Talk to people who own each particular technology to see what they like/dislike about their TV.

- You should decide whether you want a flat screen or a floor model (flat screens dictate LCD or plasma).

- You should decide on a budget… at the time of writing this book, DLPs were the cheapest out of the three technologies.

- You should see each of the three technologies in "action" at your favourite TV/Audio store. It's always a good idea to actually see these technologies side by side.

- Remember that the 70 inch television is going to look tiny in the warehouse store compared to your family room. Make your decision regarding size BEFORE you get to the store.

- You should ask what source (DVD, VCR, antenna, satellite) is being piped into the TVs that you are comparing at the local TV store. You

want to compare apples to apples, so make sure all the TVs you are comparing are using the same source.

- Get yourself access to Consumer Reports. This is a great source of information that is unbiased, and details the repair records of major manufacturers. You can subscribe online for a couple bucks a month. I keep subscribed online just incase I have to buy something and want to see what Consumer Reports says first.

- Research, research, research… If you're going to spend $4,000 on a new television, doesn't it make sense to go out on the Internet and see what type of information you can find about that specific model? Use the major search engines out there.

- When choosing between Plasma and LCD, it should be noted that at the time of writing, LCDs have a lower refresh rate than plasmas. This means that if a race car streaks across the screen, the plasma has an easier time showing it than the LCD does… you may see small streaks as an image crosses the screen.

- A rule of thumb that I sometimes use when choosing between a plasma and an LCD is "If you want greater than 50 inches, get a plasma, if you want smaller than 50 inches, get an LCD."

- At the time of writing, the DLP had the best picture quality.

## ALL ABOUT AUDIO…

You do have a choice when it comes to audio for your setup… you can buy an HDTV and just use the speakers that are integrated in it, or you can purchase extra audio components (receiver, multiple separate speakers, subwoofer) and create "movie" sound. The speakers in the newer HDTVs are quite good, so if you're not a movie buff, don't feel you need to go out and buy extra audio stuff right now.

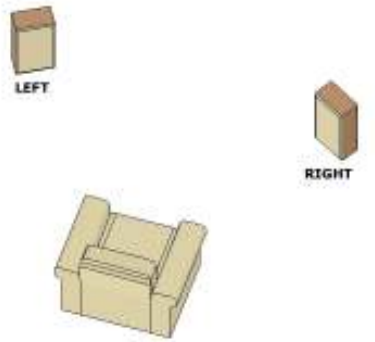
It should be noted that there are HDTVs out there available to the consumer that do not come with speakers integrated in the frame. I would love to see your face after buying one of those and bringing it home. After spending an afternoon setting it up and moving around furniture, you turn it on to finally experience that new HD technology that you kept hearing about. Oh, you get the full experience of HD alright, but can't hear a thing… ouch.

If you ask me, it seems that most people are only concerned with buying the TV and they don't really give a darn about the audio portion of their setup… They bought the HDTV with the integrated speakers, right? What could they possibly be missing?

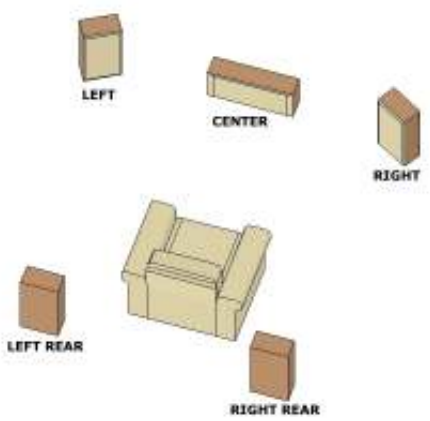
What if I told you that you could unleash a wealth of sound from your favorite movie, show or sporting event. Just as HD brings you crystal clear video, you can use the **Dolby** audio format to bring unbelievable sound to your ears.

I'm not going to get into the gory details about setup, that's not the purpose of this ebook. What I want to do is to expose you to diagrams I created (using some fancy shmancy architect software) showing the different setups.

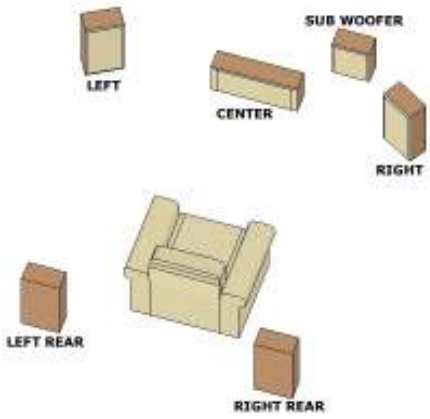
***Different Types of Dolby Audio Formats***



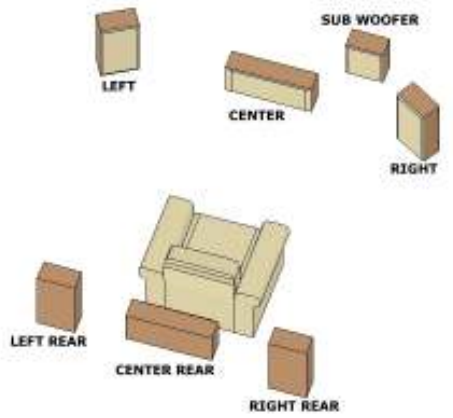

Dolby Stereo uses 2 separate channels for audio… left and right.



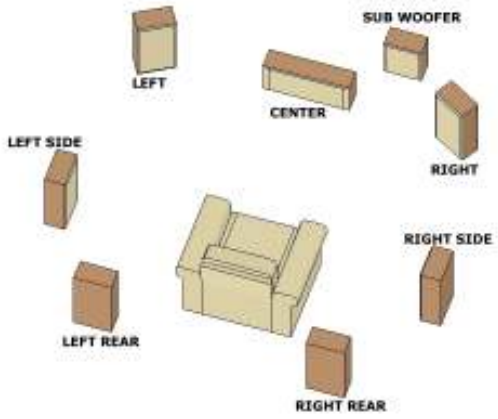

Dolby Pro Logic uses 4 separate channels for audio… left, center, right, and one channel for rear surround.



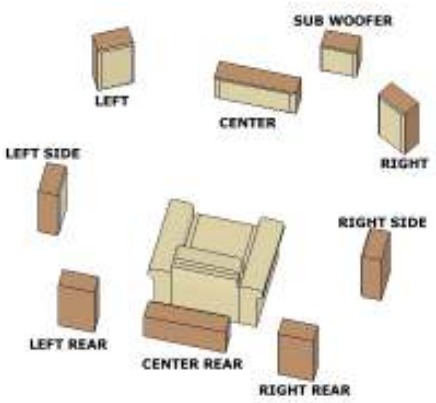

Dolby Digital uses 5.1 separate channels for audio… left, center, right, left rear, right rear, and an LFE (low frequency effect or Subwoofer).




Dolby Digital EX 6.1 uses 6.1 separate channels for audio… left, center, right, left rear, right rear, center rear, and an LFE (low frequency effect or Subwoofer).




Dolby Digital EX 7.1 uses 7.1 separate channels for audio… left, center, right, left side, right side, left rear, right rear, and an LFE (low frequency effect or Subwoofer).




Dolby TrueHD can use up to 8 channels of audio and was developed for high-definition disc-based media.