# Untold Secrets You Need To Know Before Purchasing Your HDTV

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# Introduction

It was very easy to buy a new television a decade ago, since we had limited options. You could have easily bought a new television for your family with a quick trip to your local consumer electronics store. However, things have changed now. In the last few decades, television has undergone some astounding transformations. Today, you have an extensive range of televisions with better picture quality, sound, and sizes. When it comes to the latest innovations in television technology, nothing can beat the High Definition television (HDTV).

HDTV became available in the market in late 90's. Since then, it has been becoming popular increasingly. It offers an unmatched experience of watching television, and is available in multiple sizes, styles and colors. However, what makes a HDTV unreachable to common people is its heavy price tag. Therefore, if you are planning to buy a HDTV, be prepared to spend a lot of money. Even if money is not an issue for you, do not rush out to the stores in a hurry. Before you buy a new HDTV, you have to make out a vast array of decisions.

Buying a HDTV can seem an intimidating task. There are so many types on the market with different type of features and specifications, which make your decision-making process an uphill task. Nevertheless, you need not get into panic mode. This e-book will help you all through the way by providing you reliable and useful information. It will help you Identify the entire essential details to consider, and will make your search quick and painless. It will not only make buying your HDTV easy for you but also

pleasurable, until you do not receive your credit card bills, of course. The manual contains some untold secrets related to HDTV you should consider before buying one.

# Basics Of HDTV

The first step in knowing the essentials you need to consider before buying the HDTV is to become familiar with its basics. The following passages will let you understand what is HDTV, how does it work, and what is the future of HDTV.

## What is HDTV?

HD stands for high definition, and it is the new standard of television viewing. HDTV is actually part of the Digital Television (DTV) specifications brought by the Advanced Television Systems Committee (ATSC). ATSC has defined eighteen different transmission formats, out of which six are considered 'High Definition,' because they constitute an incredible improvement over the resolution quality of a normal television.

HDTV has 1125 lines of resolution in comparison to 525 lines in the Regular NTSC analog signals. Thus, HDTV carries over five times the video information, as compared to your conventional NTSC analog TV set. In one way, it is the biggest advantage, and the other way it creates a hurdle because HDTV transmission requires an extraordinary bandwidth, five times the capacity of a conventional TV signal. True, they are five times better than your conventional TV, but then, they are 50% more expensive also.

## A Brief History of HDTV

Although HDTV has a very short history, in it has been playing a major role in the transformation of digital home entertainment space. The credit goes to the satellite TV service providers, who have made HDTV such a hot cake today.

It all started almost 15 years ago in 1987, when FCC (The Federal Communications Commission) issued a rule stating that that HDTV standard must be compatible with existing NTSC service. However, later in 1990, General Instrument Corporation proposed for an all-digital HDTV system. By the end of 1990, four serious contenders in the United States, ATRC, Zenith HDTV, AT&T, and MIT, announced their digital entry in HDTV system. Then 1993 was a remarkable year in the history of HDTV in the US, when a grand Alliance was formed. The alliance included major players such as, AT&T, GI, MIT, Phillips, Sarnoff, Thomson, and Zenith. Their task was to take the best features from the four HDTV systems and develop a standard HDTV system. They successfully tested it in 1995 and the FCC set it as the HDTV standard.

How Does HDTV work?

You can receive HDTV signals in your home through any of the three broadcast systems, over the air through antenna, cable, and satellite. Although some hurdles regarding digital broadcasting remain unaddressed, they would be addressed soon. For digital broadcasting, a show is first recorded in HD format using HD cameras and equipments. Then, it is distributed digitally over the air, cable or satellite. Now, you just need an HDTV-compatible TV with a HDTV tuner or receiver to decode the digital signal. That is it. Your HDTV is ready. Sit back and enjoy.

Antenna, Digital Cable or Satellite?

Antenna is free of monthly charges, but you will be able to watch the broadcast channels only. You will have to perform certain antenna gymnastics to watch other channels. However, if you can

afford a HDTV, you can use cable or satellite as well. If you choose to go with satellite option, you must see if you would get line of sight to the satellite. Sometimes, the beam from the satellite is blocked, for example due to a gigantic tree in your neighborhood. You need to place the satellite dish with a clear view of the northern sky. Therefore, it is highly advisable to visit your neighbors and see how their HDTVs are functioning.

Analog, Digital and HDTV- A Comparison

Analog: For years, watching TV has involved analog signals. The signal is made of continuing varying radio waves that the TV translates into pictures and sounds. These signals reach your TV over the air, through a cable, or via satellite. Obviously, it can show only standard-definition program such as those found on regular TV, direct TV, Dish TV, cable or satellite.

Digital: Digital television is better known as DTV. A digital signal transmits the information for video and sound as ones and zeroes instead of a wave in a digital format. Digital television has certain advantages over analog. For example picture quality of digital TV is always better irrespective of the size of the screen. It allows multi-casting, and TV stations can broadcast several signals using the same bandwidth. It can also display progressive-scan DVD and can support HDTV broadcast as well.

HDTV: HDTV is by far the most common and advanced form of digital television. It can display almost everything including standard TV, progressive-scan DVD, and HDTV signals.

Issues with HDTV

## Distribution

There are two kinds of advocates for HDTV systems. One who feel that HDTV will ultimately be successful outside the conventional channels. Others who feel HDTV is capable and it must use the existing conventional channels. However, there are two options available to cable TV companies. Either they can continue to broadcast conventional NTSC by installing 20 MHz MUSE-type HDTV systems, or they can go with the digital grand aliens systems. This leads to two interesting possibilities of two different HDTV standards – one for terrestrial broadcast and other for cable broadcast.

## Bandwidth Limitations

HDTV means a bandwidth of 18 MHz. Therefore, if you decide to move on to HDTV there is a problem, since the current terrestrial channel allocations are limited to 6 MHz only. This way there are three options available to terrestrial broadcast. First, to change the channel allocation system from 6 MHz to 20 Mhz; second, to compress the HDTV signal to fit inside the 6 MHz; and third, to allocate multiple channels for the HDTV signal. Out of the three options, only the third one allows compatibility.

## HDTV: Myths and Realities

There are so many things to consider before buying a HDTV, given the significant amount of confusions it has created. Most of them are simply myths. We have tried to cover some common concerns regarding HDTV.

Myth: DTV is the same as HDTV
Reality: No. DTV is just another term for Digital TV. DTV is a technology, in which signal is broadcast or received digitally. HDTV is one type of DTV transmission. Where DTV improves picture and sound over analog signals, HDTV offers the highest resolution picture and sound, all digitally.

Myth: Digital cable is the same as HDTV
Reality: No. Digital cable is just an improvement of picture and sound quality over regular analog cable, but in no way it is of high definition.

Myth: Non-HDTV programs cannot be viewed in HDTV
Reality: It is not completely true. You can watch non-HDTV programs on HDTV, but picture quality will suffer a little. Black and gray bars may appear on the left and right side of the screen to set the image in 4:3 aspect ratio.

Myth: We need to fiddle with a switch or wire when changing from satellite to antenna signal.
Reality: The HDTV automatically detects a HDTV station, whether it is being received via antenna or satellite. You just have to use the remote control to change channels.

Myth: All Digital TVs are HDTV compatible
Reality: No, this is not true. Not all Digital TVs are HDTV compatible.

Myth: The quality of HDTV varies with satellite, cable, and antenna

Reality: Quality of picture remains the same irrespective of whether you are receiving signals through antenna, cable or satellite.

# Types Of HDTV Sets

The types of HDTV are categorized on the basis of technology, the screen width, and the requirement of either a HDTV tuner or an independent unit. While buying a HDTV, you have to consider these aspects carefully. Let us have a look at each of them separately.

## Types of HDTVs Based On Technology

The most popular type is direct view HDTV that uses standard Cathode Ray Tube (CRT) and rear projection technology, similar to the standard TVs. However, this technology is going to get obsolete sooner or later. New advanced technologies are going to take over in the near future. These technologies are cost-saving and loaded with extra features, such as, transmitting clearer and brighter images. The standard TVs stand no chance in competing with this new version, as they are burdened with the production costs and size restrictions. The biggest direct view HDTV comes with a screen width of 36 inches. Besides this, the rear projection technology is shadowed with problems of screen burn in, convergence, and obscurity of image during brightness or at an angle.

The entertainment world has received a breakthrough with the introduction of amazing TV technologies like Plasma TVs, LCoS (Liquid Crystal on Silicon), LCD (liquid crystal displays), and DLP (Digital Light Processor) rear-projection units. Before a decade, one could have never imagined a television that could be hung on the wall! But Plasma TV has made this possible too. Although each of these technologies displays their own advantages and disadvantages, they come with the promise of a better picture

quality. The HDTV's installed with the advanced technologies are, in no case, inferior to the older versions of HDTV.

## Plasma TV and LCD Technology

As far as LCD TVs and Plasma TVs are concerned, the technologies provide the benefit of a compact structure. Many new versions of TVs are only a few inches thick and weigh just a fraction of the older versions. The flat LCD TVs with a screen size less than 37 inches are a favorite among the buyers. They are classy and can be placed anywhere. They prove to be a worthwhile substitute for a standard medium-sized television set.

Buyers who wish to stick to the old-fashioned rear projection technology also have an array of options to choose from. However, it is good to skip the tube based rear projection technology now, as micro-display technology is in vogue. Once the angle is adjusted, it provides a sharp picture. CRT based rear projection technology is soon going to become a thing of the past.

While buying a Plasma TV, one should be fully aware of the rewards as well as the shortcomings of the technology, compared to other types of HDTV. One of the things to be careful about Plasma TV is the risk of burn-in. However, this problem has been overstated by some people. In fact, many users of Plasma TV, who watch television for about 7-8 hours daily, have not found anything serious about this burn-in problem. The probability of burn-in is the highest in the initial 100 hours of use. To avoid burn-in, one should keep the TV at low contrast, not more than 50%, and refrain from

displaying still images or letterbox bars on the TV screen for several hours continuously.

Once 100 hours of usage is over, Plasma TV becomes long lasting, just like any other standard television. A number of plasma TVs come with burn-in-reduction features, such as pixel orbiting and screensavers. Some of them are programmed with defense mechanisms. For example, if burn-in takes place, the screen goes all white.

## DLP Technology

DLP technology is also winning the hearts of many buyers. A wide range of HDTV sets with DLP technology are available in the market. Their picture quality differs with the price and the company that manufactures it. However, DLP technology comes with one minor hitch. A few buyers have reported to come across short stripes of color on their TV screens, especially while viewing bright pictures or images of black fields. However, the manufacturers are in the process of upgrading this technology in order to overcome such minor pitfalls. One should be able to have access to the advanced versions by 2007.

## HDTVs based On Screen Width

Before shopping for HDTV, one has to decide between a wide screen TV and a normal size TV. HDTVs with a wide screen have a display ratio of 16:9, while the normal ones have a ratio of 4:3. The image seen in a normal sized TV is mainly square shaped. But the image appearing in wide screen TV appears to be in rectangular form. Wide screen HDTV is akin to the screens used in movie halls and

DVDs. It is also the customary configuration for HDTV signals. Wide screen TVs are gaining popularity rapidly. The production of 4:3 format screens is about to be scrapped. TV manufacturers are all set to concentrate on wide screen TVs now. You have to note that Plasma TVs and LCDs are available only in wide screen formats.

## Lifespan of Plasma TV

Most of the Plasma TV manufacturers claim their product lifespan to be around 50,000-60,000 hours. This comes to around 20 years. However, even if we consider 30,000 hours, then considering the average TV viewing hours in an American household, which amounts to about 8-9 hours daily, a Plasma TV can work without any flaws for at least 10 years. And after that, the TV loses 50% of its brightness, similar to any standard TV.

HDTVs are manufactured in many sizes, ranging from 13 inches to 85 inches. There are many leading TV companies that manufacture HDTVs. Samsung, Sony, Panasonic, Toshiba, RCA, Sharp, JVC, Pioneer, Mitsubishi, and Magnavox are some of the big names that boast of producing at least one type of HDTV sets.

## HDTVs with In-Built Tuner and Those without It

One more feature that distinguishes the HDTVs is the incorporation of a HDTV tuner. It is also called a receiver. There are some HDTVs that come without a receiver and one has to install a separate unit for the functioning of the TV.

Most of the HDTV sets available in the market do not contain an incorporated tuner. This is not a disadvantage. On the contrary, the manufacturers find it be quite beneficial, as it cuts down their costs

of assembling the parts of an HDTV tuner. Moreover, it also enables them to provide a compact structure to their HDTV sets.

For the buyers too, a HDTV without a tuner is preferable. This is because technologies are never constant. They keep on changing over the years. Tomorrow, one may find a new digital technology coming up in the market. Hence, to ensure a good investment in an HDTV set, it is better to go for a separate tuner, which can be upgraded to keep in pace with the new technology.

Besides this, the cable and satellite operators that are into HDTV programming normally provide a separate tuner. Most of the times, this is included in the subscription package. Thus, one can save the cost of buying a tuner.

Which Type of HDTV to Choose

With a wide variety of HDTVs available in the market, you may get perplexed while choosing the right one. However, there are ways to assist the buyers in deciding which type of HDTV set to buy. There are reviews of customers available in TV shops. These reviews are reliable, as no customer would appreciate a product, if he or she is not satisfied with it. HDTV sets come with varied types, looks, configurations, and prices. One would never be short of choices. Choose the one that suits your budget and lifestyle. HDTV is the perfect choice for anyone who wishes to spruce up their way of living.

# HDTV - Key Features And Connectivity Options

## HDTV-Capable and HDTV-Ready

One of the commendable features of a digital TV is that it can receive and display both ATSC (Advanced Television Systems Committee) Digital TV signals and NTSC (National Television Systems Committee) Analog TV signals. While shopping for HDTV, one might come across terms like HDTV-Capable and HDTV-Ready. Speaking in layman's terms, a digital TV that is capable of displaying an HDTV quality image is a HDTV-Capable. However, it is not incorporated with HDTV receiver or tuner, hence, cannot catch a HDTV signal. Such a digital TV requires a separate HDTV receiver to be connected to the set. Do not be baffled, if the shopkeeper uses terms like Set-Top-Box (STB) or Decoder. They are the names given to HDTV receiver or tuner.

HDTV-Ready is generally used as a substitute of HDTV-Capable. However, one should be clear that HDTV-Ready does not always mean HDTV-Capable. Before installing an independent HDTV tuner, one should always check whether it is attuned to the HDTV set and to the cable or satellite system being used. Also, the independent HDTV tuner should be proficient in receiving Over-The-Air (OTA) television broadcasts.

Remember, "Digital ready" and "HDTV-ready" do not essentially mean that your TV will receive and exhibit digital HDTV programs. Before making the final purchase, always confirm that the HDTV set you have chosen shows real HDTV resolutions. There are some HDTV-Ready sets designed in such a way that they can receive HDTV signals, but cannot display pictures in HDTV Resolutions.

## Audio and Video Connectivity

One should purchase a HDTV set that has the highest number of ports, rendering several connectivity options. We have different types of connectors and cables. Their mode of function is different and the type of parts used also varies in each of them. A HDTV set needs appropriate HDTV Cables and connectors.

The following are few examples:

- ✓ HDTV Video: It has HDMI (High Definition Media Interface), HDTV-Component (Y/Pb/Pr), and DVI (Digital Video Interface)
- ✓ SDTV Video: It is similar to HDTV or S-Video Connectors. One can use a standard 3-wire RCA. However, it is not advisable.
- ✓ Standard Stereo: RCA – 2 or 3 wire
- ✓ Dolby Digital Audio: Digital Coax; Fiber Optic
- ✓ Analog Video: Use a standard 3-wire RCA

In some sets, one may find some extra ports in the front or in the sides. It becomes handier to add connections with such ports.

One cannot have each and every connection available in the world in the HDTV set. One has to decide what connections one wishes to have, for example, Video Game, VCR, DVD, PVR/DVR/HD-DVR, PC, A/V Receiver, Set-Top-Box, and so on. The number of ports and their types are based on the decision regarding the connections. Also, the types of connections reflect how soon the HDTV set will get outdated. Hence, one should not decide in haste, but look out for all possibilities and then make the final nod.

Remember, one cannot have innumerable ports in a HDTV set.

## HDTV Tuner or Receiver

It is also called Set-Top-Box or Decoder. This is a necessity for the functioning of a HDTV set. Without its installation, HDTV cannot receive the signals, which include satellite, cable, high definition digital-VHS recording, Over-The-Air broadcasts, and HD-DVD. The Set-Top-Box also displays DVD with progressive scan and HDTV-capable video games.

As mentioned earlier, one should always confirm whether the Set-Top-Box or HDTV receiver is compatible with the HDTV set.

Some set-top-boxes are meant exclusively for using with a particular cable or satellite service. One can also get a separate HDTV tuner for accepting OTA Broadcasts. One needs to contact the cable operator for transforming the cable Set-Top-Box to an HDTV Set-Top-Box.

## Extra Features

There are other added features to look into before installing the HDTV set in the house. These features depend on a series of conditions, such as the mode of receiving the HDTV signals, the kind of display one wants, the type of components already installed, and others.

There are added components available with HDTV dealers. Sometimes they are a necessity, while at other times they may be an individual choice. For instance, a digital HDTV-Capable set needs a separate HDTV tuner; a few of the Plasma TVs do not have any

audio components incorporated in them; a Front Projection TV set may not boast of an in-built decoder; and so on.

You need to do a little pondering over the connectivity options before leaving the shop with the sleek new HDTV set.

Be sure about the following things before tossing the credit card on the counter of the shop:

- ✓ The length of the cables and their compatibility with all audio-video connections.
- ✓ Need of some special cables, connectors, or converters.
- ✓ Need of another or some specific sized "satellite-dish" for unobstructed receiving of HDTV Signals from satellite service.
- ✓ The way to upgrade cable set-top-box to HDTV set-top-box, if you have satellite or cable service. Sometimes, you may require an integration of set-top-box and HDTV receiver to catch the HDTV signals from the source.
- ✓ Surge protectors.

Although Surge protectors are crucial, beware of certain cheap devices that are supposed to be surge protectors but do not provide any protection. Also, do not think that expensive devices are always the best ones. Check the device before purchasing. This is the most sensible thing to do. Cost of any product does not reflect its true performance.

Over-The-Air (OTA) Antenna

If one wishes the HDTV to receive Over-The-Air (OTA) Digital TV or HDTV Broadcasts, one has to set up a specific TV antenna. You should know how far the transmitters are located from your house.

The type of antenna depends on this distance. If the source of transmission is nearby, then a simple set-top antenna, characterized with its rabbit-ear shape can work for you.

Do not fall in the trap of some people suggesting the setting up of HDTV-Capable antenna. There is no such thing. In order to accept HDTV signals, one only needs to arrange a superior UHF antenna, or in some places, maybe a VHF-UHF combined antenna.

Those who reside at the periphery of the broadcast range of local station, which is about 50 miles; they may need an antenna meant for the greatest reception. Such antenna may be expensive.

## Amplifiers and Antenna Rotors

Amplifiers can remarkably enhance the reception. However, the opposite can happen too. An ill-assorted amplifier can worsen the reception. Besides this, trees, high-rise buildings, undulating topography, or the presence of some electronic waves can interfere with the reception. Moreover, a number of local stations transmit the digital HDTV signals at considerably reduced wavelengths. This becomes difficult for even the superior quality antenna to catch the signals from far away places.

An Antenna Rotor facilitates the exact positioning of the antenna. If there is more than one transmitting tower situated in various directions in the premises of your location, the use of an antenna rotor becomes even more important. If you want to shop for an Antenna Rotor, prefer the newly designed ones. They come with the benefit of a digital controller, which can be held in the hands. This one is a good buy.

## Verify and Then Buy

Remember; buy only when you are sure of the product. If any doubt ruffles your mind, do not ignore it. Do not hesitate to inquire about the product. If you are not convinced with the information, check out some other shop. A fully aware customer will never regret his or her investment in the purchased product.

# LCD HDTV Or Plasma HDTV

If you are looking for a flat-screen, slim and classic HDTV, you have two choices, LCD HDTV and Plasma HDTV. A few years ago, it was an easy task to make a decision. If you wanted a 40-inch or bigger flat screen, the only available option was Plasma HDTV, otherwise you should have chosen LCD. However, things have changed now with the improved technology of LCD HDTVs. Now, to decide which one is better is not an easy task. Both the versions of HDTVs have their benefits and disadvantages. Therefore, each one is better in certain circumstances. The following details will certainly help you to choose one that best suits your requirements. After you have gone through all these details, you will have a better idea of which HDTV is right for you.

## How do the two technologies work?

### Plasma HDTV

Phosphor, a chemical compound, is the heart of a Plasma HDTV. The light you see on a plasma screen is caused by these phosphors. Each pixel in a Plasma HDTV is made up of three types of phosphors, red, blue, and green. When beams of electrons strike with these phosphors, they emit light. The amount of light depends upon the intensity of the electron beams.

### LCD HDTV

Where phosphors play a major role in the technology of Plasma HDTVs, in LCD HDTVs, it is crystals. Crystals, in the form of liquid, is sandwiched between transparent panels. There is a bright florescent light behind these panels. The sandwiched crystals are

instructed to either let the light pass or not. Color filters are also used, which determine the color.

## Does size matter?

Since both Plasma and LCD TVs are large screen televisions, size does not matter that much. However, if you consider viewing area by size, Plasma TVs have always been a good choice. Again, you can find more varieties of Plasma TVs in comparison to LCD TVs. On the other hand, if by size you mean the size of your bank account, it matters indeed. For the same size, Plasma TVs are normally less expensive.

## Viewing Angle

The viewing angle is the feature that determines how far off to the side you can sit from the TV and still see the picture clearly. It is very important to consider the viewing angle because not all of your family members can sit literally in front of the TV. When it comes to viewing angle, Plasma TV has a definite edge over LCDs. Some LCD-manufacturers claim that the 170-degree field of vision offered by them allows accurate viewing. That is not true at all. You may be able to see what is happening at that angle, but it is not the same as sitting more directly head on.

## Issues with Plasma and LCD HDTVs

There are certain issues with both Plasma and LCD HDTVs. The following details will help you understand them.

## Problems with the Dead Pixels

There are certain problems with pixels in both the televisions. Sometimes pixel is always ON. For example, it lit up when the

screen is black. Sometimes the pixel is always OFF. For example, it looks black when it should have color. You must buy your HDTV from reputed manufacturers, because in that case there are lesser possibilities of such problems. Again, if you face any such problem, reputed manufacturers take care of it.

## Which Is Better For Fast Moving Actions?

A common belief is that Plasma TVs are better than LCD TVs in this regard. This is even true indeed. When you watch an action on LCD TV, for example, a football player moving down the field, the edges of his body might look somewhat fuzzy. You might find some jagged and blocky lines instead of a clean one, which is not the case with a Plasma TV.

## Burn-in Effect

One of the biggest potential negatives with Plasma TVs is the 'Burn-in' effect. This is where LCD HDTVs have a definite edge over the Plasma HDTV. LCD panels do not suffer from 'Burn-in' effect. 'Burn-in' happens when an image stays on the screen for an extended period and then image literally burns in the screen. It means that even when the image is not present, you can still see a faint trace of the image on the TV screen. Hence, for video gamers and sports lovers, LCD HDTV is definitely a better choice than the Plasma TV.

## Life Span

In general, the life span of both LCD and Plasma HDTVs is good. With time and technology, it is getting better indeed. Still, LCD HDTVs have an edge over Plasma versions when it comes to life span because their light source can be replaced, but once a plasma TV

gets faded image, you cannot replace it. However, replacing bulbs on an LCD can cost you as much as a few thousand dollars. If we believe what manufacturers claim, then both LCD and Plasma TV last at least 30,000 hours before any noticeable depreciation in the image quality. Hence, if you watch television 10 hours a day, you would not have any problem for the next eight years, and if you watch television just for 4 hours a day, you would get over 20 years of viewing before seeing any depreciation.

## Overall Picture Quality

This is perhaps the most important area of consideration while choosing between Plasma and LCD HDTVs. Picture quality rather depends on your personal taste. Both of the TVs have their own qualities. Choice is yours.

## Color

A common belief is that LCD TVs produce sharper pictures with more realistic colors. The truth is somewhat different. In Plasma HDTV you will find realistic and a wider range of colors. LCD TVs give you a vibrant, primary colors type of feel. Plasma TVs give subtler, warmer pastels, but perhaps more accurate. However, at the end of the day, it all depends on your personal taste.

## Brightness

LCD TVs tend to be brighter and more colorful while plasma TVs tend to be warmer with more accurate color reproduction. However, most people believe that LCD HDTVs perform better in bright-light condition than the Plasma HDTVs.

## Black Levels

Plasma TV has the ability to produce deep black colors. Dark color on LCD TV is a somewhat complicated process. Instead of deep black, LCD TVs produce dark gray. When you become used to the set's color, this goes unnoticed. Still, technically, Plasma scores an edge in this regard.

## Prices

Plasma TVs have established something of a better reputation than LCD TVs. Even when it comes to price, they are less expensive. LCD technology is new, and after a few years they may be available at lower prices and with better features than Plasma TVs. However, in the present scenario, Plasma HDTV has a definite edge over LCD TVs.

Technologies are changing rapidly, but for now, it is still true that for sizes of 40-inch and above, Plasma HDTVs offer a less expensive and a better resolution, while for screen sizes less than 40-inch LCD HDTV is better.

# HDTV Display Systems

Pictures in HDTV look sharper and clearer than that of regular TVs. The quality of the high definition broadcast signal is such that the images you see life like images. This incredible picture quality makes you feel as if you are on the soccer field, when you are watching a soccer match. If you are watching a movie on your HDTV, you would feel like you are sitting in the front seat of a movie theatre.

## Wide Screen

The hallmark of a HDTV is its rectangular wide screen and the high resolution of display. The way the picture is transmitted and displayed on the screen depends upon its aspect ratio. The aspect ratio is the width to height ratio of a TV monitor or its program format. In comparison to the 4:3 aspect ratio of the old analog TV, which has a square appearance, the wide screen of HDTV has a 16:9 viewing aspect ratio. This makes the real difference that why the later leads to a better visual and acoustic enjoyment of watching television.

## Why Wide Screen Display Is Better?

The simple reason is that the wider view is closer to the human vision. Our vision is optimized within a 30-degree field, and beyond 30-degree there is no visible benefit. The central area of this field provides us the best view, but the peripheral vision is better at detecting motion. Where the 4:3 aspect ratio of analog television allows us only a 10-degree field of vision, HDTV allows us a complete 30-degree.

Note: Do not confuse the aspect ratio with the screen size. The screen size is the diagonal measurement. HDTV comes in multiple sizes, but the aspect ratio is always 16:9.

## Resolution

HDTV comes in two different resolutions – 1080i and 720p. The 'i' in 1080i means interlaced, and the 'p' in 720p means progressive. In both the resolutions, every second consists of 60 frames of video.

## Progressive Resolution

Progressive resolution puts 60 full frames on the screen every second. The 720p video resolution is 1280 X 720 pixels, which gives 921,600 total pixels.

## Interlaced Resolution

Unlike progressive resolution, interlaced resolution puts half and half, 30 frames of odd lines and 30 frames of even lines, on the screen every second. Some people complain that it causes flickers on screen. However, the fact is you see the complete image on your TV screen two times more often, which results in smoother motion, and the flickers, if at all they exist are not visible. The 1080i video resolution is 1920 X 1080, which gives whopping 2,073,000 pixels.

## What is pixel, and how does it make a difference?

A TV screen is made up of small picture elements known as pixels. Each pixel constitutes three closely spaced dot colors – red, blue and green. Combined together on the TV's phosphor screen, and when viewed from a distance, the colors are seen as one. The pixels in the analog system are slightly taller than their width while in HDTV they are 4.5 times smaller, spaced closer, and square in shape. This enables HDTV to display 4.5 times more detail than analog television.

## Which resolution is better?

It is nothing like which one is better. Both 720p and 1080i have their own qualities. Though not quite visible but technically the displayed images on 1080i slightly flickers. This causes a psychological difference, and some people like the slightly more 'stable' picture of 720p, while others prefer the whopping resolution of 1080i. If you find it difficult to decide, our only suggestion is that you run down to your local TV store and see for yourself. After all, the beauty is in the eyes of the beholder.

## Different TV display technologies

There are three different formats, which offer the HD technology.

CRT (Cathode Ray Tube) – This paints the images onto the screen. The style is perfect in any lighting condition and from every angle.

Plasma Display – It has an ultra-thin design, and it displays digital images at a high resolution. The major drawback is that it is costly

and picture quality is affected, as it does not display black color efficiently. Moreover, many plasma displays do not display HDTV resolution.

LCD (Liquid Crystal Display) – It uses two different polarized, transparent panel to house a liquid in the middle. It is thin in design but there are certain size limitations. Picture quality is good for static displays only. When it comes to display images in motion, LCD does not perform well. Moreover, many LCD displays are not HDTV capable.

# How To Judge The Picture Quality Of HDTV

When you are buying a HDTV, picture quality is the most difficult thing to judge. This section offers some important tips which will help you to judge the 'good' picture quality of a HDTV.

It is time to head to the electronic store and check out the TV sets. A large store allows you to compare a bunch of sets at the same time. The real problem is all the TV sets might be showing high definition programs, but the chances are high that not all of them might be properly adjusted. Therefore, the pictures you see there might look good, but in fact, they differ from their inherent quality. Your job starts now.

## High Brightness Does Not Mean Good Picture Quality

While reviewing the HDTV sets ask for the remote control from the sales person. Press the Menu button in the remote control to bring up a list of options, and select Video or Picture Adjustments. You will find that the contrast is set at 100%, with the same for sharpness. Yes, almost every store sets their television sets at the brightest picture settings. You cannot judge the true picture quality at this setting. Set the sharpness at a low percent that halos disappear from the edges of objects and set contrast in such a way that highlights are no longer out of balance with the rest of the picture. At stores, they also set the color temperature too high. Because of this, whites look bluish. See, if the set has a color-temperature setting, generally called Low or Warm. Use that. Again, most HDTVs have a custom or pro mode. Set the TV at that mode. This will help the picture look more natural. Once you have done all this, you have done almost half of the job.

## Amount of Light in the Room

Generally, electronic stores are flooded with light. See if the salesperson can reduce the amount of light shining on the picture. If that is not possible, try to shade the screen if light is shining directly on it.

## Use DVDs to Check Picture Quality

That is right. DVDs provide the best picture a television can display. Therefore, bring a few of your favorite DVDs with you, and see if you can use it instead of the TV signal that is normally shown. Playing a couple of your pre-selected "reference" scenes on a number of TVs will give you a quick point of comparison. This will help you judge the true picture quality of your HDTV. If the store shows a negative attitude for using your own discs, it probably does not deserve your business.

## Try Out All the Picture Modes

Most of the HDTVs come with numerous picture modes, such as movie, sports, standard and mild. Try all these modes, and see how every mode affects the appearance of the picture.

## Check Out Colors

Pay attention to how the primary colors, red, green and blue look on a set. Does grass look natural, or is it too vibrant? Pay particular attention to the red color. See if they are overbearing, or blotchy looking. Check whether red color appears like orange color. These checking would help you to judge the picture quality of your HDTV more precisely.

## Stability of Image

Try scenes where the camera moves across a background with plenty of diagonal lines, like stadium bleachers or a row of windows. Is the image stable, or does it break up and lose resolution?

## Geometry and Convergence

Look toward the edges of the screen, preferably with graphics or other straight lines. You can try out CNN's crawling ticker. That works great. See if the lines are actually straight. To check convergence, look at the corners with white material, preferably lines again, and see if faint halos of color surround the white.

## Picture-In-Picture (PIP)

If you feel it important, see if the set allows you to use picture-in-picture with all kinds of programs. Can you use it with a high-definition signal? Can you use all of the inputs as PIP sources? Answers for these questions would help you to choose the right HDTV set.

# HDTV with DVI/HDCP

A HDTV without DVI/HDCP is on the verge of becoming obsolete within a year or two. According to a report by the Federal Communications Commission (FCC) the over-the-air signals throughout the US are going to be converted to pure digital formats from January 1, 2007. Hence, a HDTV without DVI/HDCP will be worthless after that.

## HDCP - High-Bandwidth Digital Content Protection

HDCP (High-Bandwidth Digital Content Protection) is an important connection that has brought a new wave of high definition entertainment choices for customers. HDCP ensures safe digital connection between superior quality HDTV and set-top-box. It is not only good news for customers, but also for content providers.

Intel Corporation is the developer of HDCP. Currently, it is being made available and preserved by Digital Content Protection LLC. Hence, it becomes necessary for the manufacturers of consumer electronics to get a license to ensure that the copyrights of content delivered via DVI connections are safe. In fact, this is a means to make the manufacturers to dance to the tunes of content providers. In other words, one can say that Hollywood striving to utilize DVI to retrieve control of their content.

## DVI - Digital Visual Interface

DVI (Digital Visual Interface) enables a high-speed uncompressed link between a HDTV set and personal computer or any other DVI-based electronic appliance. The biggest advantage of DVI is the uncompressed transmission of high definition video. It is not visible

when you receive the high definition programming; it undergoes a transformation from the source, through the set-top box, and to the TV screen.

The good thing about DVI is that only one component cable is needed to transmit the red-blue-green signal and the speed of picture delivery is remarkably greater than the analog component cables. This makes the viewing experience on Plasma TVs, DLP, and LCDs, an enjoyable one.

DVI/HDCP sends image in an uncompressed layout. Hence, it supports real intricate graphic displays and user interfaces that are found in program guides and other features meant for HDTV. The absolute power transmitted through the DVI connection allows the display devices to maintain the picture quality created by content providers and set-top boxes. This gives good viewing experience to the customers.

Always purchase a HDTV with DVI/HDCP

For a worthy investment, it is best to purchase a HDTV or any other consumer electronics appliance (DVR, DVD player, or set-top-box) with either DVI/HDCP, or HDMI/HDCP. Within a year or two, DVI will change to HDMI, which is the next version of DVI. HDMI requires a small size, handy connector and offers a longer range of transmission. It is also capable of transmitting multiple types of video signals. HDMI has immense scope for expansion and is also encouraged by some of the big manufacturers of consumer electronics. Hence, HDMI is here to stay for long. It would not be advisable to purchase a HDTV without either DVI/HDCP or

HDMI/HDCP. A TV without either of these technologies will soon become useless and obsolete.

Alas! There are a number of TV dealers, who have still not realized the significance of DVI/HDCP. A slew of new exclusive TVs are launched in the market without DVI/HDCP input.

## CRT HDTV with DVI/HDCP

TV sets based on CRT (Cathode Ray Tube) technology can also enjoy the benefit of DDVI/HDCP. This is because CRT HDTVs convert the signal to digital form for transmission. However, CRT HDTV may not get benefit equal to that received by digital HDTVs.

## Tips for Buyers

- While buying a new TV that costs more than $1000, ensure that it has DVI/HDCP input.
- Do not buy a fixed pixel TV, i.e., without CRT technology that has a non-standard native resolution. It will not facilitate 1x1 pixel mapping, and getting the best picture quality will become a distant dream. It may seem to be difficult to avoid a fixed pixel TV, as non-standard resolutions have actually multiplied in Plasma TVs, RPTVs, and front projectors. But it is worth the effort to do so.
- TV stores display the picture via component connection. This is of little use to the buyer. It is prudent to take a DVD player with DVI input, along with you, to check out the TV. This also helps to compare television picture quality in different stores.

- HDTV with three DVI inputs is ideal. However, such HDTVs are not available at present, and only a handful of them come with two DVI inputs. They are the ones launched two years back.
- While connecting the appliances to fixed pixel television sets (Plasma, DLP, LCD, LCoS), it is crucial to get a single pixel mapping for the best picture quality.

The world of electronics is changing from analog to digital. Hence, it becomes indispensable to convert the connections between household electronic devices into digital. This renovation is already complete for audio devices. And for visual devices, DVI epitomizes this foreseeable change. Therefore, to keep in pace with the technology, go digital!

# HDTV And Dolby Digital Sound System

HDTV is more popular for its sharper image, but other than the picture quality, what makes watching an HDTV a memorable experience is the Dolby digital sound. However, not all HDTVs come with a built-in sound system. If your HDTV does not have a built-in audio system, you need to connect an independent, external sound system to enhance the viewing pleasure. Unlike the stereo-sound of old televisions, HDTV offers enhanced realism in sound with full frequency response, low noise and exceptional clarity. If you want the full benefits of HDTV, make sure your system has Dolby digital 5.1. Look for the Dolby Surround Sound logo to avoid any confusion.

## What is Dolby Digital 5.1 Surround Sound

Dolby Digital 5.1 Surround Sound is a discrete multi-channel digital audio format, and is the official audio standard for HDTV. Dolby Digital 5.1 Surround Sound is different from other Dolby systems. It delivers a separate channel to the Surround-Left and Surround-Right speakers. It also features a Low Frequency Effects channel to drive the subwoofer, which provides the bass.

## How does Dolby Digital 5.1 Work

- The left, center and right channels are located in front of you, and provide precise, clear positioning of dialogue.
- The Surround-Left and Surround-Right speakers are located behind you to deliver ambient sounds.
- The subwoofer or effects channel sends an explosive punch during action sequences.

## How to Connect and Set Up

You just have to make a single-cable digital connection to your A/V receiver to receive the crystal-clear Dolby Digital sound. If you want to harness the full power of Dolby Digital 5.1 Surround Sound and maximize your HDTV experience, you must have a dedicated audio system comprising at least five speakers, plus a subwoofer for extreme low frequencies, and of course, ample power to drive them all. Place all the speakers at recommended locations to enjoy the optimal surround sound experience from your HDTV.

## The Advantages of Dolby Digital 5.1

If you are watching a movie, you can enjoy the full-scale auditory experience that its creators intended, and hear everything from the roar of the crowds to the panting of the athletes when watching live sporting events such as auto racing, football, basketball, baseball, hockey, and soccer. By combining HDTV's wide screen pictures, ultimate clarity, and Dolby Digital 5.1, you get a truly impressive TV viewing experience.

# Budget And Pricing

During the last few years, the price of HDTVs has come down significantly. However, buying a HDTV is still an expensive deal, and you must be prepared for a substantial investment. Buying a right HDTV requires an understanding of your needs and sticking to your budget. It is important that you set a hard price ceiling for yourself, and resolve to stay with it.

## Why Is Fixing Your Budget Important?

Different types of HDTVs fall into certain price categories, and their capabilities tend to increase sharply with every thousand dollars up until four thousand. When you choose to go above four thousand dollars, prices increase wildly without any significant return. By fixing a budget for yourself, you can have a clear understanding of what you are looking for, and what you will get.

## Include Accessories In Your Budget

While you set a hard-price ceiling for yourself, make sure the price includes all your accessories also such as, stand, cabling etc. Again, if you want to wall mount the HDTV, you must also include the price of hanging-hardware in your budget. Another important consideration could be the cost of getting some kind of HDTV cable or satellite service, as you need to purchase a new receiver box also. You need not buy everything all at once. However, you would certainly like to purchase all the essential things so that you could actually watch something with your initial purchase. Moreover, to enjoy the true effects of a HDTV, you require speakers to produce Dolby digital surround sound. There are various complete audio system packages available in the market in a wide price range.

Make a good research before purchasing such an audio system because you can find even some lower-priced systems that are able to produce incredible audio experience with HDTV.

## Where Will You Install Your HDTV?

Space is the primary concern before you fix your budget. You must have a clear understanding of how much space is available to you, and where would you install your new HDTV. You cannot buy a 60-inch rear-projection HDTV for a room that is suitable for a 36-inch HDTV. Therefore, depending upon the room size and viewing distance, first you need to make sure what size of HDTV is most suitable for you. Then you can go ahead and fix your budget. If your room size and the viewing distance allow, you can of course look for the bigger ones. Set your budget accordingly.

## Choosing the Right HDTV as Per Your Budget

Once, you have a clear idea of what size of HDTV is appropriate for you, selecting a right HDTV mainly becomes the game of price. The following points will help you select the appropriate HDTV that falls within your budget.

## For Screen Sizes Smaller Than 40 Inches

If you are looking for an HDTV with screen size up to 36 inches, CRT is the best bang for your buck. In terms of picture quality, every new technology is compared to CRTs. For a 36-inch HDTV CRT is undoubtedly the best choice. The biggest drawback of HDTV based on CRT is its mass and weight. Therefore, if you want something thin and flat, LCD is the ideal HDTV option. They are available in all sizes from as small as 36 inches to 65-inch behemoths. However, LCD TVs give their best performance when their size is smaller than

40 inches. Again, if ambient light is difficult to control in your room, nothing is better than LCD, as it offers bright picture and anti-reflective screens.

## For Screen Sizes Above 40 Inches

If you are looking for screen sizes above 40 inches, Plasma Display Panels i.e. PDP is a better option. Plasma TVs are available in as small a size as 42 inches. Because of the intense competition in the market, the price of Plasma TVs has come down significantly. Especially, the price of some 50-inch PDPs is now almost half of what they used to be a few years ago. However, the bigger models are still expensive. The intense competition has also resulted in better picture quality and increased longevity. The 42-inch HD plasmas are also one of the most favorite displays for watching DVD movies.

## For Big-screen HDTVs

When it comes to big-screen HDTVs, nothing can beat rear-projection televisions i.e. RPTVs. The available sizes of RPTVs range from 42 inches to 70 inches. No doubt, the viewing angles of Plasma displays are unmatched. However, with proper placement and seating position, you can exceed the image quality of any RPTV.

## Compare quality and prices

The fallowing list will help you understand the options available to you as per your budget.

| Budget | What will you get |
|---|---|
| Less than $300 | Curved tubes: up to 32 inches<br>Flat tubes: up to 27 inches<br>Flat-panel LCD: up to 20 inches |
| $300 to $500 | Curved tubes: up to 36 inches<br>Flat tubes: up to 32 inches<br>Flat-panel LCD: up to 20 inches |
| $500 to $750 | Flat tubes: up to 36 inches<br>Flat-panel LCD: up to 30 inches<br>CRT rear-projection: up to 46 inches |
| $750 to $1,000 | Wide-screen HDTV tubes: 34 inches<br>Flat-panel LCD: up to 32 inches<br>CRT rear-projection: up to 51 inches<br>DLP rear-projection: 43 inches |
| $1,000 to $1,500 | Flat-panel LCD: up to 37 inches<br>CRT rear-projection: up to 61 inches<br>LCD rear-projection: up to 60 inches<br>DLP rear-projection: up to 56 inches<br>Plasma: up to 42 inches |
| $1,500 to $3,000 | Flat-panel LCD: up to 42 inches<br>CRT rear-projection: up to 65 inches<br>DLP, LCD, LCoS rear- |

| | |
|---|---|
| | projection: up to 62 inches Plasma: up to 50 inches |
| More than $3,000 | Flat-panel LCD: up to 42 inches DLP, LCD, LCoS rear-projection: up to 73 inches Plasma: up to 65 inches |

Hence, before you actually swap your credit card for your new HDTV, make sure you have chosen the best as per your budget.

# Warranty For HDTV

An HDTV set is a personal purchase, so one has to take care. The dealer will put an extended service contract or warranty before you. The buyer may not realize that this is often a principal source of profit to the sales people. Now, it is up to the buyer to decide whether the product is worth the extra bucks in the form of warranty.

Take an extended warranty like an insurance policy. Consider the rewards of it, the things included in the contract, and those that are excluded.

Remember, if something is not in written form in the contract, then that thing does not exist, no matter how many times the salesperson talks about it.

Another important thing to consider is the place of servicing. The contract should include 'in-home' words written in it. Do not accept contracts without home service. You might think it is easy to carry the medium size TV set to the service location. It is not actually.

Generally, service contracts offer yearly servicing, which includes only external cleaning and slight tunings. Besides this, it is always risky to service a HDTV set, as there is no definite way to scrutinize the service person's qualification and skill. Who knows whether he is an expert in HDTV technology or just an amateur?

Read each and every word of the service contract before accepting it. If you do not understand certain terms and conditions, verify them then and there. Doubts may lead to misunderstandings later.

# Accessories For HDTV

Once you opt for a HDTV after making an informed decision, it is necessary that you buy some essential accessories in order to enjoy a HDTV experience. Once content is received via cable, satellite or an over-the-air broadcast, whether an inbuilt HD tuner is available or the content provider supplies a set-top box, certain accessories are needed to enhance the viewing experience. With the use of the right accessories, HDTV is all that it promises to be, a truly remarkable and breathtaking experience. Some accessories are:

1. AV HDMI-to-DVI Cables: The latest and most recent set-top boxes, DVD players, HDTV's are all equipped with the advance all digital HDMI connection for video hookups. However, some older versions are equipped with just a DVI jack. AV HDMI-to-DVI converter cables have a DVI plug on one end and a HDMI plug on another end helping to connect a HDMI display to a DVI source or vice versa.

2. Cable HDMI-DVI Adapters: When the content supplier provides a set-top box with the latest HDMI port with a suitable cable but the HDTV has an older DVI Connector, the cable HDMI-DVI Adapter comes in handy to convert the DVI jack to a HDMI version.

3. AV DVI Dual-Link Cables: This cable is suited when the HDTV and DVD player both have DVI jacks. It is also used for DVI-equipped pc monitors and video cards.

4. Cable HDMI cables: If the HDTV, set-top box, DVD player and AV receiver all have HDMI jacks this cable, available in multiple lengths, comes in handy to inter connect all the equipments.

5. AV Component Video Cable: In case the DVD player or the HDTV monitors do not have either a HDMI or a DVI jack. This cable delivers HD signal to older equipment although the connection is analog rather than digital.

6. Digital Video Essentials calibration DVD: This calibrator offers the best combination of reliable test patterns and in-depth information for those who like to improve the picture quality by trying out do-it yourself calibration.

7. DTV1 Outdoor Antenna: An Outdoor antenna yields the best possible reception and this one is especially designed to maximize digital signal strength.

8. ZHDTV1 Silver Sensor Indoor Antenna: This is a stylish, affordable alternate to an outdoor antenna. It can be connected easily to a HD tuner of a HDTV or a set-top box.
9. HDMI Switcher (EXT-HDMI241): When the HDTV monitor has a single input, and it is necessary to connect a DVD player and a Set-top box, this switcher helps toggle between the two HDMI sources.

10. DVI HDTV Switcher (EXT-HDTV-241): When you need to switch between multiple DVI enabled devices this switcher gets the job done.

These are a few of the essential accessories needed to enhance the performance of a HDTV. With all the right accessories, viewing a HDTV will be an unforgettable experience and worth every cent spent on purchasing it.

# How to Setup Your HDTV

While buying an HDTV for your home, you must also know what the prerequisites of setting up a new HDTV in your room are. The following detail will help you with the basics of the set up process for your HDTV.

## Basic of the Setup process

Following are some of the basic considerations before you finally setup your new HDTV in your room.

## Screen Size and Room Size

Match the screen size of your new HDTV set with the size of the room. Make sure that the setup allows you to sit at a comfortable viewing distance. You should be neither too close nor too far from the TV. A comfortable viewing distance is about twice the diagonal screen size, and one and half times if your HDTV is a front projection type. For example, for a 40-inch screen, the comfortable viewing distance is approximately six and a half feet.

## Room Lighting

The room light plays a very important role on the viewing quality of your HDTV. Make sure that you have placed your HDTV at a place where in daytime windows do not shine light onto the screen of the TV. Make sure that the reflection of lamps or bulbs do not appear on the TV screen during the night or when the room is illuminated.

## Getting To the Source

Monitors and integrated sets are the two varieties of High-definition televisions. Integrated sets come with a built-in HDTV tuner, while

monitors require an outbound digital tuner to receive high definition signals. A few years ago, monitors were more common, but the recent trend is favoring integrated sets.

There are three ways to get HDTV signals – via an off-air antenna, an HDTV cable box, or an HDTV satellite receiver.

## Off-Air Antennas

Off-air antennas come in indoor and outdoor version, and provide access to local HDTV broadcast. You must know what kind of antenna you require, and where to locate the antenna in relation to your house.

- If you live in a house that is surrounded by taller buildings, you require a medium or large directional antenna on your roof.
- For a multistory house, a smaller multi-directional antenna will do.
- If your apartment building does not allow you to have an outdoor antenna, you have no other option but to use an indoor antenna.

## HDTV Cable Boxes and Satellite Receivers

They are special cable boxes and satellite receivers, which have additional connections and features to provide high-def programming. Some new models come with even a hard disk drive, using which you can play and pause live television programs, and record your favorite TV shows.

## Integrated Sets and Cablecard Slots

CableCard are as small as a credit card. You can get it from your cable provider. You can connect it directly to the TV, and once connected, you do not need to install an additional cable box to tune in your subscribed premium channels. However, if your cable or satellite service does not catch all of the local HDTV stations, you would have to use an off-air antenna to receive those signals.

## Connection between HDTV Tuner and Monitor

There are many options to make the video connection between an HDTV tuner and the monitor.

- You can connect component-video cables from the set-top tuner box to the TV. This is the most common option.
- You can connect the cables to an A/V receiver and then make a component-video connection from the receiver to the TV. If you want to use the receiver to switch between other component-video sources, like your DVD player, this option is a better one.

## Note

Make sure that the receiver can handle wider bandwidth of HDTV signals, or you will lose picture detail. Also, make sure your installation hardware such as cables, splitters, and other components such as signal amplifiers can handle the full HDTV bandwidth. The bandwidth of your hardware must be at least 110 MHz.

## HDTV Tuner and TV Display Format

After connecting the tuner, you need to set it according to the TV display format. Depending on the native resolution of your set, you can select 720p or 1080i output. If you have a flat panel LCD or a Plasma TV, the native resolution may be different. Make sure that you know what the display format of your HDTV is.

## Audio

- For a surround sound audio setup, run either an optical or a coaxial digital audio cable from the cable box or satellite receiver to the A/V receiver.
- If A/V receiver is not available, you can connect the tuner and TV using standard analog stereo inputs and outputs.

## Cable and Satellite Installations

Your set-top box will need to be configured and activated, so you may require professional assistance to install that for you. If you have a satellite hook up, you need an 18–20 inch dish to receive HDTV signals. You need a larger, elliptical dish for a direct TV.

## The Final Touch

After you are through with all the setup process, you have one more thing to do. You need to run a first-time setup on your HDTV. Use your remote control, select onscreen menus, set audio output options, scan channels, and do some cable tuning. Your HDTV is set and ready for viewing. Happy Viewing!

# The Future Of HDTV

HDTV is gaining popularity rapidly, despite the faster implementation of new technologies in HDTV, unresolved issues regarding the copy protection of DTV content and the slow deployment of content distribution. Each brand of HDTV has an amazing line up of newer and more astounding products with astounding features and upgrades.

## Latest HDTVs from Leading Companies

Thomson will release two new state-of-art DPL units at 50" costing $3999 and 60" costing $4999. They have light engines with a 6-segment color wheel spinning at 7200rpm. These TV's have an Ethernet port to connect a home network and inbuilt IE web-browser for internet surfing using a broadband connection.

Toshiba has come out with a very high rated and expensive LCOS HDTV that is fast becoming popular. Philips Cineos line of LCOS HDTV coming out later this year with a single chip are expected to be promising claiming to be noise free and rainbow free too.

Samsung is all set to create a furor with the HLN4365W, the thin-bezel HLN467 and HLN567. It is also trying to keep the customers satisfied offering added features, electronic swap outs, and upgrading existing DLP set owners.

Sony range of CRT HDTV has received some rave reviews from critics.

Entrepreneurs like Mark Cuban figured out that HDTV is a great way to make money as its future has so much potential. He runs the sports driven HDTV network on DirecTV called HDNET. It broadcasts

HDTV programming as well as live NHL, baseball games and extreme sports. According to Cuban, the biggest challenge is to find content that is affordable relative to the number of subscribers. The popularity of HDTV and the increase in its sales will have a definite negative impact on those channels that do not broadcast in HDTV format. Cuban expresses his view in a interview with www.AudioRevolution.com, that as more and more sports bars buy HDTV, more customers are lured to buy HDTV and experience its amazing features at the comfort of their homes. Once people experience HDTV they are like addicts, they cannot do without a HDTV of their own. The reason why HDTV is so different from analog TV is its high quality, picture perfect content that has to be experienced to be believed. The popularity of HDTV has got the big advertisers interested in HDTV because of its marketing potential.

Channels like CBS have already figured out the earning potential of HDTV programs and have spent billions of dollars in HDTV content development and programming. If greater quantity of high quality HD content is developed at affordable rates and adequate intellectual property protection and home recording rights are established, the future of HDTV will be one to reckon with. Anticipating a boom in the HDTV industry several producers and filmmakers are busy developing quality HD content. The popularity of HDTV has made several shows broadcast in HD like 'JAG,' and 'Just Shoot Me.' There are rumors that Discovery is expected to launch a new channel in HDTV format called Discovery HD Theater.

Should the price be more affordable, lots of people will definitely enjoy watching HDTV. Cable and satellite providers should show

more interest and invest in HDTV in order for HDTV to really have an impact in the average American home.

Those who have experienced HDTV will buy a HDTV despite the cost as these HDTVs really have to be seen to be believed, so perfect is the display with crystal clear pictures. If HD content is developed faster, distributed at affordable rates, HDTV will definitely be the TV of the future.

# Glossary Of Important Terms

A

AC-3: Also known as Dolby Digital, it is a 5.1 channel sound system meant for HDTV. It provides CD-quality digital audio, sub-woofer, low frequency effect and five full bandwidth channels for front left, front right, center, surround left and surround right speakers.

ATSC: Advanced Television Systems Committee that is responsible for developing and establishing Digital-HDTV Standards, as well as all formats of Digital TV.

A/D: This is the analog to digital conversion or converter used at the transmission end of broadcasting.

Addressable Resolution: It is the highest resolution signal that a display device like a monitor or a TV can accept. Although it may receive the resolution signal, the device may not be able to display it.

Analog TV: It is the NTSC standard for traditional television broadcast. Analog signal vary continuously representing fluctuations in color and brightness.

Artifacts: Refer to unwanted visual images caused due to disturbances in transmission or image processing. They are referred to as hanging dots' or 'edge crawl' in analog pictures, and 'pixelation' in digital pictures.

Aspect Ratio: It refers to a width of a picture in relation to its height. The 4:3 aspect ratio means the picture is 4 feet wide and 3 feet high. HDTV has a 16:9 aspect ratio.

ATV: A term used to refer to the advances and development of a digital television, now referred to as DTV.

B

Bandwidth: It refers to a range of frequencies to transmit information such as audio or video. The FCC has allocated 6 Mhz for each channel. For a DTV the maximum bit rate possible within a bandwidth is 19.4Mbps, which can accommodate 1 HDTV channel.
Bit Rate: It is used to express the rate at which data is transmitted or processes and measured as bits per second. The higher the bit rates the higher the pictures resolution.

C

Channel: It is the 6MHz section of a broadcasting spectrum allocated for one analog NTSC transmission.
Component (HD) Video Connection: It refers to the output of a HDTV set-top box or the input of a HDTV monitor or receiver.
Composite Video: It includes vertical and horizontal synchronizing Information in an analog encoded video signal. Since brightness and color signal are encoded together, a single connection wire is sufficient such as a RCA cable.
Compression: It refers to the method of electronically reducing the number of bits required to store or transmit data within a specified time or space. MPEG2 is the compression method adopted by DTV.

D

D/A: Refers to the conversion of digital signals to analog signals. A D/A converter is used to convert and decode digital signals to analog signals.
DBS: Digital Broadcasting Satellite refers to digital TV transmission through satellite.

DLP: Digital light processing is based on a Digital Micro-Mirror device {DMD}. It is a chip with microscopic mirrors attached to it. Red, Blue and green light filtered through a colored wheel are directed at the DMD which switches on and off up to 5,000 times a second. The reflected light is directed to a lens and onto a screen, creating an image. HDTV use 3 chips each for red, blue and green colors.

Dolby Digital: Means the same as AC3.

Down Convert: With regards to DTV refers to the conversion of a higher resolution input signal to a lower one. Some DTV receivers can down convert HDTV signals to those that any TV can transmit.

DTCP: Digital Transmission Copy Protection of a HDTV is otherwise referred to as the 5C.

DTLA: Digital Transmission Licensing Administrator is the licensing organization for the 5C DTCP HDTV copy-protection technology.

DTS: Digital Theater Systems sound similar to a Dolby Digital system, used in movie theaters and DVD.

DVI: Digital Visual Interface is a high-bandwidth video connection that carries digitized RGB picture information and can support copy-protection methods.

D-VHS: Digital-Video Home System capable of recording HDTV, manufactured by Mitsubishi and JVC.

DVR: Digital video recorder is a TV recorder and it can record an entire series or programming defined by keywords, genre, or personnel. It offers pause control over 'live' broadcasts and is also called personal video recorder (PVR) or hard disk video recorder.

E

EPG: Electronic program guide is an on-screen display of channels and program data.

F

Frequency: It refers to the number of times per second that a signal fluctuates. Television is broadcast in frequencies ranging from 54 MHz to 216 MHz (VHF) and 470 MHz to 806 MHz (UHF).

H

HDTV: High Definition Television has twice the horizontal and vertical resolution of a normal NTSC TV; therefore the picture is twice as clear and sharp. HDTV offers reduced motion artifacts and offers 5.1 independent channels of Dolby Digital Quality.

HDCP: High-bandwidth Digital Content Protection to be used in conjunction with DVI and HDMI connections.

HDMI: High-Definition Multimedia Interface that is like an USB that can transmit uncompressed digital audio and video signals.

HD-DVD: High-definition digital videodisc has several formats including Blu-ray.

I

IEEE 1394 Fire Wire: It is a digital interface that can transport data at 100, 200, or 400 Mbps. It can be used to connect digital television devices together.

Interactive Television: This TV will enable the viewer to interact with the TV programs, combining normal TV viewing with the interactivity of a personal computer.

Interlaced Scanning: Refers to the process of re-assembling a picture from a series of electrical video signals.

I/O: Refers to the input/output or sending information or data signals to and from devices.

ISDN: Integrated Services Digital Network enables transmission of data at high speeds, Basic Rate of 64 Kb/sec up to a Primary Rate of 2 Mbps, using a telephone line.

L

LCD: Liquid Crystal Display television or monitor uses liquid crystals that behave like "shutters" within the television screen. LCD monitors typically only display video signals in a progressive scan format, do not use phosphors and are not susceptible to screen burn.

Line Doubling: It refers to the method of presenting wide screen images on a standard screen television.

Lossy compression: It refers to the reduction of data by discarding data that is not important. Both audio and video for DTV use this method.

Luminance: Refers to the component in video signals providing information about its brightness.

M

Megabyte: Refers to 1000 kb or kilobytes.

Modem: It is used to transform a typical two-level computer signal into a form suitable for transmission over a telephone line and vice versa.

MPEG: It is the Compression standards for moving images advanced by the Motion Pictures Expert Group {MPEG}.

MPEG-2: It is the compression used by the ATSC and DVB standards.

N

NTSC: National Television System Committee standard combines blue, red, and green signals modulated as an AM signal with an FM signal for audio.

P

PAL: Phase Alternate Line is the television broadcast standard in Europe and parts of Asia. PAL signals have 25 frames per second, making them incompatible with NTSC TV.

Pan and Scan: Refers to the method by which an original wide screen picture is cropped to fit a conventional TV, some times resulting in critical loss of details.

Parallel cable: Refers to a multi-conductor cable carrying simultaneous transmission of digital data bits.

Parallel data: Transmission of data bits through a collection of wires called a bus.

Parallel digital: It is a Digital video interface that utilizes twisted pair wiring and 25-pin d connectors to transmit bits of a digital video signal in parallel.

PCM: Pulse code modulation refers to the method by which sounds are reproduced by modulating the playback rate and amplitude of the sampled digital pulses.

Pillar-box: When conventional TV images are made to fit a wide screen causing the picture to display black bars on both the sides of the picture.

Pixel: This is short form of referring to Picture cell or Picture element. HDTV Pixels are virtually square-shaped and fairly smaller.

Progressive Scan: Method by which all, horizontal scan lines are scanned on to the screen at the same time.

Protocol: Set of rules defining exchange of data including items such as timing, format, sequencing, error checking, etc.

PSIP: Program and System Information Protocol enables a DTV receiver to identify program information from a station and use it

to create easy-to-recognize electronic program guides for the viewer.

Plasma Display: A Plasma TV display makes use of numerous embedded cells to produce a picture. However, plasma pixel-cells deteriorate over time causing the picture quality to diminish significantly.

R

Resolution: Refers to the measurement of the smallest that is visible in a video image. It is expresses in terms of the number of pixels in an image.

Standard Digital TV Resolutions:

SDTV: 480i - The picture is 704x480 pixels, sent at 60 interlaced frames per second (30 complete frames per second).

NTSC-Analog TV: 480p - The picture is 704x480 pixels, sent at 60 complete frames per second.

HDTV: 720p - The picture is 1280x720 pixels, sent at 60 complete frames per second.

1080i - The picture is 1920x1080 pixels, sent at 60 interlaced frames per second (30 complete frames per second).

1080p - The picture is 1920x1080 pixels, sent at 60 complete frames per second.

Return Loss: Refers to the ratio of the signal power transmitted into a system, to the power reflected or returned.

RGB: Refers to the red, green and blue, the primary colors of television. TV screens have red, green and blue phosphors that are illuminated by red, green and blue guns.

S

SECAM: Système Electronique Couleur Avec Mémoire (SECAM) is a signal format used in video equipment in France and the former Soviet Union.

Set-top Box: This is also known as a decoder, receiver or tuner. It is a unit that is capable of receiving and decoding DTV broadcasts.

Spectrum: Refers to the range of frequencies available for over-the-air transmission.

SDTV: Standard Definition Television refers to digital transmissions with 480-line resolution, either in interlaced or progressive scanned formats.

S-Video: Separated video is encoded video signal that separates the brightness from color data.

U

UHF: Ultra high frequency refers to the range used by TV channels.

Upconvert: Refers to the conversion of a lower apparent resolution to a higher number.

V

VHF: Very high frequency refers to the range used by some TV channels.

Y

Y/Pb/Pr: Refers to an advanced method for interconnecting decoded video data. It is generally used designation for HDTV component type connections.

Y/U/V or Y/Cr/Cb: Refers to Component" type Digital TV connector/cable. Three wires are used, one wire for "Y"- designates Light or Brightness; one wire is "Cr" - Red; and the last wire is "Cb"- Blue.