

## Video Terms

### Standard Video Connections (listed from best image quality to least)

**BEST**  
(high def)



#### *HDMI™ (High-Definition Multimedia Interface)*

A compact connection for transmitting digital audio/video data. HDMI connects digital audio/video sources (such as DVD players, Blu-ray players, camcorders, PCs, video game consoles, and AV receivers) to compatible devices.

**BETTER**  
(high def)



#### *Component Video*

The three-jack component video connection splits the video signal into three different parts. Component video is the only type of analog video connection that can pass high-definition signals.

**BETTER**  
(standard def)



#### *S-Video*

S-video inputs and outputs use a round, 4-pin jack used to pass video signals.

**GOOD**  
(standard def)



#### *Composite Video*

A composite video input or output uses a single standard RCA-style jack to pass video signals.

### Other Connections



#### *RGB (D-sub 15-pin)*

These connections are used for transferring video signals from the RGB connections found on many computers.



#### *Serial Port (RS-232C)*

Found on some TVs. This port may be used for controlling the TV with a third party device like a home automation or home theater system.



#### *Ethernet Jack*

Ethernet jacks allow devices to interface with one another over home networks and broadband Internet connections.



#### *DVI (Digital Visual Interface)*

DVI is a multi-pin connection used for passing standard-definition and high-definition digital video signals, found on some HDTV tuners, DVD players, HDTV televisions, and some computer displays.



#### *DisplayPort*

DisplayPort is the newest digital display interface standard. It is similar to HDMI in that it carries both audio and video signals.

## **Pixels**

The smallest bit of data in a video image. As pixel size gets smaller, more pixels can fit in the same screen area, increasing picture resolution.

## **HDTV Video Formats**

### *720p*

1080p is a high-definition video format with resolution of 1280 x 720 pixels (921,600 total pixels). The "p" stands for progressive scan, which means that each video frame is transmitted as a whole in a single sweep.

### *1080i*

1080i is a high-definition video format with resolution of 1920 x 1080 pixels (2,073,600 total pixels). The "i" stands for interlaced, which means that each frame of video consists of two fields of 1920x540 pixels each.

### *1080p*

1080p is a high-definition video format with resolution of 1920 x 1080 pixels (2,073,600 total pixels). The "p" stands for progressive scan, which means that each video frame is transmitted as a whole in a single sweep.

## **Refresh Rates**

### *60Hz*

60 frames are displayed on the TV per second. 60Hz is the minimum refresh rate for HDTVs.

### *120Hz*

These TVs employ sophisticated video processing to double the standard rate to 120 frames per second by inserting either additional video frames or black frames. On-screen motion looks smoother and more fluid, with less smearing.

### *240Hz*

240Hz refresh rate reduces LCD motion blur on LCD TVs even more than 120Hz refresh rate. 240Hz processing creates and inserts three new video frames for every original frame.

### *600Hz*

A few plasmas these days are labeled 600Hz. This isn't quite like the 120Hz and 240Hz refresh rates discussed above. However, this is also used to make motion look smoother.

## **3D TV**

3D TVs create a more engaging viewing experience that's similar to watching a 3D movie in a theater. Like 3D movies, 3D TV requires that each viewer wear special glasses to see the 3D effects.

## **Wi-Fi®**

A short-range wireless technology that allows devices to connect to and transfer information over a local area network (home network). A few Internet-ready TVs include Wi-Fi capability built-in, and most can connect wirelessly using an optional adapter. A Wi-Fi router connected to your home network is required. An Internet connection is required to access media on the Internet.

## **DLNA (Digital Living Network Alliance)**

Collaboration among more than 200 companies that includes Sony and Panasonic. These products can connect to each other across your home network, regardless of manufacturer, so you can easily enjoy your digital and online content in any room.

## **Tuners**

### *NTSC*

The old standard for local over-the-air analog broadcasts. This was replaced by the ATSC standard. Many existing devices still use this standard.

### *ATSC*

A TV tuner that can receive local over-the-air digital broadcasts is often called an ATSC tuner. This replaces the old NTSC broadcast standard.

### *QAM*

A QAM tuner allows cable subscribers to tune in unscrambled cable channels without a separate set-top box, including high-definition channels, if the cable service provider offers them.

## **Display Types**

### *Plasma*

This display consists of two transparent glass panels with a thin layer of gas-filled pixels sandwiched in between. When ionized, this gas (plasma) causes the pixels to glow, which creates the TV image.

### *LCD (Liquid Crystal Display)*

Light isn't created by the liquid crystals; a "backlight" behind the panel shines light through the display. The display consists of two panels and a liquid crystal solution sandwiched in between. Each crystal acts like a shutter, either allowing light to pass through or blocking the light. This pattern forms the image.

### *LED (Light Emitting Diode)*

A term sometimes used for LCD TVs that use an LED backlight instead of a conventional fluorescent one. An LED backlight improves contrast and delivers a wider range of colors, for a more lifelike picture. TVs with LED backlights also generally consume less power than those that use fluorescent backlights.

## **Internet-Ready (Web Apps)**

Devices labeled "Internet-ready" can connect to your home network to access online content. Services like Netflix®, YouTube™, or Pandora® allow you to stream video or audio to your device. Different manufacturers provide access to different Internet sites and services. A few higher-end TVs have Wi-Fi® capability, but most TVs require a wired Ethernet connection. You can add Wi-Fi capabilities to some TVs by adding an optional USB Wi-Fi adapter.

## **Google TV™**

Google TV delivers a new experience by bringing the TV and internet together. Using your existing cable or satellite service and at no additional cost, Google TV gives you access to more entertainment options and simplifies the process of finding what you're looking. Plus, you can enjoy both TV and web content at the same time, on the same screen.

## **Types of Media**

### *Streaming*

Audio and video content that is transmitted over the Internet or home network to a device.

### *DVD*

An optical disc storage media format. DVDs offer higher storage capacity than compact discs while having the same dimensions. DVD movies are not high definition.

### *Blu-ray Disc™*

Blu-ray Disc is a high-definition disc format designed specifically for HDTVs. It offers a much greater storage capacity than DVD for a full high-def picture up to 1080p and more detailed sound.

## ***Computer Terms***

### **Types of Computers**

#### *Desktop*

A personal computer in a form intended for regular use at a single location, as opposed to a mobile laptop or portable computer.

#### *Notebook*

A personal computer for mobile use. Also called laptops.

#### *Netbook*

A category of small, lightweight, and inexpensive laptop computers.

#### *Tablets*

A complete mobile computer, larger than a mobile phone or personal digital assistant, integrated into a flat touch screen. It often uses an onscreen virtual keyboard or a digital pen rather than a physical keyboard.

### **Central Processing Unit (CPU)**

This is responsible for interpreting and executing most of the commands from the computer's hardware and software. It is often called the "brains" of the computer.

### **Memory (RAM)**

More memory increases overall performance and enables your computer to run more applications at the same time. Upgrade memory for improved system speed and performance. These are typically measured in Gigabytes (GB).

## **Operating System (OS)**

The main software program that runs all the other applications on your computer. The OS also enables communication between your computer and peripherals such as printers, webcams and external drives. Windows® 7 is a type of OS.

## **32-bit / 64-bit**

The terms 32-bit and 64-bit refer to the way a computer's processor (CPU), handles information. The 64-bit version of Windows handles large amounts of random access memory (RAM) more effectively than a 32-bit system. One of the greatest advantages of using a 64-bit version of Windows is the ability to access physical memory (RAM) that is above the 4GB range.

## **Hard Drive (HDD)**

The hard drive is the main, and usually largest, data storage device in a computer. The operating system, software titles and most other files are stored in the hard disk drive. These are typically measured in Gigabytes (GB).

## **Solid State Drive (SSD)**

Also called a flash drive, is a type of hard drive. The architecture of an SSD is quite different from traditional hard drives. SSDs utilize a special kind of memory chip with erasable, writeable cells that can hold data even when powered off. It might help to think of an SSD as the larger cousin of the memory stick.

## **Webcam**

A webcam or web camera is a video capture device that is connected to a computer, either directly or wirelessly, and gathers a series of images for display on your computer or computer network, especially over the Internet.

## **Bluetooth®**

Bluetooth is a wireless technology which allows “personal area networking” - connection up to 100m between mobile phones, PCs and accessories such as headsets.

## **Wireless (Wi-Fi®)**

A wireless card allows you to connect to the Internet in high speed from virtually any location where a wireless network is available. 802.11n (also called Wireless-N) is a next-generation wireless standard that far exceeds the capabilities of today's 802.11a, 802.11b and 802.11g technologies.

## **USB (Universal Serial Bus)**

A “plug and play” interface between a computer and peripherals (like audio players, camcorders, digital cameras, keyboards, and printers). USB's speed makes it ideal for music and digital image transfer. There are several types of USB connectors, but they are compatible with each other.

## **FireWire®**

Also known as IEEE 1394 or i.LINK, is an extremely fast, two-way digital connection used between computers and peripherals. It is similar to USB.

# *Audio Terms*

## **MP3**

A common audio format for consumer audio storage, as well as the de facto standard of digital audio compression for music on digital audio players.

## **AAC**

A compression format for digital audio. AAC is the audio format used by Apple in their iTunes® Store.

## **Hi-Fi (High Fidelity)**

Refers to the high-quality reproduction of sound to distinguish it from the poorer quality sound produced by inexpensive audio equipment.

## **Surround Sound**

A range of techniques such as for enriching the sound reproduction quality of an audio source with audio channels reproduced via additional, discrete speakers (or channels).

## **2.1 / 3.1 / 5.1 / 7.1 Channel**

Each of these different surround sound setups uses different techniques and speaker placements to achieve 360° sound for the listener. The first number (2, 3, 5, 7, etc.) indicates the number of discrete speakers used to create the surround sound. The “.1” indicates the low frequency subwoofer channel.

# ***Camera / Camcorder Terms***

## **Types of Digital Cameras**

### *Subcompacts*

Small cameras that fit in a pocket, weigh a few ounces, and can be carried everywhere. Most don't have manual controls or viewfinders, but some include a variety of useful features, such as touch-screen LCDs.

### *Compacts*

Compacts are too big for pockets but small enough for most handbags. Many are simple to use and best for everyday events such as family gatherings. Some don't have manual controls for exposure and composition, limiting you to the camera's assortment of preset scene modes, as with subcompacts.

### *Superzooms*

Superzoom cameras are characterized by a very long zoom range--15x or greater, which is good for sports, travel, or nature shooting. They're generally bulkier and heavier than compacts and subcompacts. Some models have zooms as great as 30x.

### *Advanced point-and-shoots*

These cameras have a non-detachable lens but differ from basic models in that they have lots of manual controls, a hot shoe for an external flash, and support for RAW files. It's the lightest advanced type.

### *Mirrorless*

These cameras, which include Micro four-thirds models, accept interchangeable lenses, but they lack a through-the-lens viewfinder (in fact, most have no viewfinder). They're smaller and lighter than an SLR but usually larger than a point-and-shoot.

### *DSLRs*

DSLRs have the most features, with interchangeable lenses and the largest sensors for the best image quality in low light, and a through-the lens viewfinder. Controls are extensive. They're also the heaviest, most expensive cameras. Most SLRs are now able to capture HD-resolution video.

## **Types of Camcorders**

### *High-Definition (HD)*

HD or high-definition refers to a resolution of 1920 x 1080 pixels, 1440 x 1080 pixels, or 1280 x 720 pixels. The difference between the resolutions lies in the number of the pixels, with 1280 x 720 recording in the fewest number and 1920 x 1080 recording in the highest number.

### *Standard Definition (SD)*

This refers to camcorders that record at lower resolution than high-resolution camcorders. These typically record video at 720 x 480 pixels or 640 x 480 pixels.

### *Flash Memory*

With digital formats using Secure Digital (SD) or Memory Stick memory cards, the amount of video you can record at the highest quality level can vary. Flash memory doesn't have any moving parts, so it's more durable than hard drive memory, and can record and access media faster.

### *Hard Disk Drive (HDD)*

The large sealed drive built right into a camcorder that consists of a spinning disk on which data is written, erased, and rewritten over and over again. It stores the footage you record, much like a computer's built-in hard drive stores data on your computer. A larger hard drive means that you can record more hours of video.

## **Megapixel**

One million pixels. The more megapixels a camera has, the higher its maximum resolution — and the better its potential picture quality.

## **Image Sensor**

A digital camera's image sensing element. An image sensor's photo-capturing power is measured in pixels, and will usually be seen expressed in megapixels. The two most commonly found technologies used to capture digital images in today's cameras are **CCD** (charge coupled device) and **CMOS** (complementary metal oxide semiconductor) image sensors. Although both types have their unique strengths and weaknesses, neither one is inherently superior to the other. You can expect high-quality digital images from cameras using either technology.

## **Optical Zoom**

The ability to magnify a subject for close-ups, by adjusting the camera's lens assembly. The amount of zoom commonly varies between 3X and 20X, 3X being less range and 20X being considerably more. Optical zoom won't result in image degradation.

## **Digital Zoom**

The ability to magnify an optical image digitally, using interpolation. Digital cameras can come with quite high levels of digital zoom, but the image quality suffers noticeably as more digital zoom is applied.

## JPEG

An image coding system that processes picture information captured by a camera's image sensor and compresses it for storage on a memory card.

## RAW image format

A mode found on digital SLRs (and a few point-and-shoot models) that allows all the digital data captured by a camera's image sensor to be stored without first being processed or adjusted by the camera's image processor. The resulting RAW image files, or "digital negatives," can provide greater picture detail, allowing for advanced editing with specialized software on a computer.

## H.264 (AVC)

A standard for video compression, and is currently one of the most commonly used formats for the recording, compression, and distribution of high definition video.

## GPS-enabled

Also called "geo-tagging," this feature allows cameras and camcorders to automatically store information about the location where you shot your photos and videos.

## Memory

Digital cameras store the photos they take to some kind of memory. In nearly all cases, this will be some kind of removable media. Many cams also include a small amount of built-in memory — enough to let you capture a few extra shots if your memory card fills up, but not enough for regular everyday shooting.

How much can you store?*			
Card Capacity	Music (MP3)	Photos (5 MP)	Video (@ 384kbps)
16GB	4,000 3.5 minute songs	10,400 photos	64 hours
8GB	2,000 3.5 minute songs	5,200 photos	32 hours
4GB	1,000 3.5 minute songs	2,600 photos	16 hours
2GB	500 3.5 minute songs	1,300 photos	8 hours

\*Approximations: results will vary based on file size, resolution, compression, bit rate, content, host device, pre-loaded files and other factors.

# ***GPS***

## **GPS**

GPS, which stands for Global Positioning System, is a navigational system designed and operated by the U.S. Department of Defense. Coded satellite signals from three or more GPS satellites are processed by your vehicle's navigation computer every second, which then calculates the vehicle's velocity and geographical location.

## **Types of GPS Units**

There are multiple types of GPS units designed specifically for different types of transportation. There are units designed for automobiles, motorcycles, trucking, hiking, jogging, boating, and flying.

## **Bluetooth®**

Bluetooth wireless technology in GPS navigators lets them connect to compatible cell phones for hands-free dialing and receiving of calls. Not all cell phones are compatible with all Bluetooth devices.

## **Points of Interest (POI)**

Points of interest are specific types of destinations found in GPS navigation devices. Typically, they are divided up by category, such as dining, lodging, gas stations, parking areas, emergency services, local attractions, sports venues, and so on.

## **Route Optimization**

Route optimization is how the GPS device determines the best path between multiple destinations on a single trip.

## **Traffic-ready**

The ability to detect and map traffic congestion along a route is a key feature, as traffic can severely impact the time it takes to get to a destination. Many devices can utilize one or more traffic-information services, typically through a special additional antenna or receiver. Subscription fees often apply for traffic-information services.

## **Voice Commands**

Voice-command functionality allows the user to access the GPS device without touching the screen. In some cases, the device will recognize simple voice commands, such as "home" and "work," or perhaps "last" for the most recent destination entered. Advanced GPS models recognize spoken words and letters so an entire address can be entered without touching the screen.