

Camcorder - A Portable Video Camera

Camcorders are portable devices for electronically recording video and audio through an in-built recorder unit. They differ from the previous units in which the recording and audio devices were separate. Today, a camcorder is a combination of video camera and a video recorder.

Previously, companies such as Sony, JVC and Kodak, etc. used analog video tapes. Since 1990 the digital tape came into use and three years hence, the storage tapes were being replaced by optical disks, hard disk drives and solid state memory. Camcorders, which do not use magnetic tapes, are called `tape-less` while those using two different media, like HDD and Memory card, are called `Hybrid Camcorders`.

Technological advancement has miniaturized the large cameras on specially mounted trolleys to portable video cameras and recorders for broadcasting images. This transition started in 1982 when JVC and Sony released the first professional camcorders. The Betacam, designed by Sony, slowly gained popularity and became the standard device for both news gathering and video editing. This was followed by Betamax in 1983 - the first consumer camcorder. At this stage, they were bulky and generally rested on the user's shoulder during recording. Even today most camcorders are designed for right-hand users with very few possessing ambidextrous ergonomics.

Both JVC and Sony started improving the quality of camcorders which led to the development of digital devices in 1990. These had cassettes even smaller than the 8mm media allowing further reduction of size of tape transport assembly. The digital variety further improved the audio and video quality over the best analog camcorders. With the advent of digital models, the market has grown substantially being facilitated further by its price and size reduction. Today a device fits in the palm and is sold at a retail price of less than \$150.

Camcorders comprise of three basic components : lens, imager and recorder. The lens solely focuses and gathers light on the imager. The imager is the eye of the camcorder which converts captured images into electrical video signals. The recorder encodes the video signals into storable form. The lens offers professional control of all major optical functions such as aperture, shutter speed and focus, etc. The recorder function is responsible for writing the video signal onto a recording medium (magnetic video tape).

Camcorders are normally classified by their storage device. The highest quality digital format such as Betacam and Mini DV, etc., suffer from little generation loss during recording, dubbing and editing. In analog recordings, noise and bandwidth issues relating to cables, amplifiers and mixers are a problem while in digital connections such problems are minimized.

However archival problems continue to affect both analog and the digital varieties. They are both prone to tape format deterioration over time. This is more acute in the digital recordings where large data base is permanently erased owing to deterioration and restoration is very expensive. One of the advantages in analog devices is that the recording may be usable even after the media, in which the data is stored, suffers deterioration.

Consumer camcorders emphasize the basic qualities such as easy usage, price and portability rather than technical performances. Such units offer a wide range of I/O operation but lack various menu settings, video exposures, gain controls and sound level management. For beginners, basic recording and playback facilities are emphasized. Today a personal computer, with a modest configuration, can perform digital video editing with software available in the market.

Camcorders have a plethora of usage in electronic media ranging from electronic news organizations to TV / current affair production. They are invaluable for initial video footage in locations away from the distribution infrastructure. Events which have scheduled set timings, such as official press conferences, use camcorders extensively. They are also used for covering personal events such as weddings, birthdays and other special family gatherings.

Even in the political arena, camcorder is used to film events which have a bearing on the subject. Protesters from various fields, such as animal rights, tax, anti-globalization, war and police, use camcorders to record and film such events which have wide social and historical ramifications. Even some judicial decisions are based on video footages exposed by such devices. They are also used in low budget films, ad shoots, tv shows and for academic film making, etc.

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