

High definition video, view of 2005

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Note:

This article was written in 2005, as both BluRay and HD-DVD were unavaible. The content is therefore highly irrelevant with respect to today's problems. Nevertheless, I think my thoughts from 2005 are quite (historically) interesting, so I decided to leave it unchanged (except for this note).

1. General

In a setup like the above described, there is a bottleneck: the resolution. The NTSC, and later, the PAL TV standard were established in the 1950s and 1960s. (Strictly speaking, this is wrong: NTSC and PAL denotes how the color information is encoded, not the parameters like the number of lines etc. However, by convention the traditional parameter values are referred to as "NTSC" or "PAL".) While the sound of a setup like the above describe is at least equal to all but the very best cinemas, the resolution is not really adequate. Even the simplest digital camera, and, since some time, even the cameras of camera-equipped mobile phones, provide higher resolution. A visit to "any" local movie theater will also confirm this. Fortunately, improvement is on the way: [HDTV](#). HDTV comes in three flavors:

- [720p](#) (1280 x 720 pixels in [progressive scan](#)),
- [1080i](#) (1920 x 1080 pixels, [interlaced](#),
- [1080p](#) (1920 x 1080 pixels, [progressive scan](#),

all in aspect ratio 16:9. The frame rate may be different — a movie fan like myself find it slightly disappointing that 24 pictures per second is not preferred, but the NTSC/PAL-compatible 50/60 frames per second.

In the US and in Japan, regular TV transmissions in HDTV already takes place. In Europe, there have some test transmissions. The German pay-tv provider [Premiere](#) has announced three HD-Channels (documentation, sport, movies) for November 2005. However, many details are unclear. However, for a movie fan like myself, high-quality movies for purchase on a "DVD-like medium" is of course the first priority. This is, to a certain extent, already reality:

In the Internet, there are many places where HDTV-demos can be downloaded: for example the Windows Media (9 or 10) from [Microsoft](#) and from [DivX](#). There are several stunning demos, both in 720p format and in 1080i/1080p format. They can be played on a powerful PC. There are also some DVD's in Windows Media format available. The first (?) was the [Terminator 2 Ultimate Editon](#). Unfortunately, this shows the [Digital Rights Management \(DRM\)](#) biting, prohibiting play unless you are in the possession of a North-American IP-number!

Later, the [IMAX Corporation](#) released a number of attractive IMAX movies (or rather, documentaries), in both 720p and 1080p format (Amazon, Stormchasers, Journey into the Amazing Caves, Discoverers, Dophins, The Living See, Step into Liquid (Location-based DRM protection), Coral Reef Adventure, Speed, The Magic of Flight). (Search on [amazon.com](#) for "wmvhd".) These are only available in "[Region 1](#)", but can be imported

from any international Region-1 store.

In France, (and only there!!) the [Taxi 3](#) movie is available in High-Definition. That version, almost surely deliberately, comes without non-French language versions or even subtitles!

[High-Def](#) has several attractive movies available as WMV-HD. They contain two 5.1 sound tracks, in German, *and* in English. The quality is, in general, stunning. (The site also contains several good technical articles, although their admiration for Microsoft is annoying.)

Using a highly proprietary format like WMV from Microsoft is of course a problem. Through the use of [Digital Rights Management \(DRM\)](#), Microsoft can, with its license policy, decide on who can make a player and who can not. For example, a Linux player, or more generally, a free software player appears not possible. However, to envision commercial HD material without heavy restrictions is probably naive.

1.1. My HTPC

Presently, HD material can only be reproduced on a, fairly "fat" PC (2.4 GHz Processor etc according to Microsoft, more according to High-Def.) (Often, the term HTPC ("Home Theater PC") is used.) This is my (present) HTPC:

- AMD Athlon 1800 XP (1533 MHz)
- Motherboard ASUS A7V333 with 1 [GiB](#) RAM
- Sapphire ATI Radeon 9600XT Ultimate Edition 128 MiB (passive cooling)
- Creative Soundblaster Audigy 2 ZS (24 bit, 192 kHz, 7.1 channels)

Despite of being far below the requirements for CPU-Power, the HTPC manages to reproduce the 720p material described above in very satisfying quality.

The video card is connected to the Yamaha receiver using a Y/C (S-Video) connection, and with the projector using a 7.5 meter DVI-HDMI cable. (I first tried a cheap (10m) cable, but this caused severe picture disturbances, in particular in blue.) There is a digital SPDIF coaxial audio cable from the sound card to the Yamaha receiver, as well as an 8-wire analog cable for analog sound to the analog multi-channel inputs of the Yamaha. Unfortunately, it is not possible (nor desirable) to output the 5.1 (or 7.1) sound from the WMVHD-Movies through the SPDIF digital output. All channels are connected with hum-suppressing transformers (from car-hifi) to a special connection box, in detail described [here](#).

The picture (and sound) of this setup is simply stunning...