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High Definition
High Definition is this years' buzzword in the UK. More and more DVD players are being produced capable of outputting DVI & HDMI. Pure quality 5.1-surround sound will also be available using the same HDMI cable. Japan and the USA are already up and running with High Definition TV available via satellite or cable. There is even a small selection of high definition disc material available Even Sky has announced plans to launch HDTV circa 2006.

What is HDMI?
High-Definition Multimedia Interface (HDMI) brings the relative advantages of DVI and iLink into one industry-supported, consumer product. HDMI is an uncompressed, all-digital audio/video interface. The format is supported by a consortium made up of the lead players in the Electronics industry (Matsushita, Sony, Hitachi, Philips, Thomson, Toshiba and Silicon Image). HDMI provides transmission of digital television audiovisual signals from DVD players, set-top boxes (e.g. Sky) and other audiovisual sources to compatible TV's (Plasma, LCD & CRT), Projectors and other video displays in development. For the full specification see: -

http://www.hdmi.org/download/HDMI_Specification_1.1.pdf

However, going pure digital does not guarantee you a good picture or sound. While there may be no loss during transmission, if the signal was poorly constructed to start with it, is still going to be poor when output. i.e. cheap DVD players with DVI / HDMI connections are still cheap DVD players! Old seventies cop shows on Sky will still be in standard definition!

What is HDTV
HDTV's can operate up to the highest picture quality (720p, 1080i) with a widescreen 16:9 aspect ratio. Current European PAL television offers a resolution of 576 lines, each 720 pixels wide. HDTV at its best shows 1080 lines of 1920 pixels each, leading to over 2 million pixels, an almost 5-fold increase.

With the current analogue system, TV images are created by interlace scanning, which uses two fields of alternating horizontal scanning lines (288 lines per field) to form a full picture. This picture is referred to as ""576 interlace", or 576i.

With HDTV the same technique can be followed by providing two fields of 540 lines each (1080i). As an alternative, HDTV can also offer signals of complete screens, so-called progressive scanning. Here, a full frame of 720 lines (720p) fills the screen from top to bottom, eliminating lines altogether so the picture has a more film like feel.

What do you need to get HDTV?

The program must be transmitted in high-definition. In Europe, Euro1080 is the first HDTV channel on air by transmission over satellite. At the consumer's home, the signal that is broadcasted via satellite must be picked up by a satellite dish. That signal is then sent through an HDTV-receiver. This is a separate set-top receiver, capable of handling the large amount of data offered, available via this website.

In the UK BSkyB has recently announced that it proposes to launch **high definition** programming in 2006. A recent quote from Home Cinema Choice reads as follows: -

*"Some of the information BSkyB revealed during a recent presentation to the Digital Interoperability Forum in Brussels seems pretty positive. For instance, BSkyB apparently announced that its service and HDTV decoder box will support BOTH 720p/50Hz AND 1080i/25Hz **high definition** formats, rather than just going with 720p as was previously anticipated. The choice of which HD format will be used for which HD programme is apparently going to be left to the platform's individual broadcasters.*

*However, it was when discussing how the HD signal would be delivered from the **Sky** decoder box to a projector/plasma TV/LCD TV that the bombshell emerged, as **Sky** stated that the vast majority of HDTV programming will only be viewable if carried via HDMI or DVI connections that support the HDCP digital rights protection system. In other words, if your projector or flat panel screen only has component video inputs or an HDMI/DVI jack NOT compatible with the HDCP system, it will not show the majority of Sky's HD services.*

***Sky** has long been troubled by how to stop people copying its broadcasts illegally, so perhaps we shouldn't be too surprised that it's jumping at the chance to use HDCP. But the ramifications of the decision are huge for us punters, as countless flat panel TVs and projectors that don't have the necessary digital connectivity are already proudly installed in people's homes, presenting the buyers with the nightmare scenario of having to upgrade by 2006 a screen they thought would last them for many, many years.*

There are also many screens/projectors in shops right now that don't have the necessary connectivity, so if you're thinking of buying one for Christmas – or whenever! – all we can do is stress in the strongest terms that you try and choose one with an HDCP-compliant HDMI or DVI jack."

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Hi Def DVD is Coming
DVDs were originally designed for a 135-minute Standard Definition movie and the movie is only slightly compressed in standard definition video (480 x 640 pixels, 30 frames a second in NTSC). At this rate a conventional 4.7 gig DVD holds a full-length movie and a few extras.

A conventional DVD cannot hold an entire Hi Def movie. A Hi Def movie would require 5 times the storage space! So the electronics industry started inventing the next generation DVD.

Two New DVD Formats! - Blu-ray DVD and High-Definition DVD

Some of us will be able to remember Betamax versus VHS, well it's happening again! A number of Hollywood movie studios, Paramount Pictures, Universal Pictures, New Line Cinema and Warner Bros. Studios, respectively have committed to high-definition DVD disc (HD-DVD) format as their choice of next generation DVDs. HD_DVD has the capacity to hold full high-definition film transfers.

However, Disney has pledged to back Sony's Blu-Ray format.

Both formats use a new blue laser and the disc looks the same. The blue laser is a shorter wavelength than a red laser used in conventional DVDs. This shorter wavelength allows the burning of smaller pits and lands and allows the tracks to be closer together. Blu-ray has more capacity of 23 gigabytes compared to 15 gigs on a HD-DVD disc, but both can double their capacity by recording on two layers.

Manufacturers developing the Blu-Ray format: -

- Sony
- Panasonic (Matsushita)
- Thomson (RCA and GE)
- Pioneer
- Sharp
- Samsung
- Dell
- Hewlett-Packard
- Philips

Manufacturers developing the HD-DVD format: -

- Toshiba
- NEC

It will take a good while for one of these two HD formats to become dominant. As of November 2004 Blu-ray has a slight edge, but Toshiba have just announced dual-layer capability (meaning High-Def & standard DVD on one disc and use of similar manufacturing techniques). Some Blu-ray HD-DVD recorders appeared in Japan in April 2003, but that's all there is. Those recorders are designed for home recording

only (not for playing pre-recorded HD movies). Eventually the recorders will be downward compatible and play your current DVDs and probably make them look better. Of course all the DVD players we have now will be obsolete when Hi Def DVD takes over. But before you throw your DVD player out, remember what happened with HDTV in the U.S. It was supposed to be available in 1989, yet it was not finalized until 1996 and did not appear until 1998. It hasn't made your TV set obsolete yet and it won't for a long time. Additionally, High Definition DVD players are unlikely to be widely available until 2006 and when they are you probable wont have that many titles to choose from for quite a while!! .

Is equipment purchased now future proofed?

Associated with any technology is a timeline. Even so called up-gradable technologies eventually require replacement, either because it is not cost effective to upgrade the item e.g. SCART/Component DVD Player to HDD/ DVD Recorder or the product is worn out! Early adopters of “Surround Sound” now know full well that technology evolves rapidly; Dolby brought us Pro-Logic, then AC3 (Dolby Digital), Pro-Logic II and now Pro-Logic IIx. Anyone who buys into these technologies at immediate launch will always do so but at a premium, it wasn’t long ago that a 42” plasma was £10,000.

Experience tells us that there is always something in the pipeline. Plasma rules the large flat screen market currently, but LCD is fast catching up. Data projectors are also evolving into “pure” Home Cinema items and probably won’t come into contact with a PC or Laptop! However in 2005, we could see an entirely new format , 3D-TV? A new type of material to replace plasma or LCD?

However, even if you have a DVI/HDMI ready HDTV, there are still other things to consider. DVD players, Home Cinema PC's and now Sky and possibly Playstation v.3 are a number of units vying for top “slot” on your TV. Some TV manufacturers have only just started putting 3 SCART sockets on their latest models!

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Here are some helpful tips when considering High Definition products: -

1. Early adoption will be at a premium on both the replacement hardware e.g. TV, DVD player, and Set-top box / Sky dish and with the latter expect to pay extra for premium high definition channels.
2. Are there products available now that suit your needs i.e. watching films from your current DVD collection or Sky and it's hundreds of channels?
3. Consider upgrading when the product in question becomes un-usable due to technology advancing.
4. How many film/program titles is there to play on your new HD DVD?
5. Be ready for those early adopter teething troubles should you decide to be the first in to the market place.
6. Be aware that although some equipment may seem that it is compatible with new upcoming signals does not always mean it will work; There is no substitute for purchasing something that is tried, tested and bug fixed!

7. There is never a correct time to enter the world of technology as you never know what's round the corner!! The one thing we do know is that there will always be small electronic company's launching connection solution products to combat forthcoming compatibility problems….