

# tips

## Home cinema

**So you've  
decided to  
buy a home  
cinema system?  
Good idea!**

You'll soon have a wonderful entertainment centre for all the movie lovers and TV watchers in your family with exciting surround effects for thoroughly immersing you in films and crystal clear sound on your drama and favourite sporting programmes.

Home cinema, though, can look as daunting as it does desirable. Even though it's fundamentally little more than a stereo with extra sound channels and a picture thrown in, the number of acronyms and abbreviations that are involved can make life seem very confusing. This stems from the fact that there's not just one surround sound format. So, do you need Dolby EX? What exactly is DTS? And is THX - whatever that's supposed to be - vital?

The good news is that life's not as complicated as it seems, which will become clear very soon. Make the right buying decisions and you'll have a system that will do justice to all the broadcasts you can receive and all the films you can currently rent or buy.

### How to improve your sound

You don't need a surround sound amplifier to improve the quality of sound while you watch TV. Simply by connecting a pair of interconnects to the line outputs of your DVD, TV or VCR to a spare pair of line inputs on your hi-fi system, you can dramatically enhance your viewing pleasure. For even better sound, follow steps 2 and 3 below.

#### 1. For Stereo Sound



**Two phono interconnects**

#### 2. For Pro-Logic Surround Sound



**Two phono interconnects**

#### 3. For Digital Surround Sound



**Digital interconnect**

## Formats

Home cinema sound started in earnest with Dolby Pro Logic. This coding system squeezes four channels of sound into the space normally reserved for two. In addition to stereo – left and right – it provides a centre channel (sometimes called a dialogue channel) and mono sound through two rear (effects) speakers. The system works well enough to deliver improved ambience and sense of movement over a stereo soundtrack. And it remains the most widespread system in use because it can be deployed to deliver surround sound with analogue TV broadcasts and good old VHS video.



Of course, like everything else, surround sound soon became digital and Dolby released its AC-3 technology, which everyone now calls Dolby Digital. This 5.1-channel system provided a real leap forward in performance. Instead of squeezing four channels into two, it delivers six discrete channels: front left, front right, front centre, rear left, rear right, and LFE or Low Frequency Effects, the “.1” channel that carries all the bangs and floor-shaking thumps to a dedicated low bass loudspeaker – the subwoofer. Because the tracks are discrete – there’s no need to ‘untangle’ them from a matrix – sounds moving around the soundfield are more distinct and localised giving better atmosphere and motion effects. The system also provides improved clarity and dynamics so, even if you’re buying on a tight budget, don’t look at a processor that doesn’t offer Dolby Digital: you’re wasting your money if you want to use DVD (or Laser Discs) as a source.

Dolby isn’t the only company with a finger in the digital pie. DTS - Digital Theatre System - is another six-channel system whose use isn’t as widespread but, its fans assert, provides better sound quality. If you’ve aspirations towards becoming a high-end video buff, make sure your electronics are DTS compatible.

Nothing stands still in the consumer electronics world and both systems have, of course, been enhanced in recent years. Dolby has introduced its EX format while DTS launched ES. Both “extended surround” systems provide a rear centre channel and are, importantly, backwards compatible.

We’ve not yet mentioned THX: that’s because it’s not a coding system but a set of standards defined by Lucasfilm, the “Star Wars” people, to make sure that cinemas and home cinemas provide the same level of sound performance as that heard by the guys who mix films in the studio.

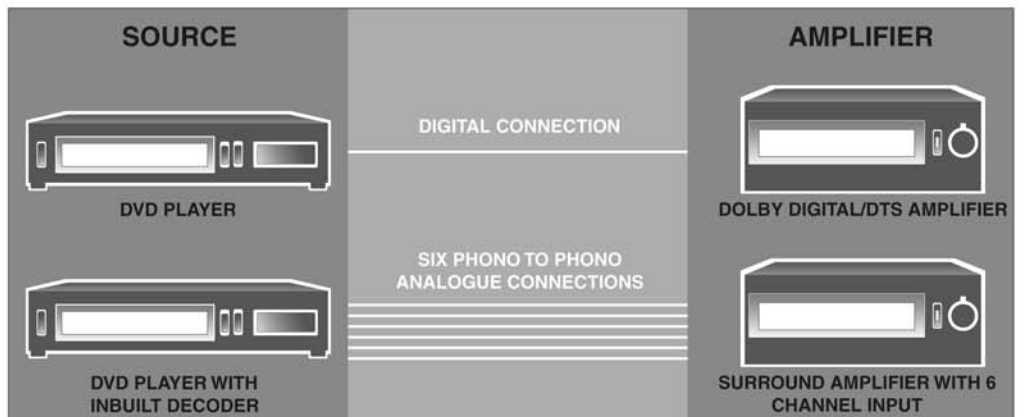
If you want the finest home cinema performance, some would say, you need to buy equipment that is THX certified. Be warned, though, that you’ll generally pay top dollar for THX-approved gear. THX, too, now has variants – Ultra and Select – to cope with advances in Dolby and DTS formats.

In short, though, systems offering Dolby Digital and DTS capability will be sufficient to see most video buffs comfortably through the next few years even though nobody can say for certain what is around the corner. At the Consumer Electronics Show in Las Vegas in 2001, the world’s largest trade showcase for consumer electronics equipment, one demonstration featured a 10.2 channel system showing ‘what was possible’ with surround sound. However, the maker of the amplifiers used in the demo pointedly remarked that some people have trouble accommodating two loudspeakers in their room, let alone 7.1 or 10.2. So don’t hold your breath for mainstream mega-channel systems arriving just yet!

And what of Dolby Pro Logic II? This simply allows better processing of stereo and Dolby Surround program material in 5.1 channel systems. Its improved decoding techniques (over plain old Pro Logic) provide a more convincing presentation of ‘legacy’ material with enhanced image stability.

## How to get digital surround sound

At present, none of the signals received through your aerial, satellite or cable are compatible with either Dolby Digital and DTS. To take advantage of digital surround sound, you need a DVD player and a suitable digital decoder. Many higher end DVD players come with these built in. This means that, for those who already own a surround sound amplifier with a 6 channel input, you don’t need to splash out on a new amplifier.



## So what are all these connectors?

There's a distinct pecking order in video connections – and the differences between them can be very noticeable. (And that's ignoring the differences between different makes of the same type of cable.) Always use the best connections your equipment offers, and bin those cables that came in the box with the equipment: replace them with pukka leads from a specialist cable manufacturer.

SCART cables are commonly used in AV set-ups but be warned that not all SCART cables are the same: not all of their 21 pins, which can carry video, audio and data signals, might be connected. For example, if your VCR is connected to your TV with a SCART cable that doesn't have pin 9 wired, the TV won't switch automatically to its AV input when you play a tape on the VCR.

Broadly speaking, composite video cables – generally a single cable with phono plugs (usually coloured yellow) where the various signals all pass down the same two wires – sit at the bottom of the performance ladder while component connections, in which each signal has its own conductor, are the best. You might not notice the difference with a VCR, where the video quality is nothing exceptional, but you will severely compromise the significantly enhanced image quality of a DVD player if you use the wrong connection or poor quality cables. Do remember that S-Video cables provide high quality video but do not carry any audio signal – a fact that has tripped up many budding videophiles – so budget for audio cables as well.

All these considerations, of course, are academic if you don't have appropriate connections on your TV or AV decoder/amplifier. It's no use, for example, using the S-VIDEO output on your DVD player if your AV amplifier or TV doesn't have an S-VIDEO input. If that's the case, go for the best connection that's common to them all and buy the best cables of that type. If you have to use component connections, keep the cables as short as possible.

Achieving the best sound quality in systems that use a Dolby Digital/DTS equipped amplifier is less complicated: simply connect its audio input to the DVD player with an appropriate digital cable and you won't get the benefit of the Dolby Digital soundtrack. If you don't have a digital AV amplifier, use the player's two-channel analogue output, which will still provide a Dolby Pro Logic surround signal.

Finally, to get the most from your home cinema system, take a little time to read through the manuals provided with the equipment. A few moments checking what all those knobs and switches on the amplifier do, and which of those sockets need a cable plugging into them will save hours of frustration!



SCART PLUG



SCART SOCKETS



PHONO PLUGS



PHONO SOCKETS



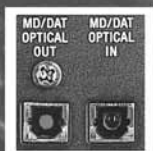
S-VIDEO PLUG



S-VIDEO SOCKETS



OPTICAL PLUG



OPTICAL SOCKETS



COAXIAL PLUG



COAXIAL SOCKETS

## Glossary

### Active

A component with a built in amplifier, which takes a line level input.

### Binding Post

A high quality speaker terminal with threaded collar for gripping bare wires and sometimes a socket to take banana plugs as well.

### Dynamic range

The range, in decibels, between the largest and smallest signals reproduced by a hi-fi.

### Nicam

CD-quality digital stereo television sound transmitted alongside the picture.

### Passive

A circuit or component which does not amplify the signal. Introduces very little distortion.

### Power amplifier

The part of an integrated amplifier which supplies power to the speakers, but can be separate and can be used with a preamplifier.

### Preamplifier

The control part of an amp. Built into integrated amps, but can be separate and used with power amp or active speakers.

### Receiver

An amplifier with a radio built in.

### Shielding

Prevents the magnetic field generated by most speakers from affecting picture quality.

### Six-channel input

Many DVD players now have built-in Dolby Digital decoders. To take advantage of these they need to be connected to a home cinema amplifier with a six channel input (one input for each surround sound channel).

### Watt

Unit of power. More watts mean more power, but how loud a system sounds also depends on speaker sensitivity and room size.

### Widescreen

More and more TV programmes and nearly all DVD discs, are shown in widescreen format. This can vary from 14:9 (a compromised ratio used by TV broadcasters) to 16:9 which is the ratio used on widescreen TV sets and most DVD's. Conventional 'square' TV's are 4:3.

## Setting up a home Cinema System

Setting up a home cinema system isn't too dissimilar to setting up a hi-fi. It's also just as vital to do the job properly if you want the best sound.

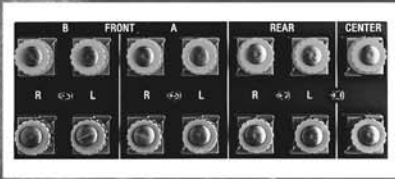
Start by deciding where the TV or screen is going. The front (left and right) speakers need to be placed either side of that, about 1.5m away from it. The centre channel should be as close to the screen as possible – either directly above or below it. If you can place it as near to the same height as the left and right speakers, so much the better. The rear speakers should be behind the spot where you'll sit while watching: the left on the left of the sofa, as viewed from behind, the right on the right, and the rear centre (if you have one) in the middle. If your seating is really close to the rear wall, try placing the rear speakers alongside the seat but pointing backwards. And if you have to compromise on speaker positioning, make sure it's with the rear speakers, which aren't as important as the fronts.

Subwoofers: "stick 'em anywhere," say some pundits, "because bass isn't directional so you can't tell where it's coming from." Others disagree so it's worthwhile trying them in several different places in the room to see where you think they work best. Don't just listen to the bass: listen to the whole sound and judge where it seems the most cohesive and 'together'.

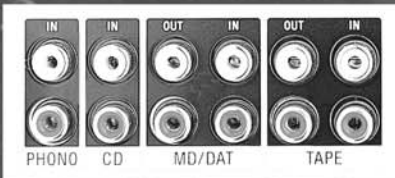
One set-up element that people often ignore is where to place the DVD player, video, amplifier and so on. You might want to show them off by parking them under the TV but that's forgetting that all these items have displays and lights that can distract you from the picture you're watching. If you can, place them out of your line of sight – but not behind a cupboard door that will stop the remote controls working!

Like hi-fi components, AV electronics are sensitive to vibration so it's always advisable to mount them away from any loudspeakers and on a purpose built equipment rack. It will also help with ventilation: some of those six-channel amplifiers can get a tad warm when they're cranking out *The Matrix* so loud that the whole street can hear!

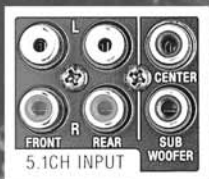
All your electronics and speakers will need connecting together and, as with a stereo system, cable quality affects the sound you'll hear. Go for the best leads you can afford. Pay particular attention to the cables that carry video signals: some folks won't notice a slight imbalance or lack of quality in the sound but nobody needs to be an expert to spot a problem or fall-off in quality in a TV picture.



SPEAKER BINDING POSTS



ANALOGUE INPUTS



5.1 CHANNEL INPUT



DIGITAL

DIGITAL INPUTS

## A typical surround sound set-up

