

Surround sounds

Can you really reproduce cinema sound in your own home? We look at systems that try

The thrilling soundtrack of *Apocalypse Now* adds hugely to the action on-screen – so imagine yourself in the centre of that cauldron of sound. A home-cinema system aims to create such an effect by pumping sound from speakers placed round your room, rather than just the TV.

Prices of home-cinema kits have fallen since our test a year ago and you can now pick up a Best Buy for just over £100. For this you get a DVD player, a built-in receiver and six speakers. Called 5.1

systems, they come with cables and are usually easy to set up.

If you want fewer trailing wires, you can go for three speakers (2.1 systems). These use electronic processing and audio conjuring tricks to create a pseudo-surround sound. However, we've yet to hear a 2.1 system that successfully mimics proper 5.1 sound. They tend to produce a wall of sound, deep with bass.

You can use home-cinema kits to listen to CDs, but the acoustic demands of films

We've yet to hear a 2.1 system that successfully mimics proper 5.1 sound

and music are different. Surround systems tend to be bass heavy – fine if you like drum and bass but probably not subtle enough for lovers of classical music.

For the best stereo or surround sound, choose separates. You can mix different brands of speakers, amplifier and DVD player. You can buy a Best Buy DVD player cheaply (our latest, the Sony DVPNS15, is £45) but it's worth spending as much as you can on speakers – usually the most crucial part of a home-cinema set-up.

What you should look for

USB CONNECTION

Some kits can play back MP3 tracks from a USB memory stick (pictured). This is handy if you



keep your music collection as MP3s

TUNER

All the kits have an FM radio tuner, but the Sony DAV-DZ210D (3) is the only model on test that also comes with DAB, giving you more stations

CABLE LENGTH

If you want your system in a large room, check the cables are long enough. Cables to rear speakers, placed furthest from the main unit, are especially important. Most separates don't come with cables

RADIO DATA SYSTEMS (RDS)

Kits tend to offer only a simple RDS function showing the name of a radio station. However, if you buy separates, the receiver will usually offer more information, such as the type of programme broadcast and scrolling text

AUTO SET-UP

This takes much of the pain out of getting the best sound balance from a system. The kit bounces sounds from each speaker to a microphone placed where you expect to sit, measuring the ideal sound delay and volume for each speaker



POWER OUTPUT

The higher this is, the louder the system – but bigger doesn't always mean better. Most claim around 100 watts. The Best Buy Philips kit (1, p48) has a power output of just 16 watts, yet is one of the best-sounding kits





1 KIT

68% Philips HTS3100 £130

Our panel of experts loved this super DVD player with built-in receiver and 5.1 speaker kit. It's the best kit for adapting to the different demands of stereo and surround sound.

The surround sound is well balanced, while the stereo, although lacking some bass, still sounds good, especially for pop CDs.

The Philips HTS3100 is a bargain at this price, although it doesn't have RDS or a headphone socket and the DVD player doesn't have slow motion. It's available at Argos and Currys.

WATCH OUT Don't place the central speaker on top of a conventional TV. The magnet inside the speaker is not well shielded and could cause the TV picture to distort.

Cheapest store Argos and Currys **Main compatible disc formats** DVD-R, DVD+R, DVD-RW, DVD+RW, CD-R, CD-RW, MP3-CD, MP3-DVD **Tuner presets** 60 **Speaker cables** Front 5m, rear 15m

WHICH?
BEST BUY

2 KIT

66% Sony DAV-DZ111 £150

The automatic set-up feature that comes with this kit takes the pain out of finding the right balance for the speakers. The picture quality from the DVD player is great and the speakers pump out a really good surround-sound effect.

Both Sony Best Buy kits use very little power in standby. This model uses just 0.2 watts, which is well below the recommended level of 2 watts.

On the downside it's pretty average for listening to stereo music and the bass can be a little weak.

The Sony DAV-DZ111 is available from Argos and Currys. **WORTH KNOWING** It is very similar to the other Sony Best Buy (and is £60 cheaper) but doesn't have a DAB radio.

Cheapest store Currys **Main compatible disc formats** DVD-R, DVD+R, DVD-RW, DVD+RW, CD-R, CD-RW, MP3-CD, MP3-DVD **Tuner presets** 30 **Speaker cables** Front 5m, rear 16m

WHICH?
BEST BUY

The picture quality from the DVD player on the Sony DAV-DZ111 is great



3 KIT

66% Sony DAV-DZ210D £210

This Sony kit includes a DVD player with built-in receiver plus a set of 5.1 speakers. The DVD player is a cut above most other models, thanks to superior search and slow-motion picture quality.

Its features also include an automatic speaker set-up option and very low power consumption in standby.

Although it is pretty average for listening to stereo music, the Sony DAV-DZ210D still boasts a realistic surround effect. It's available from Argos and Comet.

WE LIKE This is the only model we tested that has a DAB tuner, which allows you to listen to digital radio and the dozens of extra stations that it offers.

Cheapest store Comet **Main compatible disc formats** DVD-R, DVD+R, DVD-RW, DVD+RW, CD-R, CD-RW, MP3-CD, MP3-DVD **Tuner presets** 30 **Speaker cables** Front 5m, rear 16m

WHICH?
BEST BUY

Worth tracking down

These Best Buys from previous tests aren't widely available on the high street but are available online. See 'Jargon buster', p46, for an explanation of terms



DENON DHT-1356XP £260 ONLINE Easy-to-use DVD player, separate receiver and the 5.1 speaker set features an active subwoofer and great surround-sound effect. **SCORE 71%**



PANASONIC SC-HT855 £265 ONLINE You can connect an MP3 player to this model, which is another DVD player with built-in receiver and 5.1 speaker kit. Bass can be overpowering in surround mode, though. **SCORE 65%**



PIONEER DCS-353 £230 ONLINE This can play music stored on a USB stick. There's no digital audio input, though, so you can get surround-sound only from the supplied DVD player. There's also a built-in receiver and 5.1 speaker set. Power output is low but sound is good. **SCORE 65%**

Don't Buy

A home-cinema kit for £86 may sound like a bargain. This one isn't

When a manufacturer can't even colour-code speaker cables and sockets correctly, you know you're in trouble.

Sure enough, the Daewoo HC-6120X kit (8 in table, p48) is bereft of most standard features, horribly power hungry and cursed by a disturbingly noisy fan. This awful piece of kit has few redeeming qualities, so for heaven's sake don't let the price (£86 online) fool you into thinking 'potential bargain'. It is not.



Jargon buster

Subwoofers, tweeters and DAB – read our easy-to-use guide to see what they mean

■ **5.1** Refers to the number of speakers in a kit. Five surround-sound speakers plus a bass speaker, known as a subwoofer. A 7.1 system means you can add an extra two speakers for an enhanced effect.



■ **2.1** For the clutter-conscious, 2.1 systems do away with the rear and centre speakers, leaving only the subwoofer and two front speakers.

■ **DAB** Digital audio broadcasting (digital radio) gives you access to a huge range of stations. Be warned – it isn't yet available in all areas. See www.digitalradionow.com to find out where it can be received.

■ **DIGITAL AUDIO INPUT** There are two types of digital connection – coaxial (wire) and optical (fibre optic). If a kit or receiver has a digital input, you can feed a surround-sound signal into the amplifier from a source



other than the supplied DVD player – for instance, a Sky+ box.

■ **DOLBY DIGITAL** 5.1 multi-channel audio standard, used on most

DVDs and some digital broadcasts. All the kits and receivers that we tested can decode and process a Dolby Digital signal.

■ **FREQUENCY** This is the pitch of a signal or sound. A flute produces high frequencies while a bass drum produces mostly low frequencies.

■ **RDS** The radio data system found in many tuners which gives extra information for display, such as a station's name.



■ **RECEIVER** This is another name for an amplifier that has a built-in radio or tuner.

Those in home-cinema equipment are called multi-channel receivers – channel effectively meaning speakers.

■ **SATELLITE SPEAKERS** The smaller speakers placed round the room.

■ **SUBWOOFER**

A speaker that produces low-frequency sounds, specifically the ground-trembling bass.

An active subwoofer has its own amplifier and power supply and usually produces better sound.

■ **TUNER** The radio built into an amplifier.

■ **TWEETER** Part of the speaker that produces high-frequency sound.



1 RECEIVER

75% Denon AVR-1907 £300

Any of the excellent multi-channel receivers in the table (p48) are difficult to fault. They all support up to 7.1 surround speakers and feature multiple digital audio connections, advanced RDS and FM/AM tuner bands.

But the outstanding Denon AVR-1907 just shades it. It copes brilliantly with both stereo and surround sound via 5.1 speakers.

Features include automatic speaker set-up, an on-screen display for your TV and 56 tuner presets with decent reception.

Most kits have on-screen displays, but this Denon, the Marantz (3) and the Cambridge Audio (5) are the only separates on test that do.

It's available from Richer Sounds.

WE LIKE You can buy a tailor-made docking device for £70 that lets you plug in an iPod.

Cheapest store Richer Sounds **Tuner presets** 56
Receiver dimensions Front, rear & centre, 43.5x14.5x41cm **Digital audio inputs** Two coaxial and two optical



1 SPEAKER PACKAGE

77% Bose Acoustimass 6 Series III £550

This great set from Bose features the smallest satellite speakers of all the 5.1 separates packages.

However, this doesn't detract from outstanding surround and stereo sound quality. Like all the separates speaker packages, it features an active subwoofer that really enhances the deep bass effects.

Initial set-up can prove complicated thanks to some inscriptions on the back of the speakers that are difficult to read. It's available through specialist independent stores.

WE LIKE The Bose was the only speaker package in this test that comes supplied with cables.

Available Independents **Speaker dimensions** Front, rear & centre, 10x8x7.5cm **Subwoofer** 19x56.5x42cm

WHICH? BEST BUY

WHICH? BEST BUY

Worth considering



On a budget
DENON AVR-1707

£248 ONLINE This Denon receiver (2, p48) is a good choice if you're on a tight budget. It's almost identical to the Denon 1907 (1) except that power output is lower – and it's £50 cheaper. There are 56 tuner presets and the receiver is 43.5x15 x42cm. It was cheapest online at Hughes Direct for £248.

Setting up your home-cinema system

You want to ensure you get the best sound from your system, so here's our guide to where to put the speakers

In the ideal home-cinema world we'd all have a square living room with a Best Buy TV located centrally on one wall and the sofa placed centrally on the opposite side, as shown in our top diagram (right). Most living rooms don't conform to this, so our bottom diagram suggests some basic rules to follow to get good results from a system in a room that isn't an ideal shape.

FRONT SPEAKERS

Ideally one metre to the left and right of the TV, facing the sofa.

CENTRE SPEAKER

As close to the TV as you can – preferably directly below.

SUBWOOFER Ideally in the middle of the front wall. If not, place in the nearest spare corner.

REAR SPEAKERS

Place these at opposite corners of the room, to the side/rear of the main viewing position to give the impression that sound is coming from around the room.

Once you've located the surround speakers and cabled them to the amplifier, follow the instructions and program the system so it knows how far the speakers are from the viewer.

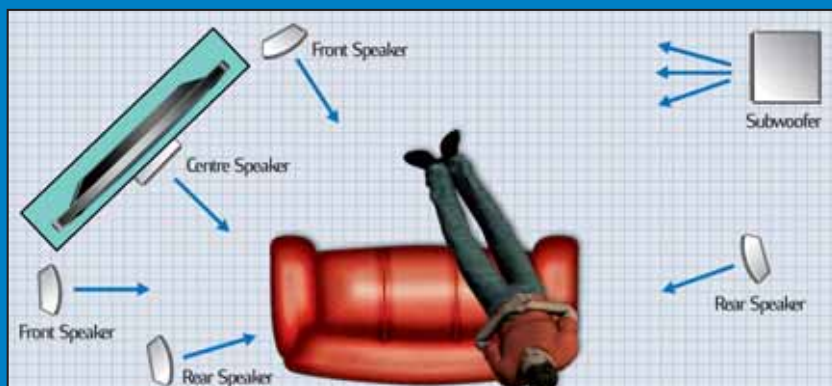
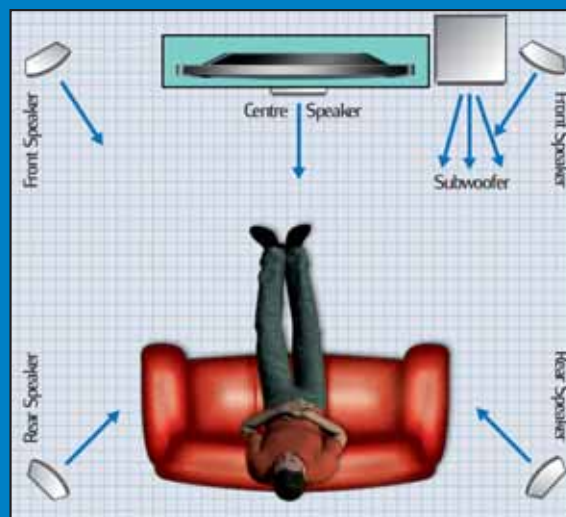
This should take only a few minutes but is important for realistic surround sound, otherwise you'll hear sound from closer speakers before that from further speakers.

You also need to set the speaker levels so that it sounds as though they're all at the same volume. To do this, sit in the main viewing seat and set the system to

fire a test tone to each speaker. Adjust levels until they sound the same.

As every room has its own layout and furniture that will affect sound, you'll need to tinker with the position of the speakers or adjust sound delay and volume.

If that sounds complicated, some models can be set up automatically (see 'What you should look for', p44).



Hints and tips

Some things to look out for when buying and using your kit or separates system

■ **CABLES** If you choose separates you'll normally have to buy cables (only the Bose Best Buy speakers come with them). Avoid the cheapest but steer clear of the most expensive, which can cost hundreds of pounds. Sound improvements are marginal at best.

■ **BUYING GREEN** If you're worried about climate change or big electricity bills, you might want to avoid separates. Multi-channel

receivers are power hungry. Add speakers and DVD player, and a separates system uses 150 watts compared with about 40 watts for a typical kit. The most energy-efficient kit, the Sony DAV-DZ210D (3 in table, p48), uses 0.1 watts in standby.



■ **PLUGGING IN** Attach cables to speakers, then the amplifier (when switched off). Doing it the other way can short your system.

■ **FINDING RADIO STATIONS** Many receivers have a button that automatically finds and stores stations. It's often worth doing this manually, as the automatic scan can be slow and inaccurate. The otherwise great Marantz receiver (3 in table, p48) was worst for auto-scan. In our test it took

more than six minutes to scan for all stations and only 40 per cent were properly tuned in.

■ **TV BROADCASTS** Freeview isn't broadcast in surround sound, but Sky has a fair few films in Dolby Surround and Dolby Digital. Sky and Virgin high-definition services broadcast some sport and films in 5.1. Many games consoles are compatible and most film DVDs are in surround sound.



Facts & scores

Testing facts we found

Limited surround

Our Best Buys are great kits, but they have one thing in common with the poor Daewoo Don't Buy – they don't have a digital audio input, so you get surround sound only from the supplied DVD player.

Wall mounted

The satellite (side and rear) speakers of all the kits, except the KEF and the Philips HTS 6510/05, can be wall mounted – although you have to buy the brackets separately.

Connect to TVs

All the receivers, apart from the two Denon models, have HDMI inputs and outputs. These can be connected directly to the latest high-definition TVs and DVD players.

Satellite speakers

All the speaker packages feature small satellite speakers which can also be placed on a book shelf. This Mordaunt-Short uses large front speakers for placing on the floor.

MODEL		SPECIFICATION									
		PRICE (£)	SPEAKERS	TUNER BANDS	RDS	ACTIVE SUBWOOFER	USB	AUTO SET-UP	TUNER	AMPLIFIER	STEREO SOUND
KITS											
1	PHILIPS HTS3100	130	5.1	FM/AM					★★★★	★★★★★	★★★★★
2	SONY DAV-DZ111	150	5.1	FM/AM	✓			✓	★★★★★	★★★★★	★★★★
3	SONY DAV-DZ210D	210	5.1	FM/AM/DAB	✓			✓	★★★★★	★★★★★	★★★★
4	SAMSUNG HT-XQ100	274	5.1	FM			✓		★★★★★	★★★★★	★★★★★
5	KEF KIT 100	900	2.1	FM/AM	✓	✓			★★★★★	★★★★★	★★★★★
6	SAMSUNG HT-Q100N	300	2.1	FM			✓		★★★★★	★★★★★	★★★★★
7	PHILIPS HTS 6510 / 05	380	2.1	FM/AM	✓		✓		★★★★★	★★★★★	★★
8	DAEWOO HC-6120X	86	5.1	FM/AM					★★★★	★	★★

MODEL	SPEC		WHICH? TEST PERFORMANCE					
	PRICE (£)	AUTO SET-UP	TUNER	AMPLIFIER	STEREO SOUND	SURROUND EFFECT	SURROUND-SOUND QUALITY	FEATURES AND CONNECTIONS
RECEIVERS								
1 DENON AVR-1907	300	✓	★★★★★	★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★
2 DENON AVR-1707	248	✓	★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★
3 MARANTZ SR4001	340		★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★
4 PANASONIC SA-XR700	490	✓	★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★
5 CAMBRIDGE AUDIO Azur 640R	600		★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★

MODEL	SPEC		WHICH? TEST PERFORMANCE			
	PRICE (£)	ACTIVE SUBWOOFER	STEREO SOUND	SURROUND EFFECT	SURROUND-SOUND QUALITY	EASE OF USE
SPEAKER PACKAGES						
1 BOSE Acoustimass 6 Series III	550	✓	★★★★★	★★★★★★	★★★★★★	★★★
2 ACOUSTIC ENERGY AEGO T-System	700	✓	★★★★★	★★★★★★	★★★★★★	★★
3 MORDAUNT-SHORT Avant ^a	750	✓	★★★★★	★★★★★★	★★★★★★	★★
4 KEF KHT 1005 + PSW1000.2	300	✓	★★★★★	★★★★★★	★★★★★	★★

^a Avant 904i (front), Avant 902i (rear), Avant 905i (centre), Avant 309i (subwoofer)

USING THE TABLES

We tested all-in-one cinema systems, from big brands and specialist manufacturers, plus a selection of separate systems. For separates (see receivers and

speaker packages tables), we paired amplifiers and speakers with lab reference equipment. The more stars the better.

Specification

Price For Best Buys we

give the cheapest widely available high-street price. Prices for other models are a guide to what you should expect to pay.

Prices for models available online only are in *italics*.

Speakers 5.1 systems

have six speakers supplied; 2.1 systems have three.

Test performance

Tuner How well the tuner picks up weak radio station signals and

eliminates unwanted signals and noise.

Amplifier Quality of the amplifier and ability to filter out unwanted noise.

Stereo sound Our expert view of sound quality when used as a stereo

WHICH? TEST PERFORMANCE						SCORE %
SURROUND EFFECT	SURROUND-SOUND QUALITY	PICTURE	FEATURES AND CONNECTIONS	SETTING UP AND TUNING	OVERALL EASE OF USE	
★★★★★	★★★★★	★★★★★	★★★	★★★★★	★★★★★	68
★★★★★	★★★★★	★★★★★	★★	★★★★★	★★★★	66
★★★★★	★★★★★	★★★★★	★★	★★★★★	★★★★	66
★★★★★	★★★★★	★★★★★	★★★	★★★	★★★★	63
★★	★★★	★★★★★	★★	★★★★	★★★★	56
★	★★	★★★★★	★★	★★★★★	★★★★	52
★★	★★	★★★★★	★★★	★★★★	★★★★	51
★★★★★	★★★★	★★★★★	★	★★	★★	37

RESULTS OF LATEST TESTS

FREE website access

Is a new 50-inch TV what you need?

There's more on these kits and separates online, where we'll also be publishing results for new Panasonic, Pioneer and Sony models in September.

If you want a big-screen TV as well, see our test results at www.which.co.uk/tvs which include a new 50-inch plasma TV from Hitachi (pictured) and two new 42-inch plasma TVs from Best Buy stalwarts

Panasonic.

For help in logging in to our website, see www.which.co.uk/loginhelp



		SCORE %
SETTING UP AND TUNING	OVERALL EASE OF USE	
★★★★★	★★★★★	75
★★★★★	★★★★	72
★★★★★	★★★★	68
★★★★★	★★★★	68
★★★★	★★★★★	65

		SCORE %
POWER CONSUMPTION		
★★★★★		77
★★★★★		74
★★★★★		74
★★		67

Contacts

Acoustic Energy 01285 654432
www.acoustic-energy.co.uk

Bose 0870 741 4500; www.bose.co.uk

Cambridge Audio 0845 090 2288
www.cambridgeaudio.com

Daewoo 0870 100 2525
www.daewooelectronics.co.uk

Denon 01753 680568; www.denon.co.uk

KEF 01622 672261; www.kef.co.uk

Marantz 01753 286969
www.marantz.com

Mordaunt-Short 0870 900 1000
www.mordauntshort.com

Panasonic 0870 535 7357

www.panasonic.co.uk

Philips 0845 601 0354; www.philips.co.uk

Pioneer 0870 600 1539; www.pioneer.co.uk

Samsung 0870 242 0303
www.samsung.com/uk

Sony 0870 511 1999
www.sony.co.uk

FIVE CINEMA-STYLE SYSTEMS TO BE WON

Win a home cinema kit and £200 of HMV vouchers

Worth £460

Become the envy of all your friends with our Denon DHT-1356XP home-cinema kit worth £260 and £200 of HMV vouchers

TO ENTER, ANSWER THIS QUESTION:

According to our report, what is a subwoofer?

- (a) Speaker that produces low-frequency sounds
(b) Frequency of dog bark (c) Type of disc format



To enter our competition online, go to www.which.co.uk/bestbuycompetition or send your entry on a postcard to 'Best Buy July 07', Which?, PO Box 44, Hertford X SG14 1SH. Include your name, address and postcode, daytime

phone number and Which? membership number (found on your Which? membership card as your user name).

Entries received by 25 July 2007 will be entered. Our competition is open only to current

Which? members. Only one entry per household. Usual rules apply.

Visit www.which.co.uk/bestbuycompetition or see Which?, June 2007, p49, for a full set of rules.

system. **Surround effect** Our expert view of surround-sound effect. **Surround-sound quality** Our expert view of sound quality in surround-sound mode. **Picture** Our expert view of DVD picture

quality. **Features and connections** Number and quality of system features. **Setting up and tuning** How easy it is to set up and adjust the tuner, DVD player and amplifier. **Overall ease**

of use Whether the instructions are clear, the remote easy to use, and how easy a system is to use once set up.

Score

This ignores price and

is based on:

Kits	
Performance	50%
Ease of use	35%
Features/connections	10%
Power consumption	5%
Receivers	
Performance	50%

Features and connections	25%
Ease of use	20%
Power consumption	5%
Speaker packages	
Performance	75%
Ease of use	20%
Power consumption	5%