

DVD recorders with extras

DVD recorders have displaced the trusty VCR in many homes, but why stop at a basic DVD when you can buy one with built-in hard drive and Freeview tuner? We pick all the Best Buys

A DVD recorder lets you watch movies just like a DVD player (see p58) but it allows you to record your favourite programmes, too. The quality of recorded pictures is far superior to anything you'll get on your old VHS, and DVD discs are much less bulky to store than video tapes.

DVD recorders can also play back CDs and connect to stereos or surround-sound systems, but they can be tricky to use, which is why we put such emphasis on this in our tests (see right). We reveal our Best Buys opposite.

We have also tested ten combination units, which fuse a DVD recorder with one or more other products – most commonly a hard-disk drive (see 'Jargon buster', opposite) that can store up to 125 hours of programmes, or occasionally a VCR. Buying a combination unit means your living room won't be dominated by a pile of silver boxes. On the downside, the multitude of functions crammed on to one remote control can prove daunting, but we found two Best Buys (see p64) with great features that are easy to use.

Combination units can store up to 125 hours of recordings on their hard drive



Inside our lab – the tests that identify Which? Best Buys

Picture quality

Our five viewing experts watch a series of movie clips and test patterns on pre-recorded and self-recorded discs to check motion, resolution and colour accuracy. Recordings are made mainly in standard-play (SP) mode – this fits two hours of recordings on one DVD disc. We check recordings in three- and four-hour modes too.

The HDD (see 'Jargon buster', opposite) on a combination unit should make recordings of the same quality as the DVD – but we make sure nothing has gone awry and check HDD in standard play, too. If there's a VCR on board, we'll check this, too. After watching some 400 scenes, we are ready to pick our Best Buys.

Ease of use

We assess each model using various everyday scenarios, ranging from installation and simple playback to the ease of making and editing recordings. The usefulness of the instructions, basic playing features, remote control and front-panel layout, plus advanced features, are all judged by our two ergonomic experts.



What you should look for

FREEVIEW TUNER

Some DVD recorders come with a built-in digital tuner. If you already own a Freeview box or an IDTV (see p44), this lets you watch one digital channel while recording another

FLEXIBLE RECORDING

This impressive feature makes sure the programme you record fits on to the disc. The recorder matches the length of the programme to the amount of space left on the disc by adjusting recording speeds



HDMI OUTPUT

A high-definition socket lets you connect to a compatible (HD-ready) TV. This doesn't mean you get HD-quality images, but occasionally it can lead to an improved picture. Only the Panasonic models showed an improvement in our tests

SURROUND-SOUND

There are two types of digital surround-sound connections – coaxial (wire, below left) or optical (fibre optic, below right). If you have a surround-sound system, buy a recorder with the same connections



MEMORY CARD SLOTS

Cards (types vary) from a digital camera can be plugged in so you can view photos or video footage on the TV and transfer them quickly and simply to DVD discs or the hard drive



1 DVD RECORDER

67% Panasonic DMR-ES15EB-S £170

This excellent model from Panasonic makes superb recordings in standard-play mode and maintains reasonable quality when recording in long-play mode (which squeezes three or four hours of recording on a disc).

Sound quality is average but, like all the other models on test, you can hook it up to a surround-sound system to improve it.

The Panasonic can record on almost every type of disc, including DVD-Ram, and is pretty easy to use compared with the other models on test for this issue. It's available from Argos, Comet, Currys and John Lewis.

WE LIKE The front panel is bold, bright and easy to read.

WHICH?
BEST BUY

Cheapest stores Argos and Currys **Tuners** Analogue **Scart link** Yes **Resume** Yes **VideoPlus** Yes **Scart 2 S-Video** Yes **Surround-sound output** Optical **HDMI** No



2 DVD RECORDER

67% Panasonic DMR-EZ25EB-S £230

This Panasonic is straightforward to use and is the only standalone recorder with a built-in digital tuner that we tested. It's similar to the other Panasonic Best Buy but with a few more fancy features – like a memory card slot, an HDMI socket and DV (Firewire) input, ideal for hooking up to a digital camcorder. The Freeview tuner features an eight-day EPG. It records on every DVD format going and is available from Argos, Currys and John Lewis.

WORTH KNOWING It's the only standalone recorder on test with a memory card slot. You can transfer images from a memory card to a DVD and vice versa.

WHICH?
BEST BUY

Cheapest stores Argos, Currys and John Lewis **Tuners** Analogue and digital **Scart link** Yes **Resume** Yes **VideoPlus** Yes **Scart 2 S-Video** Yes **Surround-sound output** Optical **HDMI** Yes



3 DVD RECORDER

67% Sony RDR-GX120 £150

Outstanding picture quality makes this Sony model the best standalone recorder on test for watching a rented movie. It also records well in standard play. However, there are a couple of niggles. Recorded picture quality in the four-hour long-play mode isn't as good as on the other Best Buys and despite the fine audio quality there are some discernible mechanical background noises. However, clear on-screen menus make up for the convoluted instruction manual and it's the cheapest Best Buy. It is widely available in high-street stores.

WORTH KNOWING This Sony model records only on +RW or +R, so shop for discs carefully.

WHICH?
BEST BUY

Cheapest stores Argos, John Lewis **Tuners** Analogue **Scart link** Yes **Resume** Yes **VideoPlus** Yes **Scart 2 S-Video** Yes **Surround-sound output** Coaxial **HDMI** No

The Sony RDR-GX120 is our cheapest Best Buy

Jargon buster

■ **HDD** This is the hard disk drive, the same as inside a computer. HDD can store recordings that are as good as broadcast TV and is as versatile as a DVD-Ram disc (see 'Disc types', p62). Halve the number of gigabytes (GBs) to get the number of hours of TV you can record on standard play. So a 160GB hard drive usually stores 80 hours of recordings.

■ **EPG** The on-screen electronic programme guide (EPG) provides TV programme and schedule information for the week ahead. You can access the Freeview EPG via a digital tuner.

■ **PVR** This combines a digital tuner with HDD. Recording is easy, thanks to the on-screen electronic programme guide. Simply highlight the programme of choice and press record.

■ **SCART LINK** This lets you record directly from the EPG of a compatible set-top box or integrated digital TV – like a PVR.

■ **RECORDING MODES** Different modes let you cram more on a disc. Modes vary between models, but generally standard mode (SP) fits two hours on a disc, long play (LP) fits four hours and extended play (EP) six to eight hours.

Problems to watch out for

Many of the models on test are power-hungry in standby mode

■ **SLOW TO REACT** Patience is a virtue and never more so than when trying to operate some



DVD recorders. Compared with VCRs and PVRs, many are slow to record, taking on average well over a minute to start recording on a new, unformatted RW or RAM disc. Worst is the sloth-like Sony RDR-GX120 (3), at over two minutes, while the sprightly Philips DVDR 3380/05 (7) takes a mere 22 seconds.

■ **POWER HUNGRY** Whether you're using them or not, DVD recorders consume a lot of power.

All the machines in the tables use about the same amount of energy whether they are playing a disc or simply sitting idle. Unlike the DVD players on p58, none of the recorders has an auto power-off function, and none uses less than the recommended European energy standard of 2 watts in standby mode. Worst offender by a mile is, surprisingly, the Best Buy combination model, the Sony RDR-



HX525 (9), which uses a stunning ten times the recommended energy standard. Look out of the window, Sony executives – yes, that is the sea level rising.

Disc types

There's a wide array of blank discs available – your recorder might not work with all of them

■ **DVD+R AND DVD-R** These are cheap but record only once. If you want to archive recordings rather than record over them, it makes sense to opt for these.

■ **DVD+RW AND DVD-RW** You can re-record many times on these discs, just as you would with a video tape. VR-mode DVD-RW discs can be edited (a bit like DVD+RW) but they won't play back on many machines.

■ **DVD-RAM** This is the most versatile option and works more like a computer hard drive, allowing you to play back the beginning of a programme while it's still recording. When you delete one recording from a disc, the machine reorders the remainder to eliminate gaps. However, it's incompatible with many machines.

■ **FORMATTING** The first time you use a new disc the DVD recorder will format it ready for use. This can make it slow to start recording (see 'Problems to watch out for, p61). Once a disc has been formatted it's usually quicker to start recording.

How much can you fit on your discs?

DVD recorders let you trade picture quality for recording time – the better the picture quality you opt for, the more space it will take up on the disc

Blank discs can store two hours of recordings in standard-play (SP) mode, providing images as good as live TV. Most recorders let you fit up to eight hours on a disc (see 'Recording modes', p61), but picture quality deteriorates the more you cram in. For instance, record the BBC series *A History of*

Britain in SP mode on the Panasonic ES15 Best Buy and you'll make it to the Battle of Hastings on one disc. Switch to long play (LP) and Robert the Bruce appears. Extended play (EP) gets you to the Civil War – but by this time both the picture quality and the king's head will be tumbling.



Worth tracking down

There are two outstanding models, both Best Buys in our last test, that are worth buying if you can find them on the high street or online

PANASONIC DMR-ES20, £200 This model comes with a built-in Freeview tuner and offers better long-play recording quality than any of the models on test here. It's available from Richer Sounds. **SCORE 72%**



SONY RDR-HXD710, £350 The 710 is a DVD recorder and single-tuner PVR in one box. It beats the pants off any of the latest recorders when it comes to sound quality. It is available online for around £350. **SCORE 72%**



PHOTOGRAPHY JOHN TRENHOLM, GETTY IMAGES

Facts & scores

Extra information from our DVD recorder testing team

Viewing photos

All the recorders and combis except for this Sony can be used to view photos stored on either CDs, Kodak picture CDs or DVDs.

MODEL	SPECIFICATION			FEATURES				
	PRICE (£)	SIZE (cm) (h x w x d)	RECORDING FORMATS	FREEVIEW TUNER	SCART LINK	VIDEOPLUS	FLEXIBLE RECORDING	SURROUND-SOUND DIGITAL OUTPUT
DVD RECORDER								
1 PANASONIC DMR-ES15EB-S	170	6x43x35	-RW +RW -R +R RAM		✓	✓	✓	Op
2 PANASONIC DMR-EZ25EB-S	230	6x43x35	-RW +RW -R +R -RW(VR) RAM	✓	✓	✓	✓	Op
3 SONY RDR-GX120	150	6x43x33	+RW +R		✓	✓		Co
4 LG DR198H	180	6x43x30	-RW +RW -R +R -RW(VR) RAM			✓		Op, Co
5 SAMSUNG DVD-R136/XEU	190	5x43x25	-RW -R -RW(VR)				✓	Op, Co
6 TOSHIBA DR-160-S-TB	130	6x43x28	-RW -R -RW(VR)					Co
7 PHILIPS DVDR 3380/05	130	5x36x33	-RW +RW -R +R			✓		Co
8 PROLINE DVDR700	90	6x28x30	+RW +R				✓	Co

Which system do you need?

Best Buys range in price from £150 to £350, so before you buy, use our guide to pick the right option

■ **THE NO-NONSENSE OPTION** If all you want to do is simply play back and record on to DVDs, go for a standalone DVD recorder. If you already own a set-top box or IDTV opt for a model with a built-in digital tuner so you can watch one digital channel while recording another.

■ **FOR MORE FREQUENT USE** If you want more space for storing recordings without having to buy extra discs all the time, it's well worth taking a look at the HDD option. If it has a built-in digital tuner, it's a PVR, which will make it easier and quicker to record programmes.

■ **FOR NOSTALGIA FANS** If you want to watch some of your favourite old video tapes as well as the latest DVDs on your new purchase, opt for a combination model that incorporates a VCR. With this option you can also easily transfer footage from your old video tapes on to DVD.

Choosing a DVD/VCR combo

These combination units are the easiest way of copying VHS tapes on to DVD, though quality could be lost. The Panasonic, which has flexible recording (see p60), will let you fit a three-hour tape exactly on one disc. With the others you'll have to copy in long-play mode to get three hours on a disc, but the picture will be worse than copying in standard-play (SP) mode.

Samsung DVD-VR330



VCR PICTURE (SP) ★★★
VCR SOUND (SP) ★★★
VCR TO DVD COPYING (SP) ★★
VCR SCORE 62%

Toshiba D-VR16-S-TB



VCR PICTURE (SP) ★★
VCR SOUND (SP) ★★★
VCR TO DVD COPYING (SP) ★
VCR SCORE 47%

Panasonic DMR-EX95V



VCR PICTURE (SP) ★★★
VCR SOUND (SP) ★★★
VCR TO DVD COPYING (SP) ★★
VCR SCORE 59%

A DVD/VCR
combo is
the easiest
way of
copying
VHS tapes
on to DVD

MEMBER BENEFIT

Great savings on Best Buys

You can save at least 15 per cent on all the Best Buys featured in this report (and up to 25 per cent on some models) with Hughes Direct. The offer is valid until 31 December 2006 and includes postage costs. Discounts are also available on blank media and leads.

See p79 of this issue for further details of this offer.



WHICH? TEST PERFORMANCE								SCORE %
HDMI	PLAYBACK PICTURE	PLAYBACK SOUND	RECORDED PICTURE (SP)	RECORDED PICTURE (LP)	RECORDED SOUND	EASE OF USE	POWER USAGE	
	★★★★	★★★	★★★★	★★★	★★★	★★★★	★★★	67
✓	★★★★	★★★	★★★★	★★★	★★★	★★★★	★★★	67
	★★★★★	★★★★★	★★★★	★★	★★★★	★★★	★★★★	67
✓	★★★★	★★★	★★★	★★	★★★★	★★★	★★★	60
✓	★★★★	★★★★	★★	★	★★★★	★★★	★★★	60
	★★★★	★★	★★★	★★	★★★★	★★★	★★★★	57
	★★★★	★★★★	★★★	★★	★★★	★★	★★★	53
	★★★★	★★★	★★★	★	★★★	★★	★★★★	48

For notes on using the table, see p65

MEMBER BENEFIT

FREE website access

Plus the chance to get expert one-to-one advice

For more advice on other DVD recorders we've previously tested, as well as on a whole range of audio-visual equipment from TVs to PVRs, log on to www.which.co.uk.

If you would like one-to-one personal advice, you can also ring our experts this month – see p78 for details.



Three systems in a single box

For £500, Panasonic offers a DVD recorder, VCR and PVR

It may not be a Best Buy, but the Panasonic DMR-EX95VEBS (18)

However, the PVR isn't as good as many of the

live TV and offers no auto-padding function to make sure you don't miss the beginning or end of programmes.

Nevertheless, the Panasonic could form the focus of new Christmas party games. How should we record *Ant and Dec's Christmas Takeaway*? DVD? Hard drive? Straight to video? On second thoughts, maybe we won't bother.

has all the recording angles covered. It's three systems – a DVD recorder, VCR and PVR – all rolled into one.

The DVD recorder is excellent and the video recorder (see 'Choosing a DVD/VCR combo', p63) perfectly acceptable. It also has plenty of fancy features, such as a memory card slot, disc resume, Firewire socket, HDMI output and flexible recording.

standalone PVRs we've tested (see *Which?*, September 2006, p60). It has only one digital tuner (so you can't watch one digital channel and record another), can't pause



9 DVD/HDD COMBINATION

68% Sony RDR-HX525 £250

This Sony combines an 80GB hard drive with a DVD recorder. It's great for playing back discs and makes high-quality recordings. Recorded picture quality is among the best but this deteriorates badly when recording in long play. The relatively small hard drive stores 35 hours of TV in standard-play mode (we'd expect 40).

There's no built-in digital tuner but, thanks to the Scart link option, you can make recordings via the EPG of a compatible IDTV or set-top box. The Sony is available from Argos and Currys.

WORTH KNOWING The Sony has a DV input (Firewire) for connecting a digital camcorder plus some basic editing features.

WHICH? BEST BUY

The Sony RDR-HX525 makes high-quality recordings and is great for playing back discs

Cheapest store Argos **HDD** 80GB **Tuners** Analogue **Scart link** Yes **Resume** Yes **VideoPlus** Yes **Scart 2 S-Video** Yes **Surround-sound output** Coaxial **HDMI** No

Facts & scores

More information from our testing team about the latest models

MP4 recording

The LG features an Mpeg4 recording mode. This compresses the recorded material and can boost the hard-drive capacity from 120 hours to an enormous 625 hours. Picture quality is poor but with three and a half weeks' worth of *The Fimbles* on disc the kids shouldn't mind.

MODEL	PRICE (£)	SIZE (cm) (hwxwxd)	RECORDING FORMATS	HDD CAPACITY (GB)	FREEVIEW TUNER	SCART LINK	GUIDE PLUS	VIDEOPLUS	FLEXIBLE RECORDING
DVD/HDD COMBINATION									
9 SONY RDR-HX525	250	7x43x37	-RW +RW -R +R -RW(VR)	80		✓	✓	✓	
10 HITACHI DV-DS163E UK	280	6x43x30	-RW +RW -R +R -RW(VR) RAM	160				✓	
11 LG RH199HS	430	6x43x30	-RW +RW -R +R -RW(VR) RAM	250				✓	
12 SAMSUNG DVD-HR734/XEU	280	6x43x31	-RW -R -RW(VR)	160					✓
DVD/PVR COMBINATION									
13 PANASONIC DMR-EX75EB-S	350	6x43x35	-RW +RW -R +R -RW(VR) RAM	160	✓	✓		✓	✓
14 PIONEER DVR-540HX-S	400	8x42x36	-RW +RW -R +R -RW(VR) RAM	160	✓	✓	✓		
15 TOSHIBA RD-85DTSB	300	6x43x37	-RW -R -RW(VR) RAM	160	✓	✓			
DVD/VCR COMBINATION									
16 SAMSUNG DVD-VR330/XEU	200	8x43x33	-RW -R -RW(VR)					✓	
17 TOSHIBA D-VR16-S-TB	190	10x44x29	-RW -R -RW(VR)			✓			
DVD/PVR/VCR COMBINATION									
18 PANASONIC DMR-EX95VEBS	500	9x43x38	-RW +RW -R +R -RW(VR) RAM	250	✓	✓		✓	✓



13 DVD/PVR COMBINATION

66% Panasonic DMR-EX75EB-S £350

This outstanding DVD recorder comes with 160GB worth of hard drive and a digital tuner built-in – making it a PVR too. It's relatively easy to use as a DVD recorder and features HDMI and Firewire sockets, a memory card slot and – like all the Panasonic Best Buys – a flexible recording option (see p60). The PVR is missing some useful features – for example, it has only one digital tuner, can't pause live TV and doesn't automatically buffer recordings – so there's a chance you'll miss the beginning or end of a programme if it's running late.

You can buy the Panasonic from Argos, Currys or John Lewis.

WE LIKE The on-screen menus are clear and straightforward.

WHICH?
BEST
BUY

Cheapest stores Argos, Currys and John Lewis
HDD 160GB **Tuners** Analogue and digital **Scart link** Yes
Resume Yes **VideoPlus** Yes **Scart 2** S-Video Yes
Surround-sound output Optical **HDMI** Yes

Five years on

How prices have tumbled since DVD recorders were first launched in the UK

It's only five years since Philips launched the first DVD recorder in the UK, but much has changed in that time. That first Philips machine cost £1,300 – about six times the price of a current Best Buy. Average prices of blank discs have tumbled, too. A blank DVD-RW cost £12 in 2001 – you can get ten discs for that price today.

Contacts

Hitachi 01628 643 3000 www.hitachi.co.uk	www.pioneer.co.uk
LG 0870 607 5544 www.lge.co.uk	Proline 0870 542 5425 www.comet.co.uk
Panasonic 0870 535 7357 www.panasonic.co.uk	Samsung 0870 242 0303 www.samsung.co.uk
Philips 0906 101 0016 www.philips.co.uk	Sony 0870 511 1999 www.sony.co.uk
Pioneer 01753 789500	Toshiba 0870 442 4424 www.toshiba.co.uk

The Panasonic DMR-EX75EB-S has a 160GB hard drive – big enough to hold 80 hours of recordings

USING THE TABLES

We tested DVD recorders and combination units from the main brands that we hadn't already tested for previous articles. The more stars the better.

Specification

Price For Best Buys, we give the cheapest widely available high-street price as we went to press. Prices for other models are a guide to what you should expect to pay. **Recording formats** Different types of disc on to which the machine can record ('Disc types', p62). **HDD capacity** See 'Jargon buster', p61.

Features

Freeview tuner Recorder has built-in digital tuner. **Scart link** Lets you record via the EPG of a compatible set-top box or IDTV. **Guide Plus** Provides access to an EPG via an analogue TV signal. **VideoPlus** A system for recording non-digital channels by typing in a number given in TV listings magazines. **Flexible recording** See 'What you should look for', p60. **Surround-sound digital output** Links you to other audio-visual equipment such as surround-sound. Co=Coaxial (wire); Op= optical (fibre optic). **HDMI** See 'What you should look for', p60.

Test performance

Playback picture/sound Ratings are for pre-recorded DVDs, like those you'd buy in the shops. **Recorded picture (SP)/(LP)** Ratings are for recordings made on the DVD recorder itself. Standard play (SP) gives two hours of recording time per disc. Long play (LP) gives four hours of recording time per disc. **Recorded sound** Sound quality in standard-play and long-play modes. **Ease of use** How easy it is to set up, play DVDs, record programmes, access features, read the front panel and follow the instructions. **Power usage** Based on consumption in standby and when playing or recording.

Score

This ignores price and is based on:

Picture quality	30%
Sound quality	30%
Ease of use	20%
Features	15%
Power consumption	5%

				WHICH? TEST PERFORMANCE							SCORE %
MEMORY CARD SLOT	SURROUND-SOUND DIGITAL OUTPUT	HDMI	PLAYBACK PICTURE	PLAYBACK SOUND	RECORDED PICTURE (SP)	RECORDED PICTURE (LP)	RECORDED SOUND	EASE OF USE	POWER USAGE		
	Co		★★★★★	★★★★★	★★★★★	★★	★★★★★	★★★★	★★		68
✓	Op, Co	✓	★★★★	★★★★★	★★★★	★★★★	★★★★	★★★★	★★★★		62
	Op, Co	✓	★★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★		59
	Op, Co		★★★★★	★★★★	★★★★	★★	★★★★	★★★★	★★		59
✓	Op	✓	★★★★★	★★★★★	★★★★★	★★★★	★★★★★	★★★★★	★★		66
	Co		★★	★★★★	★★★★	★★★★	★★★★★	★★	★★★★		58
	Co		★★★★★	★★★★	★★★★★	★★★★	★★★★	★★	★★		57
	Op, Co		★★★★★	★★★★	★★★★	★★	★★★★	★★★★	★★★★		61
	Co		★★★★★	★★★★★	★★★★	★★	★★★★	★★★★	★★★★		53
✓	Op	✓	★★★★★	★★★★★	★★★★★	★★★★	★★★★	★★★★★	★		63