



# Sounds wonderful

Micro hi-fi systems can save you space and money – and the latest systems can even connect to the internet

Micro hi-fi systems are a popular choice for the home. They're stylish, don't take up much space, and offer an easy, one-stop solution for your audio needs.

You don't have the hassle of deciding what separate amplifier, tuner, CD and speakers to buy – they all come neatly packaged together in one unit, simple to set up and get going, plus you can usually control the whole system from a single remote control. Crucially, you needn't compromise on audio quality if you choose carefully – our Best Buys are easy to use and sound great.

Micro hi-fi models are also benefiting from a range of new features. Most come

with DAB radio and many have USB ports or iPod docking stations for hooking up an MP3 player or memory stick. Others have memory card slots that will accept an SD card, and three have massive hard-disk drives that can store thousands of MP3 audio tracks.

Three models we tested – Denon's D-F103HRDAB (2) and S-52DAB (16) and the Philips WACS7500 (10) – can connect to the web and access a host of internet radio stations. Tuning into the likes of Radio Kazakhstan could be a welcome change from Classic FM.

The iSymphony V1 BLUEe (17) features a Bluetooth wireless link so that the main

unit can connect wirelessly to the supplied iPod docking station. This means you can conveniently locate the iPod dock close to the listener. The link can also be used to transmit music to a suitable mobile phone, Bluetooth headset or other mobile device.

For a new concept in home hi-fi, consider the Philips WACS7500 (10) and WAC3500D (6) systems. Their main units contain hard-disk recorders that will store hundreds of CDs; they can also stream music wirelessly to up to five remote music stations around your house.

Norrie Curtis tried out a similar system – find out how he got on in 'Unwired for sound', right.



## UNWIRED FOR SOUND

**Norrie Curtis** 36, *chartered surveyor*

Norrie Curtis and his partner David, 40, from Stroud in Gloucestershire, have a Philips Streamium C700 wireless music system installed in their home. Their entire collection of 500 CDs has been relegated to the loft as they've downloaded each one to the 40GB hard disk of the main unit.

With their music collection now stored centrally, they can play it back directly from the main unit in the kitchen, or wirelessly stream it to two remote stations placed in the sitting room and study.

Norrie can scroll through artists and albums to find whatever music he wants to play, create playlists or just listen to a random selection in 'shuffle' mode. It's changed the way that Norrie listens to music. 'I'm much less album-orientated now,' he says, 'and far more spontaneous about what I listen to when scrolling through the listings.'

Norrie thinks that sound quality from the main unit and music stations is good and he is very happy with his purchase. 'I'd definitely choose this type of music system again,' he says.

## GREAT SAVINGS WITH HUGHES DIRECT

Hughes Direct is offering exclusive discounts for Which? members on the Best Buy Teac, Denon and JVC micro hi-fis from this month's report. There are savings of up to 22% on these models – all special-offer prices include delivery.

Should you find the same product cheaper elsewhere (including delivery) within seven days of purchase, Hughes Direct will refund 110% of the difference.

To find out more about this and other member-only discounts from Hughes Direct, go to [www.hughesdirect.co.uk/which](http://www.hughesdirect.co.uk/which) or call 01473 321883. Offer valid until 30 September 2008, subject to availability.

## How we test



**What we're listening for, and how we find the best micro hi-fi**

### Music variety show

At the core of our testing are our stringent listening tests. Our panel of five experts listens to various audio tracks, including classical from Suppé (Light Cavalry), jazz (Jacques Loussier) and female vocal from

Mary Black. We also use spoken word tracks featuring male and female voices. Each track is chosen to put the systems through their paces and highlight any flaws.

We try each system with good-quality budget speakers to see whether the sound improves. If it does, it shows that the supplied speakers limit the sound quality.

Any iPod dock or other MP3 connection is assessed for sound quality.

In addition to this we perform more than 50 technical tests and check more than 150 features.

Our ergonomics experts also try out each model's various functions and features, assessing how easy and intuitive they are.

New features such as internet radio or wireless streaming are given a thorough examination so we can pass judgement.



## 82% Teac Ref300DAB Mk3 £500

This stylish three-part system has brushed-aluminium front panels and fluorescent displays, coupled with light-coloured wood-finish speakers. Our experts loved the way it sounded, saying it offered 'a marvellous, warm, punchy sound'. It has a DAB tuner and all the necessary connections for attaching a separate recorder. Setting it up was fiddly but, once done, it was easy to use. It's cheapest online and at independents.

which?  
**BEST BUY**

**WORTH KNOWING** The system uses two remote controls and needs to be plugged in with three mains leads.

Available Online and independents DAB Yes Remote controls Two DVD player No USB No iPod dock No Media card slot No



## 74% Denon D-F103HRDAB £999

This hi-tech box of tricks has several clever features. It has a DAB radio and, unusually, it incorporates a 40GB hard drive that can record tracks from CD or an MP3 player, plus an ethernet connection for transferring audio files or listening to internet radio. Our experts liked the way it sounded and praised its 'good quality and dynamics'. Setting it up takes a while, and the layout of the remote control is confusing, as is the menu system. Cheapest at John Lewis.

which?  
**BEST BUY**

**WE LIKE** This is a great system if the fancy features appeal to you. If not, go for one of the cheaper Best Buys

Available John Lewis DAB Yes Remote controls Two DVD player No USB Yes iPod dock No Media card slot No

The Denon D-F103HR DAB is a hi-tech box of tricks with several clever features



## 67% Denon D-F102DAB £500

This smart-looking system has two main units in brushed aluminium with large blue displays. It comes with a DAB radio and all the necessary inputs and outputs for connecting a recorder. Our expert panel thought its sound quality was a notch down from the D-F103HRDAB (2). Setting it up was complicated by the number of wires, and Denon needs to look at its remote control layouts, which are confusing. It's cheapest at Comet and John Lewis.

which?  
**BEST BUY**

**WE FOUND** A decent hi-fi system, but the audio quality can be bettered.

Available Comet, John Lewis DAB Yes Remote controls One DVD player No USB No iPod dock No Media card slot No



## 67% Pure Legato II £349

This modern-looking, one-box system is available in shiny 'piano' black, with matching speakers that deliver the goods. Its DAB tuner has some advanced features; it receives and displays electronic programme guide listings, and can pause, rewind and record live radio to an external memory card. It also has an advanced facility called 'intellitext' that gives you on-demand extras such as sports results. Our assessors liked its front-panel controls and on-screen menus. Cheapest at John Lewis.

which?  
**BEST BUY**

**WORTH KNOWING** This system gobbles up 10 watts of power when left in standby mode.

Available John Lewis DAB Yes Remote controls One DVD player No USB No iPod dock No Media card slot SD



## 66% JVC EX-A10 £520

This silver two-box system comes with speakers featuring wooden cones that have been soaked in sake. The theory is that the sake makes the wood soft and easily manipulated, preventing it from cracking when shaped. We can't comment on whether this is strictly necessary, but we can report that this system sounds very good with these speakers – better than with our alternative speakers – so maybe there's something to it. It has a decent FM/MW tuner (but not DAB) and we found it easy to set up and use. It's cheapest online and at independents.

which?  
**BEST BUY**

**WORTH KNOWING** This is the only system we tested that comes with a good-quality DVD player.

Available Online and independents DAB No Remote controls One DVD player Yes USB No iPod dock No Media card slot No

## Unsound investment

A micro system that is big on disappointment

The Ministry of Sound MOSMC139IPXI (18) finished at the bottom the pile. The FM/MW tuner was the worst we tested and CD sound quality was poor – 'unrefined and harsh' was our expert listeners' verdict.

We also found it a pain to use – the instructions are wordy and poorly

translated and we found the front panel layout confusing. The remote control is no better, with poor layout, labelling and restricted angle of use.

It may be cheap, but it's definitely not cheerful. Don't go within earshot of this Don't Buy system.

which?  
**DON'T BUY**



## Which should you choose?



### Best for audio quality

**TEAC REF300DAB MK3 £500** If hi-fidelity is of overriding importance, look no further than this Teac (1). Our experts thought it sounded 'marvellous'. And it's our top-scoring system overall.



### Best for audio around the home

**PHILIPS WAC3500D £300** It narrowly missed out on being a Best Buy but the WAC3500D (6) can generate good sound from its main unit and wirelessly link to up to five (optional) remote music stations around your house. You can control it so that the music 'follows you' as you move from room to room or broadcasts to all stations at the same time, filling your home with your favourite tunes.



### Best for internet radio

**DENON D-F103HRDAB £999** If tuning into thousands of radio stations from around the world appeals, then this Best Buy from Denon (2) fits the bill. It also produces great sound that's up there with the best.



### Best on a budget

**TEAC CR-H257I £160** If your wallet won't stretch to one of our Best Buys, then this Teac (7) is worth considering. It's not a great audio performer, but the quality won't offend your ears and it's one of the easiest systems to use.

MODEL	SPEC
	PRICE (£)
1 <b>TEAC Ref300DAB Mk3</b>	500
2 <b>DENON D-F103HRDAB</b>	999
3 <b>DENON D-F102DAB</b>	500
4 <b>PURE Legato II</b>	349
5 <b>JVC EX-A10</b>	520
6 <b>PHILIPS WAC3500D</b>	300
7 <b>TEAC CR-H257i</b>	160
8 <b>JVC UX-DM9DB</b>	315
9 <b>SONY HCD-GS30DAB</b>	150
10 <b>PHILIPS WACS7500</b>	700
11 <b>SONY HCD-SPZ90DAB</b>	165
12 <b>iSYMPHONY M1ukDAB</b>	180
13 <b>PURE DMX-20</b>	90
14 <b>TEAC MC-DX220iDAB</b>	199
15 <b>MINISTRY OF SOUND MOSMC057IP</b>	129
16 <b>DENON S-52DAB</b>	499
17 <b>iSYMPHONY V1BLUEe</b>	250
18 <b>MINISTRY OF SOUND MOSMC139IPX</b>	65

## Step-by-step guide

How to download your CD collection to a music system with a hard drive

1



Load a CD into the drawer and press play. The system will identify the CD using the cataloguing system that it has downloaded from the internet and stored in its memory.

3



Press record to start 'ripping' the CD to the hard drive at high speed. Tracks are stored by default in MP3 format at 128kbps (near CD quality). You can select higher-quality bit rates (up to 320 kbps) but this will take up more disk space.

Repeat steps one to three with other CDs.

2



A track listing will appear. Press Mark/Unmark to select/deselect those tracks you want to record.

## Jargon buster

Sounds confusing? Here's what we're talking about



**INTERNET RADIO** Some systems can link to the internet and pick up thousands of radio stations from all over the world.



**USB** A type of socket usually found on a computer, but used here as an alternative way of connecting your MP3 player.



IFICATION	FEATURES										WHICH? TEST PERFORMANCE					SCORE %
SIZE (cm) (hwxwd)	TUNER WAVEBANDS	INTERNET RADIO	HEADPHONE SOCKET	RDS	DVD PLAYER	DIGITAL OUTPUTS	HARD-DISK RECORDER	USB PORT	iPOD DOCK	MEDIA CARD SLOT	FM/MW TUNER	CD PLAYER (OWN SPEAKERS)	CD PLAYER (BETTER SPEAKERS)	USB/iPOD DOCK	EASE OF USE	
29x22x31	FM, MW, DAB		✓	✓		n/a					★★★★★	★★★★★	★★★★★		★★★	82
19x25x28	FM, MW, DAB	✓	✓	✓		n/a	✓	✓			★★★★★	★★★★★	★★★★★	★★★	★★	74
16x25x32	FM, MW, DAB		✓	✓		n/a					★★★★★	★★★★★	★★★★★		★★	67
16x21x28	FM, DAB		✓	✓		n/a				✓	★★★★★	★★★★★	★★★★★		★★★	67
16x25x30	FM, MW		✓	✓	✓	Op					★★★★★	★★★★★	★★★★★		★★★	66
22x19x31	FM		✓	✓		n/a	✓	✓	✓		★★★★★	★★★★★		★★★	★★	63
11x22x36	FM, MW, DAB		✓	✓		Op			✓		★★★★★	★★★★★	★★★★★	★★★	★★★	59
14x21x29	FM, MW, DAB		✓	✓		n/a		✓	✓		★★★★★	★★★★★	★★★★★	★★★	★★	54
25x17x31	FM, MW, DAB		✓	✓		n/a					★★★★★	★★★★★	★★★★★		★★	54
28x62x19	FM	✓	✓	✓		Co	✓	✓			★★★★★	★★★★★		★★★	★★	53
28x18x34	FM, MW, DAB		✓	✓		n/a					★★★★★	★★★★★			★★	53
21x15x28	FM, DAB		✓			n/a		✓	✓	✓	★★★★★	★★★★★	★★★★★	★★★	★★	52
17x15x23	FM, DAB		✓	✓		n/a					★★★★★	★★★★★	★★★★★		★★★	46
17x28x12	FM, DAB		✓	✓		n/a			✓		★★★★★	★★★★★		★★	★★	40
17x21x28	FM, DAB		✓	✓		n/a		✓	✓	✓	★★★★★	★★★★★	★★★★★	★	★★	37
13x38x26	FM, MW, DAB	✓	✓	✓		n/a		✓	✓		★★★★★	★★★★★		★	★★★	36
33x30x21	FM, MW		✓	✓		n/a		✓	✓	✓	★★★★★	★★★★★		★	★★★	33
17x21x28	FM, MW		✓			n/a		✓	✓	✓	★★★★★	★★★★★	★★★★★	★	★★	26



■ **iPOD DOCK** An easy way of connecting your Apple iPod to the hi-fi system for playing back tracks stored on it.



■ **FLASH MEMORY DRIVE** A type of memory card that can plug into a USB port.

## USING THE TABLE

The more stars the better.

### Specification

**Price** For Best Buys, we give the cheapest widely available high-street price as we went to press. If we couldn't find them at major high-street retailers, we give the most common online price. Prices for other models are a guide to what you should expect to pay. Go to [www.which.co.uk/shopping](http://www.which.co.uk/shopping) for the latest prices.

### Features

**RDS** Radio data system on analogue FM radio – shows station name. Some models will also switch to traffic announcements broadcast on other stations. **Digital outputs** For connecting to an external digital recorder, for example. Check you have the compatible output type; optical (Op) or

coaxial (Co). **USB port** For connecting an MP3 player or flash memory drive. **iPod dock** A simple way to connect your iPod and play back music stored on it through your hi-fi. You can also control the iPod using the system's remote control. **Media card slot** Some systems have card slots that can accept a memory card for playback or recording.

### Test performance

**FM/MW tuner** Technical testing of the tuner. How well the FM tuner pulls in weak stations and rejects unwanted interference. **CD player (own speakers)** Our expert panel's verdict on the quality of CD sound using the supplied speakers. **CD player (better speakers)** Our expert panel's verdict on the quality of CD sound using good budget speakers. **USB/iPod dock** Our expert panel's verdict on the

quality of sound when using the iPod dock or USB port with an MP3 player. **Ease of use** Includes setting the system up and everyday use of every part of the system.

### Total test score

This ignores price and is based on:

Sound quality	50%
Ease of use	20%
Tuner	15%
Features	15%

## Contacts

**Denon** 01753 680 568  
[www.denon.co.uk](http://www.denon.co.uk)  
**iSymphony** 0844 478 0070  
[www.isymphony.co.uk](http://www.isymphony.co.uk)  
**JVC** 0870 330 5000; [www.jvc.co.uk](http://www.jvc.co.uk)  
**Ministry of Sound** 0871 230 1777  
[www.ministryofsound.com/audio](http://www.ministryofsound.com/audio)  
**Philips** 0845 601 0354  
[www.philips.co.uk](http://www.philips.co.uk)  
**Pure** 01923 277 488; [www.pure.com](http://www.pure.com)  
**Sony** 0870 511 1999; [www.sony.co.uk](http://www.sony.co.uk)  
**Teac** 0845 130 2511; [www.teac.co.uk](http://www.teac.co.uk)