



Our listening panel has eclectic musical tastes, sampling everything from opera to rock

Our panel of five experts listens to various audio tracks, including Suppé's operetta *Light Cavalry*, jazz ('Dancing With Donna' by Flim and the BBs), rock (Peter Gabriel's 'Sledgehammer') and female vocal from Mary Black. It also listens to the spoken word, both male and female. Each track is chosen to highlight any specific flaws.

We compare the micro hi-fi with a budget separates system (costing about £500) to see whether any can match it for quality – none in this test does. We also try each system with some decent budget speakers to see whether the sound improves (see 'How to buy', p48).

No bias

To eliminate any bias, we hide the brand names from the panel and sneak in the same products twice to ensure consistency. Panel members are not allowed to confer, and our statisticians analyse their lengthy score sheets to ensure the ratings we publish represent real differences.

Real life

Underpinning this is a raft of more than 50 technical tests and more than 150 checks on different features. Our experts also look at how easy it is to load CDs, adjust the controls, tune the radio and use other features, in exactly the way you would.

Simple and stylish

They're stylish, take up little space and offer all the things you need in one box – no wonder micro hi-fi sales are buoyant

Micro hi-fi systems save you the trouble of deciding which amp, tuner, CD and speakers to buy – they all come packaged together. And though not exactly plug in and play, they're simpler to set up than separates. You've usually got just one remote control to worry about, too.

These days, you also get more extras for your money. Many now have digital (DAB) radio, including nine out of the top ten performers we tested. Several systems allow you to connect to other devices, such as an iPod or other MP3 player where you may store music, so you can play it through your micro system.

The Denon D-F103HRDAB (2) also comes with a 40GB hard disk that stores

nearly 9,000 MP3 tracks and links to the internet, allowing you to choose from 1,800 online radio stations.

As well as new technology, a few systems still offer that relatively ancient favourite – the cassette player. Unfortunately, those we've tested are low quality, and it's a format in terminal decline – Currys announced in May that it would no longer sell blank cassettes (see 'The way we were', p82).

No such grim fate appears to await micro systems in the near future, and if you choose carefully you should get good sound quality. Our experts described the sound from our Best Buy Teac as 'marvellous' – which is praise indeed.

Several systems allow you to connect to an MP3 player

What you should look for

SPEAKERS

Most systems come with speakers, but you sometimes get better sound by upgrading these (see table). Some models have built-in speakers, so this isn't always possible – and it can ruin the aesthetics

TUNER

Nearly all the systems receive FM and MW radio and more than half have digital radio (DAB), giving access to a host of extra stations



REMOTE CONTROL

Most models have one remote that controls all sections of the system (except cassette decks). Some are better laid out than others

PORTS AND CARD SLOTS

Many systems now have a USB port or memory-card slot, so you can play tracks from SD cards, USB flash memory drives such as USB Memory Sticks or compatible MP3 players. Some have specific docking stations for an iPod



85% Teac PD/T/A-H300 DAB Mk 3 £405

Our experts loved the warm, punchy sound of this three-part system, praising the dynamics and detail. It also looks stylish, with wood-finish speakers.

It has a DAB tuner and all necessary connections for attaching a separate tape deck or CD recorder. Setting it up was fiddly because of all the interconnections between the

three parts but, once done, it was pretty easy to use. The Teac is a

halfway house between separates and a micro hi-fi but qualifies as the latter because the different parts 'talk' to each other. Available from independents.

WORTH KNOWING You need to plug in three mains leads to power it up.

Cheapest store Independents **DAB** Yes **Remote controls** Two **Memory card** No **USB** No **iPod** playback No



81% Denon D-F103HRDAB £999

This hi-tech box of tricks has a DAB radio and a 40GB hard drive that can record tracks from a CD or a connected MP3 player (but not from the radio). An ethernet connection lets you use a home broadband network to transfer audio files to/from its hard drive or listen to around 1,800 internet radio stations. If you record a CD to the hard disk, the system identifies it and displays track titles when you play them back. Setting up takes a while, and the layout of the remote control is a bit confusing. The menu system also makes some features tricky to find. Buy it at John Lewis.

WE THINK The Denon is great for fancy features – but at a price.

Cheapest store John Lewis **DAB** Yes **Remote controls** Two **Memory card** No **USB** Yes **iPod** playback No



74% Denon D-F102DAB £499

This smart system comes with a DAB radio, with all necessary inputs and outputs for connecting a separate recorder if you wish.

Our expert panel thought that its sound quality was a notch below its Denon big brother (left), describing it as a 'middle-of-the-road performance, with a balanced response'. Setting up was complicated by the number of wires you need to hook up and Denon needs to look at the layout of its remote controls, which are rather confusing. Available from Comet and John Lewis.

WE THINK A decent system, but the sound isn't up there with the best.

Cheapest store Comet and John Lewis **DAB** Yes **Remote controls** One **Memory card** No **USB** No **iPod** playback No

Denon needs to look at the layout of its remote controls, which are rather confusing



74% Denon D-M35DAB £379

This Denon's look blends a hi-tech brushed aluminium front with the traditional style of two small wooden bookshelf speakers. Our experts were impressed with the 'dynamic detail' of sound on both classical and pop tracks.

It's not the easiest system to set up – the instructions are daunting and the speaker cables are thick and difficult to hook up – but it's simple to use after that. The display is easy to read, though the front panel buttons are rather small and fiddly. It's sold at Currys, Comet and John Lewis.

WE LIKE A DAB tuner is included in this swanky-looking package.

Cheapest stores Comet, Currys, John Lewis **DAB** Yes **Remote controls** One **Memory card** No **USB** No **iPod** playback No



74% Pure Legato II £349 (£379)

The Pure's DAB tuner has some advanced features: its electronic programme guide shows listings for up to seven days, you can pause and rewind live radio (up to 30 minutes) and you can record radio programmes on to an external memory card (not supplied). A feature called 'intellitext' gives you on-demand access to headlines, sports results and other extra information on some stations. There's an SD-card slot for playing back MP3 files as well as recording. And the front panel controls and screen menus are easy to use. You can buy it from John Lewis.

WORTH KNOWING It's available in cherry, maple or black (£30 more).

Cheapest store John Lewis **DAB** Yes **Remote controls** One **Memory card** SD **USB** No **iPod** playback No



71% Marantz CR601 £350 (£420)

This smart-looking system with a brushed aluminium fascia and fluorescent display can be bought with (£70 more) or without Mordaunt-Short 902i speakers. Our experts thought the supplied speakers gave it a 'natural but unrefined sound' but that quality improved with our own set. It comes with a DAB tuner and necessary connections for hooking up an optional recorder.

It was quite easy to use, though the small labelling on the front panel and remote control could be improved. Available from independents.

WORTH KNOWING Try it with a selection of speakers before buying.

Cheapest store Independents **DAB** Yes **Remote controls** One **Memory card** No **USB** No **iPod** playback No



Facts & scores

Extra snippets of info gleaned from our exhaustive testing

Look, no wires

The Sony CMT-U1BT has a Bluetooth receiver, so you can play back music from a compatible mobile phone or other device, though it can't transmit to a Bluetooth headset.

Wakey, wakey

The Tivoli and Boston can be used as clock radios with snooze, sleep and alarm functions.

iPod dock

The iSymphony and Teac MC-DX220i systems have dedicated docking stations for an iPod.

Booming bass

The two Ministry of Sound and the Teac MC-DX220i systems come with an additional subwoofer speaker to improve their bass performance.

| MODEL | SPECIFICATION | | FEATURES | | | | | | | |
|--|------------------|--------------------|-----------------|---------|-------------------|------------------|-----|------------|---------------------------|-----------------------------|
| | PRICE (£) | SIZE (cm) (hxxwxd) | TUNER WAVEBANDS | REMOTES | SINGLE MAINS LEAD | HEADPHONE SOCKET | RDS | DVD PLAYER | RECORD TO MEMORY CARD/USB | CASSETTE/HARD-DISK RECORDER |
| 1 TEAC PD/T/A-H300DAB Mk3 | 405 | 29x22x31 | FM, MW, DAB | 2 | | ✓ | ✓ | | | |
| 2 DENON D-F103HRDAB | 999 | 19x25x28 | FM, MW, DAB | 2 | ✓ | ✓ | ✓ | | | HD |
| 3 DENON D-F102DAB | 499 | 16x25x32 | FM, MW, DAB | 1 | ✓ | ✓ | ✓ | | | |
| 4 DENON D-M35DAB | 379 | 10x21x33 | FM, MW, DAB | 1 | ✓ | ✓ | ✓ | | | see ^a |
| 5 PURE Legato II | 349 | 16x21x28 | FM, DAB | 1 | ✓ | ✓ | ✓ | | SD | |
| 6 MARANTZ CR601 | 420 ^b | 15x21x34 | FM, MW, DAB | 1 | | ✓ | ✓ | | | |
| 7 ONKYO CR-515DAB | 300 | 12x21x37 | FM, MW, DAB | 1 | ✓ | ✓ | ✓ | | | see ^a |
| 8 PURE DMX-60 | 250 | 24x17x29 | FM, DAB | 1 | ✓ | ✓ | ✓ | | SD | |
| 9 SONY CMT-U1BT | 300 | 24x16x22 | FM, MW | 1 | ✓ | ✓ | ✓ | | | |
| 10 PURE DMX-25 | 129 | 17x15x23 | FM, DAB | 1 | ✓ | ✓ | ✓ | | | |
| 11 BOSE Acoustic Wave Music System II | 1,000 | 27x46x19 | FM, MW | 1 | ✓ | ✓ | ✓ | | | |
| 12 PHILIPS MCM275 | 100 | 28x20x12 | FM, MW | 1 | ✓ | ✓ | ✓ | | | |
| 13 SONY CMT-DX2D | 178 | 25x19x30 | FM, MW | 1 | ✓ | ✓ | ✓ | ✓ | | C |
| 14 TIVOLI Audio Music System | 650 | 14x36x28 | FM, MW | 1 | ✓ | ✓ | ✓ | | | |
| 15 ROBERTS MP-16 | 281 | 14x25x30 | FM, MW, DAB | 1 | ✓ | ✓ | ✓ | | | |
| 16 SONY CMT-EH20DAB | 130 | 24x16x24 | FM, DAB | 1 | ✓ | ✓ | ✓ | | | C |
| 17 BOSTON Microsystem CD | 368 | 12x36x22 | FM, MW | 1 | ✓ | ✓ | | | | |
| 18 ISYMPHONY M2UK | 130 | 21x18x34 | FM, MW | 1 | ✓ | ✓ | | ✓ | | |
| 19 TEAC MC-DX220i | 200 | 17x26x12 | FM, MW | 1 | ✓ | ✓ | ✓ | | | |
| 20 GOODMANS Micro 1104 H DAB | 80 | 17x15x23 | DAB | 1 | ✓ | ✓ | | | | |
| 21 MORPHY RICHARDS 29114 | 120 | 24x16x24 | FM, MW | 1 | ✓ | ✓ | ✓ | | SD,USB | C |
| 22 MINISTRY OF SOUND MOSMC018 | 80 | 20x19x23 | FM, MW, DAB | 1 | ✓ | ✓ | ✓ | | | |
| 23 MINISTRY OF SOUND MOSDV124 | 100 | 14x21x30 | FM, MW | 1 | ✓ | ✓ | | ✓ | | |

a Optional cassette deck available but not tested b Includes Mordaunt-Short 902i speakers

How to buy

Prices may be cheaper online, but you should listen to a hi-fi before you buy

■ TRY BEFORE YOU BUY

It's cheaper to buy hi-fi systems online, but you won't know what they sound like until it's too late. It's always worth testing hi-fi equipment properly before you buy, and microsystems are no exception. Buying online or even hearing a quick blast from a display model inside a noisy shop is pretty useless.

Many independent hi-fi shops stock our Best Buys and

should have proper listening facilities. Take along some of your favourite CDs. You may not get the cheapest price but you'll know whether you like the sound before parting with your cash. Our experts have thoroughly tested these machines, but it's what sounds good to you that matters most.

■ UPGRADE SPEAKERS

Our tests show that the supplied speakers are often

the weak link in the chain and that sound quality can improve if you upgrade them.

However, not all systems are suitable – some have built-in speakers, and occasionally a system deliberately warps the sound to compensate for deficiencies in its own speakers. Bolting a different set on can result in a very peculiar sound indeed. None of the models in this test suffers from this, though.

DEALS ON MICRO HI-FI

Great savings for members with Hughes Direct

This month Hughes Direct is offering Which? members great savings on selected micro hi-fi systems from this month's report. For more details of these discounts, turn to p79.



| PLAY FROM EXTERNAL DEVICE | RECORD TIMER | MP3 PLAYBACK | WMA PLAYBACK | WHICH? TEST PERFORMANCE | | | | | SCORE % |
|---------------------------|--------------|--------------|--------------|-------------------------|--------------------------|-----------------------------|------------------|-------------|---------|
| | | | | FM/MW TUNER | CD PLAYER (OWN SPEAKERS) | CD PLAYER (BETTER SPEAKERS) | CASSETTE PLAYER | EASE OF USE | |
| | | ✓ | ✓ | ★★★★★ | ★★★★★ | ★★★★★ | n/a | ★★★★★ | 85 |
| USB | | ✓ | ✓ | ★★★★★ | ★★★★★ | ★★★★★ | n/a | ★★★ | 81 |
| | | ✓ | ✓ | ★★★★★ | ★★★★ | ★★★★ | n/a | ★★★ | 74 |
| | | ✓ | ✓ | ★★★★★ | ★★★ | ★★★★ | see ^a | ★★★ | 74 |
| SD | ✓ | ✓ | | ★★★★★ | ★★★★ | ★★★★ | n/a | ★★★★★ | 74 |
| | | ✓ | | ★★★★★ | ★★★ | ★★★★ | n/a | ★★★★★ | 71 |
| | | ✓ | | ★★★★★ | ★★★★ | ★★★★ | see ^a | ★★★★★ | 69 |
| SD | ✓ | ✓ | | ★★★★★ | ★★ | ★★★★ | n/a | ★★★★★ | 62 |
| USB | | ✓ | | ★★★★★ | ★★ | ★★★★ | n/a | ★★★★★ | 61 |
| SD, USB | | ✓ | | ★★★★★ | ★★ | ★★★★ | n/a | ★★★★★ | 59 |
| | | ✓ | | ★★★★★ | ★★ | | n/a | ★★★★★ | 58 |
| | | ✓ | ✓ | ★★★★★ | ★★ | ★★★★ | n/a | ★★★★★ | 55 |
| | ✓ | ✓ | | ★★★★★ | ★★ | ★★★★ | ★★ | ★★★ | 54 |
| | | ✓ | ✓ | ★★★★★ | ★★ | | n/a | ★★★ | 54 |
| | | ✓ | | ★★★★★ | ★★ | ★★★★ | n/a | ★★★ | 53 |
| | | ✓ | | ★★★ | ★★ | ★★★★ | ★★ | ★★★★★ | 53 |
| | | ✓ | ✓ | ★★★★★ | ★★ | | n/a | ★★★ | 52 |
| iPod, MMC, MS, SD, USB | | ✓ | ✓ | ★★★★★ | ★★ | ★★★★ | n/a | ★★★ | 51 |
| iPod | | ✓ | ✓ | ★★★★★ | ★ | | n/a | ★★★★★ | 49 |
| | | | | n/a | ★★ | ★★★★★ | n/a | ★★★ | 48 |
| MMC, SD, USB | ✓ | ✓ | ✓ | ★★★★★ | ★★ | ★★ | ★ | ★★★ | 47 |
| | | ✓ | | ★★★ | ★★ | | n/a | ★★★ | 45 |
| | | ✓ | ✓ | ★★★ | ★★ | | n/a | ★★★ | 44 |

USING THE TABLE

We tested all the latest models on the market. 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.

Features

RDS Radio data system on analogue FM radio – shows station name. Some models also switch to traffic announcements broadcast on other stations.

Record to memory card/USB

Can record audio tracks from the CD player and, sometimes, the radio to an SD memory card/USB memory drive. **Cassette/hard-disk recorder** System includes cassette deck (C) or internal hard-disk (HD) recorder. **Play from external device** You can attach an external device and play back tracks through the hi-fi. **MMC** = multimedia memory card; **MS** = memory stick. **Record timer** You can program the unit to record at set times – useful for recording radio. **MP3/WMA playback** Can play back files recorded on to CD in these formats.

Test performance

FM/MW tuner How well tuner picks up weak stations and rejects unwanted interference.

CD player (own speakers) Expert panel's verdict on quality of CD sound with supplied speakers.

CD player (better speakers)

Expert panel's verdict on quality of CD sound with decent budget speakers. **Cassette player** Expert panel's verdict on cassette sound quality of both prerecorded and self-recorded material. **Ease of use** Includes setting up system and everyday use.

Score

Ignores price and based on:

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

Contacts

Bose 0800 085 9021; www.bose.co.uk
Boston 01753 287947; www.bostonacoustics.com
Denon 01753 680568; www.denon.co.uk
Goodmans 0871 230 1777; www.goodmans.co.uk
iSymphony 0870 803 1703; www.mysymphony.com
Marantz 01753 680868; www.marantz.com
Ministry of Sound 0870 010 5676
www.ministryofsound.com/audio
Morphy Richards 0870 060 2614; www.morphyrichards.co.uk
Onkyo 01494 681515; www.onkyo.co.uk
Panasonic 0870 535 7357; www.panasonic.co.uk
Philips 0845 601 0354; www.philips.co.uk
Pure 01923 277488; www.pure.com
Roberts 01709 571722; www.robertsradio.co.uk
Sony 0870 511 1999; www.sony.co.uk
Teac 0845 130 2511; www.teac.co.uk
Tivoli 01279 501111; www.tivoli-uk.com

Energy efficiency

Pure's sound may impress, but its energy use doesn't, especially on standby

Hi-fi systems, like a lot of audiovisual gear, tend to get left in standby when not used. Many will still gobble up quite a bit of power even when doing nothing, costing you money and contributing to greenhouse gas emissions.

The worst offender in this test is the Pure Legato II (5), which burns 10 watts. Compare this with the Denons (2 to 4), Onkyo (7) and Philips (12) models, which use less than 0.5 watts in standby – more eco-friendly and also good for your wallet.