

How we test

Hi-Fi Choice employs the most rigorous test and measurement regime in the business. Here's how we do it...

Unique group tests

Our *Group Tests* are supported by rigorous and exhaustive listening tests carried out by experts

COMPACT AMPLIFIER GROUP TEST

LISTENING WAS DONE in three phases; first the amplifiers were compared using their analogue line inputs, then tried via their DACs, and finally via their wireless inputs. In most cases, the latter was Bluetooth, and this was sync'd to an aptX-equipped tablet running the latest software. Because some tested products offered DLNA and/or uPnP and/or AirPlay and others purely Bluetooth, it wasn't possible to do direct comparisons across the whole six amplifiers, but valid comparisons were made between amplifiers using the same system. For those products that offered media streaming via uPnP, a RipNAS Solid was used, with its own server software built in.

The listening session itself took place over a period of six days, with all amplifiers given a good time to run in and warm up. During the main comparative tests they were all kept powered up to eliminate sonic differences due to warm-up cycles. At the start of the test session, the six products were level matched with a pink noise test tone, which provided volume parity, ensuring that sonic differences would not be emphasised by level inconsistencies. Four songs were used for primary tests, but during the course of the test period a wide range of music was used in a number of differing formats including CD, MP3, AAC and hi-res PCM.



BLIND LISTENING TESTS

This crucial process is very carefully controlled so that we get reliable and consistent results in a relaxed and friendly atmosphere. Our listeners must not feel that they're being tested, despite being unaware of the brand or price of the products they are auditioning.

The session begins by setting the volume level to an agreed point, one that all three panellists feel comfortable with, yet that is

high enough to make differences easily discernible. Then the choice of music is agreed – it needs to be familiar, but also well recorded and of sufficient variety to give meaningful listening comparisons. The chosen selection of music is played, and the panellists are encouraged to discuss their impressions of the sound of the product. This is then repeated, and periodically the panel listens to earlier products for reference purposes. The

consensus, or otherwise then forms the basis of our sound quality section.

At the end of the session, there's a final debrief when panellists discuss their findings. It's an exhaustive process, but carried out in this way is free from prejudices based on brand, price or appearance, while the different sensitivities of the listeners help to round out the analysis in order to make it more widely applicable.

REFERENCE SYSTEM

CD TRANSPORT
Cyrus CD Xt Signature

DAC
Chord Electronics Hugo

LOUDSPEAKERS
Q Acoustics 2050i

EQUIPMENT SUPPORTS
Quadraspire

TEST MUSIC

DAFT PUNK
Random Access Memories
Get Lucky (MP3)



CARAVAN
In The Land of Grey and Pink
Nine Feet Under (CD)



MALCOLM MCLAREN
Waltz Darling
Waltz Darling (CD)



REM
Out of Time
Near Wild Heaven (hi-res 24/192)



Group test

COMPACT AMPLIFIERS £400-£700

Space savers

David Price tries out six desktop amps equipped with wireless connectivity

BY COMBINING HI-FI sound quality with real-world convenience, the allure of the desktop integrated amplifier is appealing to both audiophiles and music lovers alike who simply want a fuss-free way to listen to music. In this modern age our music is stored on numerous formats and devices and is increasingly more likely to be stored on a smartphone, laptop or sophisticated network-attached drive.

The six compact integrated amplifier designs on test here represent quite a sea change in the hi-fi market. All models are from traditional hi-fi manufacturers, but are aimed at those that require just that bit more versatility over a conventional integrated amplifier at the heart of a hi-fi system. These smart solutions all sport a built-in DAC and are aimed at the growing number of consumers looking to unleash music that's become increasingly more centralised on either their home computer or cloud-based servers, but want to listen via a do-it-all mini hi-fi

amplifier that doesn't require a large separates-sized footprint.

Ok computer

These innovative designs offer greater flexibility in component placement and indeed both the NAD and Monitor Audio models are more flexible than most and can be positioned upright just like a Sony PlayStation, making them ideally suited to placement next to a computer. They're an interesting design that makes the other four amplifiers look a little more outdated.

As well as a significantly smaller footprint, these desktop designs all have some form of wireless connectivity. From aptX Bluetooth and AirPlay from smartphones and tablet devices, to networking capabilities offered by the Cambridge Audio and NAD models, these amps will have you streaming music in no time. Each amplifier offers its own unique solution but to find out which models sound the best, read on.



ON TEST



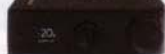
Cambridge Audio Minx Xi £400 p27

The brand personifies the purist approach to integrated amplifiers, but this slender unit combines amplifier, DAC and streaming duties along with a healthy set of features cherry-picked from its affordable separates range.



Monitor Audio A100 £400 p29

The first amplifier from the famous British speaker manufacturer, the A100 is perhaps the quirkiest-looking model in the group. It can be positioned both horizontally and vertically, but how does this unique Class AB design sound?



NAD D 7050 £700 p31

Following hot on the heels of the D 3020 last year, the D 7050 shares the same lie down or stand up casework. It's the most costly here, but music streaming runs with wi-fi, AirPlay, Ethernet and aptX Bluetooth, offering great versatility.



Pro-Ject MaiA £400 p33

The smallest integrated amplifier in this group by some margin, the MaiA is stacked with inputs that include a useful MM phono stage as well as aptX Bluetooth. Can it deliver a sound befitting of the hi-fi brand from such tiny dimensions?



Quad Vena £600 p35

The most affordable integrated amplifier to come from the high-end hi-fi company, the Vena breaks new ground. Despite its retro styling, this is a thoroughly modern amp with aptX Bluetooth, but does it retain the brand's magic?



Teac AI-301DA £400 p37

This brand has plenty of experience in making mini hi-fi components, and the latest model in its 301 series looks set to tick all the right boxes with a sophisticated Class D amp that builds in a future proof DAC and aptX Bluetooth wireless.



Teac AI-301DA £400



Teac has made fine small components for several decades – can the 301 series keep up the good work?

DETAILS

PRODUCT
Teac AI-301DA
ORIGIN
Japan/China
TYPE
Integrated amplifier with USB DAC and Bluetooth
WEIGHT
2.1kg
DIMENSIONS
(WxHxD)
254 x 61 x 215mm
FEATURES
• Quoted power: 40W RMS per channel (4ohms)
• 2x RCA line inputs; asynchronous USB; 1x optical; 1x coaxial digital inputs
• Network music playback: aptX Bluetooth; AirPlay; wi-fi; Ethernet
• 6.3mm headphone output
DISTRIBUTOR
Onkyo Europe
TELEPHONE
+49 08142 4208141
WEBSITE
teac-audio.eu

A key component in the company's latest series of 'desktop' components, the '301 is a very nice package indeed. Simplicity is the key to the design of this Teac; it's the opposite to the Cambridge Audio inasmuch as it doesn't have lots of features, but nor does it have a fussy fascia full of confusing legends. It sports a high quality aluminium case that confers a solid feel compared even with the pricey NAD. It's simplicity itself to use, with a metal volume knob on the right and a source selector and power button to the left, plus a row of source indicator LEDs. As well as analogue line inputs it comes equipped with coaxial and optical digital inputs and USB, which plays out hi-res 32/192 PCM and DSD 5.6 (without converting it to PCM). It also offers ASIO2.1 and DoP (DSD over PCM) and aptX Bluetooth.

Inside is a Burr-Brown PCM1795 DAC and Danish-sourced ICEpower power amplifier modules; these are one of the more respected of the Class D chipsets in terms of sound quality.

The manufacturer claims 40W RMS per side (into 4ohms) of output power. One nice touch is that the amp automatically switches on when it senses a digital signal, so it's fuss-free to use – you can fit and forget.

Sound quality

It's surprising how different all the various amplifiers sound in this roundup; they each attempt to do pretty much the same thing at similar price points, yet the results vary greatly in sonic terms. Some like the NAD are thick and warm, others like the Quad are tight and lithe, but tonally thinner. The Teac, meanwhile, sits very cleverly in the middle, with a nice balanced sound. It's never boring yet nor will it startle you out of your seat; rather it comes over as a very happy marriage between Japanese precision and Scandinavian sophistication; it's an exceptionally mature performer at the price.

It's very able via the analogue line inputs, but interestingly the sound changes less than some of the others here when you move to digital. It

WIRELESS TECH

The Teac AI-301DA does aptX Bluetooth very well; with an unexpectedly clean and engaging sound and a full bass on Daft Punk's *Get Lucky*, with just a slight rounding off of dynamics to mark it out from the CD original. It's a little softer sounding than the S/PDIF digital inputs as you'd expect, but is still very pleasing and the Teac's innate sophistication adds a bit of polish. This does detract from hi-res slightly though, losing a little of the bite and incisiveness that you'd expect from a 24/192 PCM FLAC file of REM's *Near Wild Heaven*, for example. You can't help but like it all the same, as this dinky Class D design has some characteristics of a valve amplifier – a relaxed but musical gait and a silky tonality that you would never normally expect from a product of this price.

serves up a tonally sweet but not too sugary sound, balanced just right for the sort of ancillaries it's likely to be partnered with. Yet it's not bland; compared with the NAD it's rhythmically a good deal snappier, even if it loses a bit of that tonal 'fruitiness' that the D 7050 oozes. Malcolm McLaren's *Waltz Darling* gathers a fair turn of speed, making others sound less zesty. It images reasonably well, throwing snare drum and cymbal sounds well out into the room, but doesn't quite have the stage depth of the Quad, for example. Tonally, you never get the sense that this amp is harsh; instead it just plays songs in a satisfyingly musical way.

The AI-301DA stands out as highly attractive and compact package, one whose build and finish is superb at the price, and is consummately easy and fuss free to use. I am left wondering quite how Teac has managed to do this for the money ● ▶



Hi-Fi Choice

OUR VERDICT

SOUND QUALITY ★★★★★ **LIKE:** Svelte, musical sound; build; finish; ergonomics
VALUE FOR MONEY ★★★★★ **DISLIKE:** Nothing at the price
BUILD QUALITY ★★★★★ **WESAY:** Gorgeous mini amplifier that's great value
FEATURES ★★★★★

OVERALL

★★★★★

Group test verdict

The verdicts are all in and checked and it's down to **David Price** to reveal the final results of this month's compact integrated amplifiers test

CONSIDERING THESE SIX amplifiers are purposed to do very similar things, it is surprising how diverse they proved. First, it's important to point out that none of them, with the exception of the Quad, can step into the shoes of a high-quality conventional integrated amplifier. That said, considering their great functionality, connectivity and small size, none of these baby amps did badly. Use them for small spaces, study/bedrooms and kitchens, and you'll be delighted by what they do.

The Pro-Ject was least impressive; it's a nice little thing and some are

going to love the MM phono stage, but it just didn't sound grown up enough to really cut the mustard in what is a pretty competitive group. Next was the NAD; it has a fulsome tonality and is nice enough to listen to, but it just couldn't match some of the rival (and cheaper) designs here.

This is where the rankings get tough, because standards begin to get high. The Monitor Audio A100 is awarded fourth place; in sonic terms it would be higher, but as a package – taking into account build, style and ease of use it's just not as universally attractive as its three rivals.

The Cambridge Audio Minx Xi is ranked third. In every respect apart from ergonomics, it does superbly well at the price and provides really tough competition for the top two. I particularly liked its sound as a network music player, but it performed well across the board.

In second place is the Teac. This amp just shouldn't be this good at the price. Despite being a Class D model it sounds really good and is a whisker ahead of the excellent Cambridge Audio. The Teac's all-round packing is also better and performs brilliantly here.



WINNER

The Quad Vena takes the gong. True, it's not quite as small or even as sophisticated as some here, but it offers you real hi-fi sound in a small box, which sports a fine-sounding DAC built in, and implements aptX Bluetooth well. It's an innately enjoyable and detailed performer.



	Cambridge Audio Minx Xi	Monitor Audio A100	NAD D 7050	Pro-Ject MaiA	Quad Vena	Teac AI-301DA
Price	£400	£400	£700	£400	£600	£400
Sound	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Value	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Build	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Features	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Overall	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
	Fine sounding integrated that's highly versatile and great value	Serious performer with its own unique style and versatile placement options	Rich sound and lots of wireless options for playback from all your home devices	Versatile little amp, but sonically rather bland – MM input is a real plus, though	Powerful, detailed hi-fi sound via all inputs makes this a very worthy winner	Superbly packaged, wonderfully finished and nice natured sonic performance

Key features	Cambridge Audio Minx Xi	Monitor Audio A100	NAD D 7050	Pro-Ject MaiA	Quad Vena	Teac AI-301DA
Class AB	Yes	Yes	No	No	Yes	No
Class D	No	No	Yes	Yes	No	Yes
Phono stage	No	No	No	Yes	No	No
AirPlay	No	Yes	Yes	No	No	No
aptX Bluetooth	Yes	No	Yes	Yes	Yes	Yes

TRY WITH THESE

CD TRANSPORT:
Cyrus CDt **£599 HFC 360**

If you want a good CD transport that's small and unimposing, you've just found it. The Cyrus outputs a very good digital audio stream to any of these DAC-equipped amps. It's diminutive design means that it will fit perfectly with your mini system.



FLOORSTANDING LOUDSPEAKER:
Monitor Audio Silver 8 **£1,295 HFC 387**

Expensive yes, but these speakers will get the best out of any of the amps, especially the Quad. With a quoted sensitivity of 90dB they're easier to drive for the lower powered members of this group than the smaller stand mounters, and have a clean, detailed sound with plenty of punch and polish.



STANDMOUNT LOUDSPEAKER:
Q Acoustics Concept 20 **£350 HFC 372**

Anyone looking for a pair of small bookshelf (or stand mounting) speakers to partner these small amps will find much to love in the Concept 20s. They're very sweet sounding for a budget box, meaning they won't show up the amp or digital source. The lovely gloss finish should fit right in, too.

