



# KT88 kit

**Build your own valve amplifier? You can with the World Designs KT88 kit. Tony Bolton looks at the options and listens to two finished models.**

**B**ack in the May 2012 edition of this magazine I got acquainted with the World Designs KEL 84 amplifier. While looking at their website I noticed that the KEL 84 had a bigger brother, the WD KT88. This unit is also available as either a kit or ready built for an additional £375. There are three options to choose from: a single input power amplifier (£1275), a five input integrated model (£1295) and the XL upgraded version for an extra £199 (costing another £45 if bought ready made).

I opted to review the pre-built version of both the standard

integrated and the XL model.

Visually there is nothing to tell between these amplifiers until you peer inside. Then you will find the 'tuned' XL equipped with Schottky diodes for both the main rectifier and heater supplies, Pi filter DC heater supply, Soniqs ICT signal cables along with Soniqs SAX signal path and Rifa low ESR power capacitors.

The external casework comes with a black powder-coated chassis and a brushed alloy front panel. This balances visually with the black bodies of the transformers, each of which are topped with chrome plated covers. No valve covers are provided so a little care is needed

when moving the unit. Apart from the Golden Dragon KT88 valves which give this amplifier its name, the top of the chassis is populated by two JJ ECC833 input stage valves, and a 5687 phase splitter/ driver stage. There is an option of using Svetlana 6550 output valves should you prefer, at no extra cost.

The power switch is at the back of the unit, alongside the gold plated phono sockets for the line level inputs and tape output, and the four pairs of speaker terminals, which allowed me to bi-wire my loudspeakers in my usual manner.

Front controls are limited to the rotary input selector and an

Alps Blue volume control. These are operated by nicely weighted, chromium plated, solid brass knobs. After switching on, the LED on the left of the fascia glows red while the heater voltage is applied to the valves. This changes to orange as the amp warms up, and then to yellow when it is ready to use. If the light glows either green or red while in operation it indicates that a fault has occurred.

I started my listening with the standard unit powering the downstairs system. Although the 4 Ohm Charios are rated at 91 dB efficiency, their twin subwoofers make them quite current hungry. The minimum recommended power requirement is 60 Watts per channel, so I was pleasantly surprised at the amount of volume available, given this amplifier's relatively modest rated output. A comfortable listening level was achieved with the volume control at just past the ten o'clock position.

The first track was Garbage's 1996 CD single of 'Stupid Girl'. It starts with a deep and powerful bass and drum line that, through this amplifier, pulsed into the room in a rather firm handed manner. It sounded assured and even handed, not taking over the space but leaving the listener in no doubt as to its presence. Part of its appeal lay in the speed and lack of a perceived overhang of the notes. This track has a reasonably fast gait, with a bit of a roll to it, and the swing of the rhythm can very easily fall apart if a part of the system is not reproducing it cleanly. The WD KT88 relayed the music in a precise and balanced

manner, getting into the groove of the beat, but keeping things well under control.

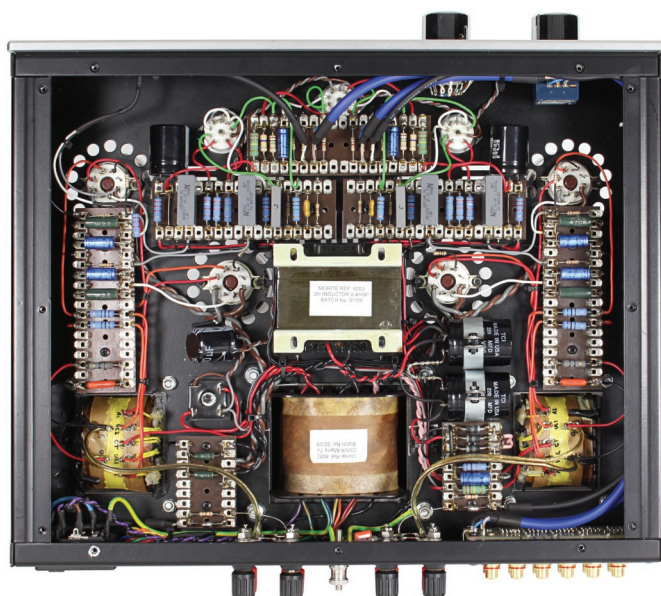
After this I played the Motown classic, 'The Tracks Of My Tears'. Smokey Robinson's distinctive vocals sobbed out of the speakers, backed by the Miracles, grouped around him in close harmony. Whilst the soundstage was not the widest that I have heard it was quite deep and seemed to be very well defined. I felt that there was a slightly authoritative hand drawing the sonic picture for me. The shapes sketched out with deft but firm strokes.

The same presentation worked very well with Dave Brubeck's version of the track 'At The Darktown Strutter's Ball'. Recorded in the same year as the ground breaking 'Time Out', the LP 'Southern Scene', contains more conventionally timed jazz versions of American folk songs and spirituals.

This first pressing, American stereo, 6-eye Columbia disc has survived in very good condition, and the combination of the seeming simplicity of the orchestration, combined with the down to earth presentation of the music by the amplifier, suited each other well. Gene Wright's bass bopped along on the left hand speaker, with Brubeck's



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**The WD KT88 uses tag boards for hard wired components, to make construction easier. Input switching is through inert gas filled low signal relays.**

piano on the right. Paul Desmond's saxophone swung out centre stage, appearing out of nowhere as though someone had suddenly flicked a spotlight on him. It all sounded effortless and quite believable.

My last choice was a compilation of recordings by Neville Mariner and the Academy running through a few Baroque and early 20th Century string pieces. The 'Prelude' from Greig's 'Holberg Suite' was a pleasure to experience. The preciseness of the image and the almost earthy nature of the tonality helped to make the sound very engaging to listen to.

After this I changed over to the XL version of the amplifier and played my way through all of this music again. There was obviously a family resemblance in the sound between the two units, but the XL seemed to offer a more defined and even better shape to the music. I felt as though the lighting had improved so that I could now see a little



further into the mix, and that all of the sounds had been fleshed out a little more. I would say that the extra £199 that this costs would be money very well spent. In standard form it is a very good amplifier. The XL version becomes something a little special.

I moved this amp upstairs to the far friendlier (95 dB, 6 Ohm) load of my Kelly KT3s and played the Greig again. Not having to work quite so hard suited the moderate power output of the WD KT88 XL, and the music seemed to be presented in a more liberated and open way. The extra headroom offered by higher efficiency speakers really let this unit sing, and it seemed to offer whole new layers of colour and tonal texture for me to explore. It also seemed to be a bit faster when playing the Brubeck LP again. I was already impressed with the way the



the power supply circuit. Matching them with higher efficiency speakers really paid dividends, resulting in a level of openness to the sound that I would usually associate with far more expensive units.

I would imagine that they would be delightful with horn loaded speakers.

I liked the rock like solidity of the sound, from deeply growling double basses, to triangles that rang with the mass of solid metal. It felt fuss free, uncomplicated, yet very detailed. Some amplifiers seem to offer a sound that is very glitzy and glamorous, but somehow lacking a little in substance, this was more organic in presentation, but still sophisticated. Think tweeds and sensible shoes rather than stilettos and designer dresses, but worn in a very 21st Century way by Kate Moss.

For those who wish to try making their own amplifier, the instructions are comprehensive and well furnished with pictures and diagrams. If not, the extra cost of

having it built still makes it very good value. The WD KT88 amplifier, in both forms is excellent, but I would spend the extra on the XL version. It is superb.

#### SYSTEM USED:

Clearaudio Master Solution turntable/ Magnify arm/ Benz Micro Wood SL/ cartridge.  
Leema Acoustics Agena phonostage/ Antilla CD player.  
Chario Ursa Major loudspeakers.

Linn Sondek turntable/ Hadcock 242 Cryo arm/  
Clearaudio Concept MC cartridge.  
Njoe Tjoeb 4000 Reference CD player.  
Kelly KT3 loudspeakers.

# HI-FI WORLD

#### VERDICT

Lucid and detailed sounding amplifier available either as a kit or pre-built.

**WD KT88 (KIT) £1295**

**World Designs**

☎ 44 (0) 7972 055492

[www.world-designs.co.uk](http://www.world-designs.co.uk)

#### FOR

- full and rich tonality
- very grounded sound
- XL version good value for money
- good power reserves

#### AGAINST

- nothing at the price



bass could stop and start, but the XL model took this up to a greater level of accuracy, with the result that the music appeared to move more naturally and to flow in a more lucid manner.

I have really got to like this pair of amplifiers. There was a maturity in the sound that was both commanding and reassuring. I never felt that either amp showed any strain, even when driving the Charios to quite loud volumes, which demonstrates the quality of both the transformers and

#### MUSIC USED:

'The World Of The Academy Vol. II'. The Academy Of St-Martin-In-The-Fields directed by Neville Mariner. Argo Records. SPA/A 163. 1971.

Dave Brubeck Quartet, Trio and Duo. 'Southern Scene'. Columbia Records. CS 8235. 1959.

Smokey Robinson and the Miracles. 'Greatest Hits'. Tamla Motown Records. STML 11072. 1968.

Garbage. 'Stupid Girl'. Mushroom Records. D1271. 1996.

## MEASURED PERFORMANCE

The World Design KT88 kit amplifier developed 26 Watts into 8 Ohms and 33 Watts into 4 Ohms, so its untapped secondary is load matched to a low load, as it needs to be to suit modern loudspeakers, most of which have 4 Ohm bass units. Distortion is higher into a 4 Ohm load but as the WD KT88 produced almost exclusively small amounts of third harmonic under all conditions, this isn't of any great consequence. The reason for using a single secondary winding is to improve coupling efficiency between primary and secondary, but the optimum power transfer must occur into a 4 Ohm load, not 8 Ohms, and the WD KT88 looks well designed in this respect.

Frequency response measured flat to 20kHz at all volume control positions. There is a +4dB subsonic bass peak and this is due to the proportioning of coupling capacitors in the amplifier and the feedback loop. Increasing coupling capacitor values to broaden open loop gain will eliminate this peak. Subsonic gain isn't such a good idea in a valve amp as it promotes subsonic core saturation in the output transformer.

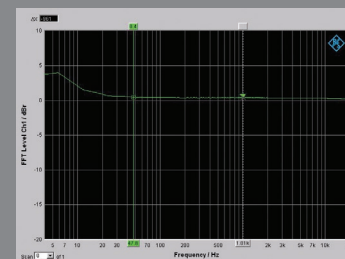
Distortion levels were very low, especially at high frequencies, measuring less than 0.1%. Third harmonic was dominant and there were no high order components. The transfer function was remarkably stable, so the amplifier will sound very smooth and free from muddle too. Damping factor measured 8, quite high for a valve amplifier, so bass will not be soggy.

The WD KT88 measured very well in all areas and obviously uses quality

output transformers. A few coupling capacitors need re-proportioning to eliminate the bass peak, but this is easily done in a kit. Otherwise WD KT88 is beautifully made and finely crafted with quality components. NK

Power	33 Watts
CD/tuner/aux.	
Frequency response	20Hz-28kHz
Separation	72dB
Noise (IEC A weighted)	-102dB
Distortion	0.07%
Sensitivity	400mV
Damping factor	8

#### FREQUENCY RESPONSE



#### IMPEDANCE

