Earthworks 521 ZDT

**MICROPHONE PREAMP**

Stephen Bennett checks whether Earthworks’ 500 series preamp lives up to its ‘like wire with gain’ claim.

QUAD ELECTRONICS, purveyors of high-quality hi-fi, once used the tag line ‘straight wire with gain’ for its equipment, the implication being that any amplification system should merely increase the level of the incoming signal without adding any coloration of its own. These days, at least when it comes to microphone preamplifiers, the opposite seems to be true, with oodles of products on the market stuffed with valves, transformers, and phynelalin (I made the last one up) purporting to add sonic ‘colour’ to their offerings.

So, is there a need for a preamplifier that just, well, amplifies without adding its own sonic character? Earthworks seems to think so, because, on opening the dinky little aluminium case that the company’s new 521 ZDT 500 series preamplifier ships in, the first thing that strikes you are the words ‘like wire with gain’ printed on the slim manual. So, the gauntlet is down. Does the 521 ZDT live up to this claim, and if so, is this really what recordists want – or need – from a preamplifier?

Earthworks is probably best known for its range of high-quality microphones which have found wide popularity among engineers who are keen on capturing accurate representations of a musical performance, especially in the jazz and classical worlds. So it’s hardly surprising that the company’s first ‘lunchbox’ format preamplifier is designed to add as little of itself to the signal chain as humanly – and electronically – possible.

Based on David Blackmer’s Zero Distortion Preamplifier technology (of DBX noise reduction fame – he really doesn’t like noise) the 521 ZDT is housed in the usual single slot API 500 series case with the power and input and main output connections being provided by the lunchbox chassis itself. The 500 series format really suits preamps as there are usually few controls and the minimal available space doesn’t get cluttered. The 521 ZDT’s black burnished front panel features 48V Phantom powering, a clip LED, a phase flip switch, a standby switch, and a stepped rotary gain control covering +5dB to +60dB in 5dB increments.

Unusually for this type of device, the front also sports a 0.25in TRS output alongside an associated continuously variable attenuator with a gain range of -20dB to 0dB. The controls are sturdy and precise and are well spaced even for my podgy fingers. The 521 ZDT is a solid-state, transformerless design with a completely balanced, Class A internal signal path and a specified frequency response of 2Hz to 100kHz varying by ±0.1dB and 1Hz to 200kHz with ±0.5dB variation. As the pristine design of the Earthworks preamps is to produce the cleanest signal possible it’s not surprising that the company quotes distortion figures of less than 1ppm (0.0001%) from the XLR output and 0.001% from the front panel 0.25in TRS.

Input noise levels are also impressively low at 1.6nV/Hz½ at 20dB gain and 0.6nV/Hz½ at 60dB gain – and that’s easily enough woomph for most mics, including some ribbons. Sadly, you’ll have to look elsewhere if you need dedicated line or instrument inputs.

**IN USE**

So, the 521 ZDT sports the measurements that any ‘wire with gain’ contender should be proud of, but how does it bear up in practice?

Earthworks kindly lent me its SRC40/HC hypercardioid condenser microphone to test alongside the preamplifier, so I put the two to use recording a classical singer and solo violinist. As expected, the captured audio was excellent and, when auditioning the result on my ATC SCM50A monitors, the sense of ‘being there’ was palpable.

Tests with my more usual AKG414 and Neumann KM94 microphones were also impressive – I actually preferred the Earthworks device to my Metric Halo ULN-2 preamplifier in both solo and ensemble recording scenarios, which doesn’t often happen! My transformer-based 80s Neumann U87 can sound a little ‘bloated’ when coupled with a preamp of colour, but the microphone shone on vocals and guitar through the diminutive 521 ZDT, again proving stiff competition for my usual signal chain. Although the terms ‘clean’ and ‘transparent’ come to mind when trying to describe the 521 ZDT, that doesn’t mean it’s without character. Recordings through it have weight and body and take EQ and compression well – the low noise floor being especially useful in the latter processing scenario. Even my cheap Chinese ribbon microphone behaved like a much more expensive transducer when plugged into the Earthworks preamplifier, with plenty of gain to cope with the dribble of current it generates. The 521 ZDT also passed my ‘Shure SM57 test’ – I’ve come to the conclusion that the better the preamp, the better Shure’s unassuming workhouse sounds. Stick a 521 ZDT and a 57 on the snare, hit it (the snare, not the microphone) and you’re done.

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**INFORMATION**

**Feature set**

- Less than one ppm (0.0001%) distortion through XLR output
- Transformerless design with all discrete components (Class A amplification)
- +30dBu output level
- 48V phantom power, polarity reverse, and clip indicator

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