521 ZDT Preamplifier

Zero Distortion Technology Preamplifier for 500 Series Racks



- ZDT Preamplifier Module for Standard 500 Series Racks
- Zero Distortion, Less Than One Part Per Million (>0.0001%)
- Lowest Noise of any Preamp on the Market
- All Discrete Components, Class A Amplification (no ICs in signal path)
- No Electrolytic Capacitors in Signal Path
- Greater Transparency with Minimum Signal Path and Minimum Features
- High Output Level +30dBu
- Full Differential (balanced) from Input to Output (i.e. no internal conversion to single-ended)
- 15-year Warranty

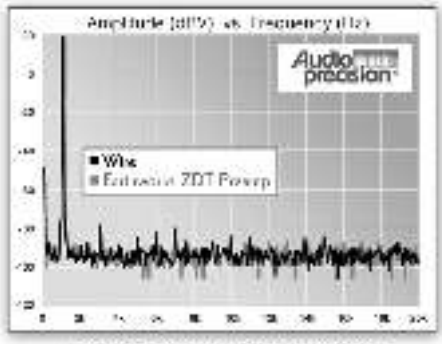
ZDT Preamp for a 500 Series Rack

Earthworks Zero Distortion Technology preamplifiers were previously only available as standard rack-mount units in single, two and four channel models. The new 521 ZDT single channel module will fit into a standard 500 series rack. This provides the user with ZDT pristine amplification at a lower cost per channel, and the ability to choose as many or as few 521 ZDT modules as they desire for their 500 series rack(s).

Zero Distortion Technology -

in amplifiers was invented by David Blackmer, the engineering genius of dbx® and founder of Earthworks®. His goal was to create an amplifier which contributed no audible noise, distortion, or color of any kind - absolutely pure amplification with nothing added, "Like Wire with Gain." And he did it! We proudly present the Earthworks ZDT series of preamplifiers for those who wish to hear no unwanted additives in their amplification.

Many audio engineers have expressed the need for a preamp with "pure gain" which will allow you to hear the true characteristics of a microphone and an artist's performance. Then, if desired add color (signal processing or special effects). David Blackmer's Zero Distortion Technology preamps have incredibly low distortion (less than 1 part per million (<0.0001%). It's like having "wire with gain," meaning pure gain with not color, no distortion, phenomenal headroom and extremely low noise. The 521 ZDT preamps are Class A and made with all discrete components in the main signal path (no ICs) for unparalleled transparency. The remarkable 521 ZDT single channel preamps will fit into a standard 500 series rack. Let "Pure Gain" start working for you, and take greater control of your sound.



Distortion measurements made with the Audio Precision Model One Audio Analyzer.

The Proof is in the Pudding

Many would tell us that our claim of "Like Wire with Gain" was too bold, and may not stand up to scrutiny. So, we decided to measure the distortion of a straight piece of wire on an Audio Precision® Audio Analyzer which is the industry standard for measuring distortion. We measured the distortion of the wire and stored it on one trace, then we measured the distortion of a ZDT preamp channel and stored it on a separate trace. Then we overlaid the two traces, which can be seen in the graphic above. The results show that both the wire and the ZDT preamp have distortion levels so low, that they were immeasurable.

Looking Deeper into the ZDT Preamp

The primary signal path, input to output is fully differential and is balanced all the way through, from input to output (i.e. no internal conversion to single-ended). The gain control for the main signal path is controlled with a precision stepped gain switch from 5dB to 60dB, in 5dB steps. In addition, there is a simultaneous front panel t-r-s output with a variable gain control that allows 20dB of gain variation from each stepped switch setting. When you change gain from the main 5dB stepped gain control, 5dB steps may be too much or too little. The t-r-s output is controlled by a continuously variable potentiometer on the front panel to provide you the exact level you desire.

There is a 48-volt phantom power switch with an accompanying LED indicator and a standby switch to mute the channel output when desired. A clip indicator shows imminent overload conditions (firing at 10% below clipping level). There is also a polarity reversal switch, in addition to a "power on" LED indicator. Follow that up with an impressive frequency response of 1Hz to 200KHz within ± 0.5dB (almost DC to light). The Earthworks 521 ZDT Zero Distortion Technology preamplifiers set a new and impressive standard for 500 series preamplifiers.

More information including complete specifications are on the reverse side of this page.

Architectural & Engineering Specifications

521 ZDT Preamplifier Module

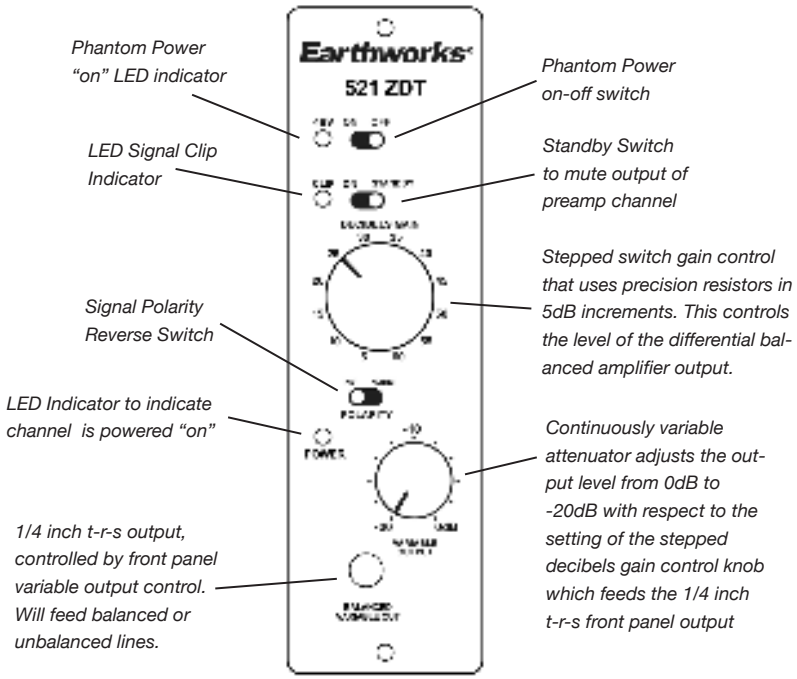
The preamplifier module has a frequency response of 1Hz - 200kHz ±0.5dB and distortion less than one part per million (0.0001%). It shall have an input noise of 1.6nVHz½ at 20dB gain and 0.6nV/Hz½ at 60dB gain and a slew rate of 22V/µs. It shall have a DC offset, servo balanced of ±1 mV typical. Power requirements are ±16 VDC, supplied by standard 500 Series rack. Inputs will be transformerless, differential balanced terminating a 500 Series EDAC Edge connector. Input impedance shall be 10KΩ with phantom on and 100KΩ with phantom off. The amplifier will have a balanced differential output which will only feed balanced signal lines, and a front panel auxiliary 1/4 inch t-r-s (tip+ & ring ref) output connector which will feed either balanced or unbalanced signal lines. It shall have a front panel polarity reverse switch, a standby (channel on/off) switch and a 48V phantom power on/off switch with a phantom power LED indicator. It shall also have a LED clip indicator and DC power on LED indicator. The amplifier shall be available in single channel module for a standard 500 Series rack. The single channel preamplifier will have dimensions of 1.5" x 5.25" x 6" (38 x 133 x 152mm) and occupy one 500 Series rack space, weighing 0.8 lb. (0.36kg). The Earthworks 521 is specified.

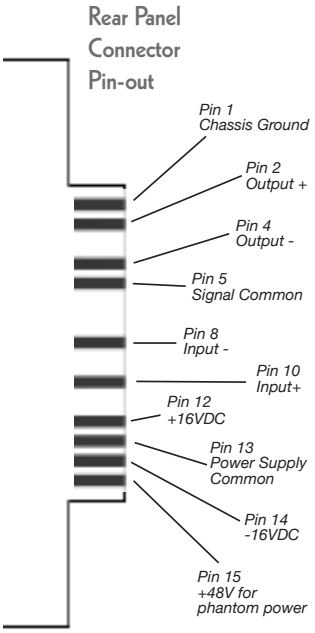
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ZDT the Ultimate in 500 Series Preamplifiers

Many of today's sound and recording engineers choose microphone preamplifiers for their color or unique sound. Earthworks takes a different approach, in making microphone preamplifiers which have "no color" and are "pure" with no unwanted additives. Also, the noise is extremely low and the distortion is immeasurable. There are some professionals who want an uncolored microphone preamplifier that will pass the amplified sound from their microphones untainted, uncolored and unaltered. The Earthworks ZDT preamplifiers are the perfect choice for these individuals. The ZDT pre amplifiers will let you hear all of the character and minute detail of your microphone and the sound it is picking up. Just pristine! Then you can add any additional color you desire with signal processing or other enhancements. The sound of the Earthworks ZDT preamplifiers are "pure" and "transparent" with no added artifacts, no added noise and no added distortion. If it is a pure signal path you desire, then look no further. The Earthworks ZDT 521 500 Series preamplifiers or our standard rack mount ZDT preamplifiers are the masters choice. These preamplifiers are backed by a 15-year warranty. You can't go wrong! Just pick a 521 ZDT module or one of our rack mount models with the number of channels you require and enter the world of pristine preamplification.

521 ZDT Preamplifier Front & Rear Panel Information





Specifications

Preamp Type:	Solid State
Number of Channels:	One
Frequency Response:	2Hz to 100kHz ±0.1dB, 1Hz to 200kHz ±0.5dB
Impulse Response:	1.4µs
Distortion:	main out: less than 1ppm (0.0001%); 1/4" out: 0.001%
Input Noise:	1.6nVHz½ at 20dB gain; 0.6nV/Hz½ at 60dB gain
EIN:	-132dBV at 20dB gain; -143dBV at 60dB gain
Slew Rate:	22V/µs
Output DC Offset:	±1 mV typical, servo balanced.
Input/Output Connector:	500 Series EDAC Edge connector
Input Impedance:	10KΩ phantom on, 100KΩ phantom off
Front Panel Balanced Out:	¼" t-r-s Fem. balanced transformerless (variable)
Dimensions	1-500 series rack space 1.5" x 5.25" x 6"
Weight:	0.8 lb. (0.36kg)

Earthworks ZDT PREAMPLIFIERS
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