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Microphone Preamplifiers

TRUE P2Analog Stereo Microphone Preamp

This high-end unit maintains its transparency, and is now more affordable.

by John Gatski, 9.15.2007

John Gatski is the Publisher & Executive Editor of Pro Audio Review.

[email the author](#)

In 2002, I reviewed the True P2Analog and found it as accurate as any high mic preamp I had ever used — maybe more so. The 2002 price was just a couple hundred bucks shy of \$2,000, so it was priced well below many of its high-end brethren. Five years later, the price has dropped a hundred bucks, a few internal component tweaks have been made, and it is still one of my favorite my preamps for high-resolution recording.



(click thumbnail)

Features

The American-made True P2Analog's feature set has not changed in the six years since its introduction. It still includes its two high-performance discrete mic channels, up to 64 dB of gain, the ultra-useful stereo phase scope, M-S (Mid-Side) decoder for an even wider palate of sound choices and an excellent stereo DI. The 1RU item is still dressed up in its deep red color. But retail price is now \$1,699.

Inside, the P2Analog's dual-servo, discrete circuit is designed with high-grade components to get the best specs possible. Spec-wise, the frequency response is ruler flat from single digit bass frequencies to over 200 kHz, and distortion is lower than most test sets. In fact, you can see how well the preamp measured by checking out Danny Kumin's exclusive PAR bench test.

The front panel includes the separate channel controls for mic gain, 40 - 80 Hz roll-off filter, phase invert, gain, the M-S decoder, level meter, phase scope engage. The back panel sports XLRs I/Os and a set of 1/4-inch balanced outputs for non-XLR connections.

In use

I tried the P2Analog with some of the same mics that I used in '02, including my trusty Audix SCX-25s, Shure KSM 32s and the Lawson L-251 — large diaphragm tube condenser mic (great for vocals). I also threw in a set of multi-pattern Shure KSM-141 instrument mics, and a matched pair of Heil Sound PR-40 end-fire dynamics. For my test, I recorded acoustic guitars (a new Guild D55, my custom 00-28 CF Martin small body) and a Gibson L5CES jazz box played through an original 65 Deluxe Reverb complete with original Jensen speaker.

Customer Service

Recording setup included the aforementioned microphones fed into the preamp via Alpha core solid silver XLR cables. The preamp fed a TASCAM DV-RA1000 high-resolution recorder using a Benchmark ADC-1 A/D set to 24 bit/96 kHz.

After auditioning and recording the guitars through the Audix SCX-25/P2Analog setup, I sat down for a listen. The sound was just as I remembered. Plucks and pick transients were incredibly realistic and accurately detailed using the SCX-25s. In fact, the room reverb detail was maybe a touch more evident with the latest recordings, because I used a higher-quality A/D converter than in '02.

My opinions were only reinforced by subsequent miking sessions. The Shure KSM-141s captured the big Guild's midrange punch just right, while the Heil's big head dynamics sounded great on an X-Y pair recording of the small body custom Martin. In fact, they sounded really good through this P2Analog.

I plugged in a Guild Contemporary Series acoustic/electric with the D-Tar pickup system, and it showcased the transparency of the P2Analog's DI circuit with out any unwanted coloration. That's my kind of DI.

Miking the old Gibson L5 jazz box with the big Lawson and the Deluxe Reverb made a stellar recording at 96 kHz. That pinch of spring reverb from the old Blackface dialed in during the recording session was perfectly relayed by the True/Lawson combo.

I did not have a figure-eight mic around (as I did in the 2002 tests) to try the M-S decoding, but I am sure it sounds just the same. No changes in that circuit.

I cannot say enough good things about the phase scope for setting up matched channels in difficult recording spaces; the features allows you to dial the correct phase coherency for stereo to sounds its most detailed and separate without a hole in the middle. And, like level meters, it is a monitoring tool you come to rely on.

Summary

In a word, the True P2Analog is as good as it was five years ago, maybe better since it is a bit less money. It is highly recommended for almost any high quality microphone/recording session. If you need more channels, however, buy True's Precision 8.

BENCHTEST**Bench Measurement Data**

(Unless otherwise specified, all tests reflect signals applied to the balanced Input 1 to balanced Output 1, with measurements bandwidth of <10 Hz to 30 kHz, and worst-case results.)

Input Impedance (1 kHz)

5700 \emptyset

Output Impedance

55 \emptyset

Output Polarity

Non-inverting

Input Overload Mic (1 kHz, Mic w/wout pad)**Fast Facts****Applications**

Studio

Key Features

Two discrete channels; up to 64 dB of gain; stereo phase scope; M-S decoder; stereo DI; high-pass filter; XLR and 1/4-inch balanced I/Os; 48 V phantom power; pleasing deep red color; 1RU footprint

Price

\$1,699

Contact

True Systems | 520-721-2735 | www.true-systems.com

+22.2/+16.5 dBu (Gain off/on)

Gain

(Mic, Gain off) 3.2 to 52.3 dB

(Mic, Gain on) 14.9 to 63.3 dB

(DI-in, Gain off) -15.6 to 32 dB

(DI-in, Gain on) -4.1 to 43.7 dB

Maximum Output: (1 kHz)

+26.4 dBu (Gain off)

+30.8 dBu (Gain on)

Frequency Response (10 Hz to -3 dB point):

<10 Hz->200 kHz, +0, -0.1 dB

THD+noise (at 1 kHz):

0.0008%

S/N (A-wtd.)

-101.1 dBu

E.I.N.

>129 dB

Channel Separation

>94 dB, 20 Hz to 20 kHz

Inter-channel Phase Error (A-D)

<0.6 deg. 50 Hz to 20 kHz (M-S bypassed)

Bench measurement commentary

The True Systems P2 Analog gets an A+ in every subject. In fact, I'm pretty sure they can't make an audio component with gain much cleaner, or much flatter than this—and even if they can, I'm even more certain that I can't measure it.

Fig. 1 shows a spectral analysis of THD+noise for a +4 dBu 1 kHz signal; this doesn't tell us much except that the P2 is very, very, quiet, and very, very clean: the first two harmonics are barely visible, but after that it's anybody's guess. Similar sweeps of other signal levels and frequencies did not reveal any meaningful differences, short of the overload or clipping points.

Fig. 2 shows the same test as Fig. 1, but with a +22 dBu signal, and the P2 approaching its clipping point. The odd harmonics tend to dominate, as expected, suggesting that it's a good idea to leave a couple dB headroom at both the input-overload and max-out ends.

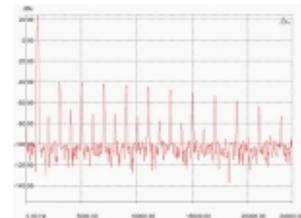
Fig. 3 is a spectrum of noise in dBu, with the input shorted. The P2 is very, very quiet: even whatever vestige of powerline influence that can be seen at the left edge is 110 dB down.

With Fig. 4 we're looking at a sweep of THD+noise versus frequency, for a +4 dBu signal. The little hump around 10 kHz is probably environmental



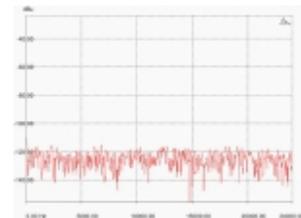
(click thumbnail)

Fig. 1



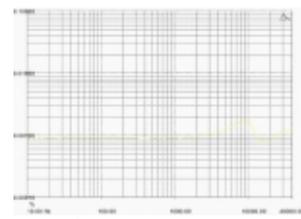
(click thumbnail)

Fig. 2



(click thumbnail)

Fig. 3



(click thumbnail)

Fig. 4

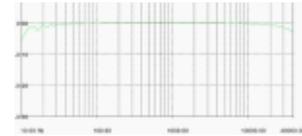


pollution from PC monitor sync signals and the like, and not truly in the signal. I repeated this test with various signal levels, but the results did not change substantially short of overload or clip points.

Fig. 5 plots frequency response for a -20 dBu signal: note the vertical scale (± 0.3 dB: my Prism dScope III only sweeps to 45 kHz, but the Audio Precision System One goes to 200k, where the P2 was down a whopping 0.2 dB, so I have no reason to doubt True's -3 dB spec of 500 kHz.

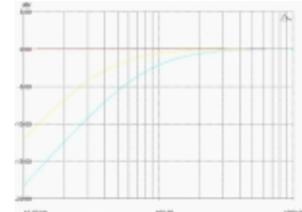
Fig. 6 displays another frequency-response plot, this time showing the action of the P2's selectable high-pass filters. Labeled 40 Hz and 80 Hz, these are in fact -3 dB at about 45 and 100 Hz respectively.

— D. Kumin



(click thumbnail)

Fig. 5



(click thumbnail)

Fig. 6

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