Search

# CAPI, Inc. Heider FD312 WHR4

view larger photo

1

Description

The Heider FD312 is a special and unique preamp module that stands out in today's crowded 500 series market. The preamp stage has been carefully modeled after the preamps in the famous Wally Heider Recording Studio 4 console custom built by Frank DeMedio circa 1972. The original pre's were stock 312 cards slightly modified by DeMedio. Frank's mod was centered around removing the (1:7) AP2622 input transformer and replacing it with a custom wound Ed Reichenbach (1:8) RE-0887. The only differences to the audio path are how DeMedio treated the RE-0887. He removed the commonly used 1000pF decoupling capacitors found on the AP2622's primaries. He also removed the Zobel network from the secondary. Instead of a typical Zobel network he used only a low value load resistor. Besides being just enough to safely dampen any high frequency ringing, this load resistor creates an unusually low input impedance and a slightly higher than typical THD. All of this geek talk equals a very special tonal quality with some of the most buttery smooth mids you will ever encounter! CineMag has done a fantastic job with the current RE-0887's, working straight off of Ed Reichenbach's original notes and winding data from 1972. For those who don't know, Ed Reichenbach's son Tom went on to form CineMag in 1979 after working with his father for some 25 plus years. I am so very glad they kept all of the old notes!

To enhance this special preamp circuit even further, I chose to employ a stepped "fader" and active booster stage, very reminiscent to my popular 2-stage VP28 preamp. This is essentially the same booster circuit that was used in the early to mid '70's vintage API consoles. In remaining true to the 312 circuit, all AC coupling capacitors have been removed from the audio path. I don't think coupling caps are evil, they are just not needed in this particular circuit. This fader booster stage has 12dB of gain "in hand", exactly like a real console. This allows for many different gain combinations. You can crank the fader and reduce the preamp gain or in contrast, attenuate the 2nd stage and crank the preamp gain for some sweet, additional harmonic content.

The original Heider/DeMedio 312 cards used stock AP2503 output transformers, as found on all 312 cards. With the desire to have something unique, I was luckily able to persuade David Geren of CineMag to create his very own version of the AP2503. Through our conversations regarding this project, David said that he had been asked many, many times over the years to wind an AP2503. Until now, he had always denied these requests. Somehow I was able to convince him to proceed and the CM-

The original Heider/DeMedio 312 cards used stock AP2503 output transformers, as found on all 312 cards. With the desire to have something unique, I was luckily able to persuade David Geren of CineMag to create his very own version of the AP2503. Through our conversations regarding this project, David said that he had been asked many, many times over the years to wind an AP2503. Until now, he had always denied these requests. Somehow I was able to convince him to proceed and the CM-3301 was born. In trying to be loyal to the console signal path, both gain stages have a CM-3301 output transformer. While the preamp stage output transformer is not an exact requirement, it does provide 6dB of gain, blocks DC from the stepped fader and imparts a little more character into the overall circuit.

The operational amplifiers are the pure heart of a preamp like the Heider FD312. I naturally wanted to stay as close as possible to the early '70's 2520's. In a current commercially available product, Scott Liebers' SL-2520 Red Dots were a no-brainer choice. As most of you already know, they perform and sound outstanding all while having a very long life expectancy due to their un-potted construction. Each Heider FD312 contains two of these glorious Red Dots.

In a goal to stay domestic, I would like to point out some interesting info. The Heider FD312 is assembled by a Chicago area electronics contract manufacturing house. Not the cheapest guys around but their work is outstanding. Each and every FD312 is fully tested, calibrated, burned in and packaged by myself, at the CAPI laboratory. The following items used in the build are fully manufactured in the USA: All metalwork including zinc plating, anodizing and silkscreen printing, PCB's, all transformers, opamps, aluminum control knobs, colored knob inserts and Grayhill switches. That basically leaves board level components as the only imported items.

Street Price: $799 available from Rack-N-Roll Audio, Nashville

Key Operating Features:

In MIC mode, the stepped PREAMP GAIN ranges from +22dB to +57dB, with an input impedance of 167 ohms.

In LINE mode (MIC pushbutton out or disengaged), the stepped PREAMP GAIN ranges from -14dB to +21dB, with an input impedance of 9K ohms.

Engaging the Hi Z pushbutton in MIC or LINE mode will increase the gain by 3dB. In MIC mode, the resulting input impedance will also be raised to 300 ohms. Since the upper ten PREAMP GAIN steps are also in 3dB increments, this allows for many creative tonal combinations.

The PAD pushbutton equates to 16dB of attenuation in either MIC or LINE mode. With the PAD pushbutton engaged while in MIC mode, the input impedance is 765 ohms.

The stepped CHANNEL FADER switch and 2nd stage booster amp provide a range of –16dB to +12dB in addition to the above-mentioned preamp gain ranges. This equates to a maximum gain of 69dB when in MIC mode and 72dB when in MIC mode with the Hi Z pushbutton engaged.

Accurate metering of the final output signal is achieved using LM339 quad comparators in a "console" style configuration.

Physically and electronically fully VPR compliant.

Call Rack-N-Roll to purchase a Heider today! 615-244-6499

Specifications:

- MIC Preamp Gain Range: +22dB to +57dB (+3dB with Hi Z engaged)
- LINE Preamp Gain Range:-14dB to +21dB (+3dB with Hi Z engaged)
- 2nd Stage Booster Gain Range: -16dB to +12dB
- Pad Attenuation: -16dB
- MIC Mode Maximum Input Level: +6dBu, < 1% THD
- LINE Mode Maximum Input Level: +28dBu, < 1% THD
- MIC Input Impedance: 167 ohms, 300 ohms W/Hi Z engaged, 765 ohms W/PAD engaged
- LINE Input Impedance: 9K ohms
- Output Impedance: 70 ohms, transformer balanced
- Maximum Output Level: +29dBu, < 1% THD
- Frequency Response: +/- 0.25dB 20Hz to 20kHz
- Equivalent Input Noise: -115dBu unweighted (-93dBu actual metered noise)
- Distortion: Less than 0.03% @ +4dBu output
- Current Draw: Less than 101mA (under typical operating conditions)
- Meter Scale: -22 to +16 in 12 LED segments, 0VU = +4dBu