COMP-3A Jr

Vintage Style Compressor / Leveler

INTRODUCTION

Congratulations on choosing the Golden Age Project COMP-3A Jr Compressor / Leveler!

The COMP-3A Jr is a one channel vintage style Compressor / Leveler. The signal path uses only discrete components like resistors, capacitors, diodes and transistors. The input and output is transformer balanced, using two different transformers, each one optimized for its purpose. This is the way audio components were built before integrated circuits became available.

Integrated circuits are small and cheap and widely used in most modern designs. The drawback is that audio components built with modern technology doesn´t always provide the best perceived sound quality or the type of character that the modern user desires.
The subjective sound quality delivered by vintage equipment is often prefered over the one delivered by modern units, a situation that is even more obvious now when music is recorded with clean-sounding digital audio equipment.
This is the reason why so many vintage audio components are cloned and produced again and also why the vintage originals are often very expensive on the second hand market.

The circuit used in the COMP-3A Jr is based on classic design elements and it uses an integrated optocoupler to control gain. This gives the COMP-3A Jr a unique compression characteristics. In addition, the vintage style signal path adds a wonderful and musical character to the sound. The ease of use with only two main controls makes it very simple to achieve the desired sound. These attributes has made vintage products with a similar design favourites of engineers and musicians worldwide.

A classic sound and compression style is now available at a very affordable price point with the COMP-3A Jr.

FEATURES

- Vintage style electronics. No integrated circuits in the main audio signal path.
- Transformer balanced input and output. Can drive almost any load, balanced or unbalanced. The maximum ouput level is 25 dBu.
- Uses an integrated optocoupler to control gain. The fastest attack time is about 1 ms.
- Very simple to operate with only two main controls, Gain Makeup and Gain Reduction.
- Three-position TIME switch to select different combinations of Attack- and Release time.
- Selectable jumpers inside the unit to increase the timing on TIME-switch position B and C.
- LED-meter selectable to show output level or gain reduction.
- Hardwire bypass switch for easy comparisons.
- XLR and TRS input and output jacks for flexible connections.
- Link jack for connecting to another unit for stereo operation.
- All external controls located on the front panel.
- External power supply to avoid interaction with the audio circuits and transformers.
- Compact 1RU quarter rack format. Up to four units can be mounted in our 19-inch rack kit, the UNITE MKII.
- A solid build quality that will last many years of normal use.

CIRCUIT DESCRIPTION

The signal is fed through the bypass relay to the input transformer and then on to the gain reduction circuit which consists of a R1/R2 resistor network, ie a serial resistor (R1) connected to a parallel resistor to ground (R2), this resistor is the photo resistor inside the opto-coupler. The optocoupler consists of a LED (light emitting diode) that emits light on a photocell, the resistance of the photocell depends on the amount of light.

Since the resistor network lowers the signal level, it is followed by a gain stage consisting of one 2520-style operational amplifier. This amplifier uses only discrete transistors, diodes, capacitors and resistors.

The signal is then fed to the Gain Makeup potentiometer and onwards to the output stage consisting of one more 2520-style operational amplifier and the output transformer that delivers a balanced and fully floating signal to the output jacks.

The sidechain circuit derives its signal from after the R1 resistor. The Gain Reduction potentiometer regulates the level and it then passes through several integrated amplifiers that conditions the signal so that it is suitable for driving the LED in the optocoupler.

The higher the input voltage the more light is emitted on the photocell, it´s resistance decreases as the light intensity increases, thereby bringing the audio signal closer to ground in the R1/R2 resistor attenuator network resulting in a lower level in the main audio signal path.

The basic attack and release time is decided by the characteristics of the optocoupler. The COMP-3A Jr has a TIME switch though that offers the user several timing options.

There is also a selectable sidechain high pass filter available, -3dB @ 250 Hz, 6 dB/octave.

USING THE COMP-3A JR

The best way to explore the possibilities of any compressor and how different settings affects the sound of different sound sources is to experiment. You can also find a lot of information on the www helping you to understand how compressors work and how to use them.

To get started with using the COMP-3A Jr:

- Connect the cable from the power adaptor to the 24V AC jack at the back of the unit. Power on the unit with the switch on the front panel.

- Connect your audio source to the input jack on the back panel and one of the output jacks to the next unit in the signal chain. Please note that the TRS and XLR jacks are connected in parallel.

- The GAIN MAKEUP control sets the output level. A setting of about 2,5 on the scale will result in a gain of 0 dB with no compression. There is approximately 24 dB of extra gain available from the 0 dB gain setting.

- Turn GAIN REDUCTION clockwise until you get the desired amount of compression, then compensate the lower output level by increasing GAIN MAKEUP. The maximum compression is about 20 dB with an input level of +4 dBu.

- Engaging the high pass filter will make the compression action less sensitive to frequencies below 250Hz.

- You can easily check the effect of the processing in the COMP-3A Jr by using the IN/OUT switch, the unit is completely removed from the signal path in the OUT position.

THE TIME SWITCH

The attack and release time can be adjusted using the three position Time switch.
Position A has the fastest attack and release, the timing is similar to the one in UA´s LA-3A.
Position B has a slower attack time, the timing is similar to the one in the Golden Age Project COMP-3A.
Position C increases the attack time further.

The attack and release time of position B and/or C can be increased by moving jumpers inside the unit. There are two circuit board connectors close to the front panel:
1. "T-B" (right behind the TIME switch)
2. "T-C" (to the right of the IN/OUT switch and R25)
Each one of them has two metal pins that can be connected together by a jumper that by default from factory is only mounted on one of the pins.
If you want to increase the attack and release time for the B and/or C position, relocate the corresponding jumper so that it covers both pins,

THE METER

The approximate amount of gain reduction can be diplayed by selecting GR on the meter switch and view the scale to the right of the LED bar. The normal reading is 0 VU with no compression applied.
The output level can be displayed by selecting VU on the meter switch. The scale to the left of the LED bar is then applicable. A VU reading of 0 indicates that the output level is about 4 dBu (1,23V RMS) which is the nominal operating level.

STEREO OPERATION

For stereo operation, the sidechain of two COMP-3A Jr units can be linked together through the LINK jack on the back panel, using a TS cable. The compression action can be balanced using the front panel controls on both units but it will be affected by the tolerances of the optocouplers.

WARRANTY

The COMP-3A Jr is built to last. But as in any electronic device, components can break down.

There is a fuse located inside the unit. If the unit dies, please check this fuse. If it has blown, replace it with a new one. You can also try with another 24V AC adaptor if you have one available.
If this doesn´t help, or if the unit has another problem, it will need repair and you should then contact the reseller where you bought the unit.
The warranty period is decided by the distributor for your country. The distributor will support Golden Age Project resellers and end users with repairs and spare parts.

REGISTRATION

You are welcome to register your unit at our website:
www.goldenageproject.com

Thank you for choosing the COMP-3A Jr!
I hope it will serve you well and help you in making many great sounding recordings.

Bo Medin

Vintage character for modern ideas!