COMP-554 MKII

Vintage Style Compressor for the 500 Series rack format

INTRODUCTION

Congratulations on choosing the Golden Age Project COMP-554 MKII compressor!

The COMP-554 MKII is a one-channel vintage style compressor for the 500-format. The signal path uses only discrete components like resistors, capacitors and transistors. The input and output are transformer balanced and the unit also uses a third interstage transformer.

This is the way audio components were built before integrated circuits became available. IC´s are small and cheap and they are widely used in most modern designs. It is clear though that audio components built with modern technology doesn´t always provide the best perceived sound quality or character that the modern user desires.
On the contrary, the subjective sound quality delivered by vintage equipment is often prefered over the one delivered by modern units. 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 class-A circuit used in the COMP-554 MKII is similar to the one in the classic 2254 compressor that was designed in 1969. It quickly became a legend due to it´s totally unique sound character that is warm, smooth, sweet and musical.
These characteristics have been heard on countless recordings through the years and it is a versatile sound that works very well on many sound sources and in many genres. The essence of this sound is now available at a surprisingly low cost, making it available to nearly everyone.

FEATURES

- Vintage style electronics. No integrated circuits in the signal path.
- Based on a classic diode bridge design.
- Transformer balanced input and output.
- Prepared for a Carnhill transformer upgrade.
- Flexible control range for threshold, ratio, attack and recovery.
- All controls except the gain make-up one are stepped.
- Three selectable sidechain filter frequencies.
- Three flexibel sidechain options; Internal, Insert and External.
- The external sidechain I/O is electronically balanced @ 4 dBu and appears on the right slot rack connections.
- Separate switches for hardwire bypass and compression out for easy comparisons.
- Two insert connectors for inserting the EQ-573 in the main audio and/or sidechain signal path.
- Meter selectable for output (two reference levels, +4 and +12 dBu) and gain reduction.
- Possibility to link two units for stereo operation.
- Three position Air EQ switch, Flat, +3 or +6 dB @ 30 kHz.
- Two position output termination switch for different tones.
- A soft start circuit that ramps up the supply voltage slowly (about 10 sec.) to avoid a power-on current surge.
- A great sound that suits most sound sources and genres.

CIRCUIT DESCRIPTION

The signal first enters the input transformer, a damping network and is then passed on to the diode bridge where the actual gain reduction is taking place. It is followed by a balanced FET-transistor stage. Then follows an interstage step-up transformer that feeds the sidechain circuitry and a three transistor gain stage followed by the gain potentiometer and the insert jack.

The signal then goes to the output stage. This stage again uses only three transistors, the last one in the chain is a hefty 2N3055 power transistor running in class-A mode, driving the output transformer.

So, all in all, the complete signal chain only contains a maximum of ten active elements. Compare that to the big number of transistors that are usually used in one single integrated circuit!

MODERN VERSUS OLD

It is true that there are some great IC´s available today that achieves very low levels of static and dynamic distortion.The simple circuits that the COMP-554 MKII uses, and even more so the transformers, cannot match the low distortion specifications of modern IC´s.
It is the distortion components that imparts a sound character to the audio signal and, if the distortion components are of the right sort, this is a good thing since it makes the recorded voice or instrument sound "better", more musical, more pleasing to the ear. This is one reason why vintage style units are so popular today.
Sometimes, transparent units are prefered over colored ones. It´s all about taste and it depends on the genre. For most modern music styles though, color and character is definitely a good thing.

USING THE COMP-554 MKII

The best way to learn using a compressor is by experimentation. A compressor can be set to do its job, which is to lower the dynamic range of a signal, more or less invisible or it can be used as a creative tool, affecting the sound in a big way. You will find a lot of information about how to use and adjust compressors on the internet.

- As a start, you need to mount the COMP-554 MKII in a 500 series rack unit. There are a number of alternatives available from different manufacturers, the COMP-554 MKII should work fine in most of them. Make sure that the rack unit power supply is turned off when you mount or remove the COMP-554 MKII.

CONNECTING THE COMP-554 MKII

The Line in- and ouput is found on the connectors in the 500 rack corresponding to the left hand slot of the two rack slots that the COMP-554 MKII occupy. Since the unit is transformer balanced, it usually doesn´t matter if you use a balanced or an unbalanced unit before and after it.

CONTROLS

THRESHOLD: This sets how high the signal must reach before the compressor kicks in.

RATIO: This sets how much compression is applied in ratio to the dB rise in signal level above the threshold.

ATTACK: This sets how fast the compressor kicks in once the threshold has been breached.

RECOVERY: This sets how fast the compressor lets go, once the input signal has dropped back below the threshold.

SC HP: Adds a high pass filter in the sidechain circuitry unless "OFF" is selected. Frequencies below the filter cut off will trigger compression to a lesser degree.

GAIN: This changes the make-up gain between 0 to about 20 dB so that the ouput level can be adjusted to a suitable level.

LINK: Is used to synchronize the compressor action in two COMP-554 MKII units working as a stereo pair to prevent image shifting that could occur if each channel is compressed individually and content in one channel is louder than that in the other.
Connect a cable between the CZ4 jacks (located at the bottom of the left hand circuit board) on the back of the unit. Make sure the cable is not damaged when mounting the units in the rack. Set the LINK switches in the upward position and match the controls on both units.

OUT: Pressing this switch removes the compression action, the signal still passes through the circuitry though so you can compare the sound with and without compression.

METER SWITCH: Select the meter to show output level at two different reference levels or gain reduction.

BYPASS: This is a hardwire bypass, meaning that the signal is fed from the input jack directly to the output jack when this switch is pressed. You can then easily compare the sound with and without the COMP-554 MKII in the signal chain.

TERM: The output transformer is made for having an ideal load of 600 ohms. Most modern equipment have an input impedance of 10 kohm or more. When the COMP-554 MKII drives a modern unit, the output level will increase and the higher frequencies will be slightly accentuated.
If you connect the COMP-554 MKII to a modern unit, the switch should usually be set in the 600 or 2k position. You can always let your ears decide which position you prefer, the switch can be used as a three position subtle high frequency eq.

AIR EQ SWITCH: There are two position for adding a boost centered around 30 kHz, AIR1 adds 3 dB, AIR2 adds 6 dB.

SIDECHAIN SOURCE SWITCH: There are three selectable positions.
- INTERNAL: The sidechain signal is sourced from the main signal path with nothing in between.
- INSERT: The sidechain signal passes the CZ13 Insert jack located on the top of the small right hand circuit board at the back of the unit. The jack is made for connecting one of our EQ-573 units, allowing you to equalize the sidechain signal and thereby the compression action.
- EXTERNAL: The sidechain signal passes through the 500 rack connectors corresponding to the right hand slot of the two slots used by the COMP-554, allowing you to insert an external equalizer in the sidechain signal path. You can also feed an external signal to the sidechain input to do ducking. The operating level is + 4dBu.
PLEASE NOTE: The external sidechain connections can only be used with external units that have balanced connections, they do not work with unbalanced connections.

MAIN AUDIO PATH INSERT JACK: There is an unbalanced insert jack (CZ7) located on the top of the left hand circuit board at the back of the unit. Connecting our EQ-573 module will give you a great comp + eq combination where the eq will be located after the compressor. Please note that you must remove the black plastic jumper above the Insert jack to activate it.

LEVELS AND METER CARE

Care must be taken to protect the meter from physical overload when it is set to show output level. If the needle is hitting the end of it´s travel for prolonged periods, there is a risk that the meter will be damaged. This is not covered by warranty.
The meter is calibrated from factory to show 0 VU when the output level is about +4 dBu (or 1,23 volts) with the meter switch in the +4dB position. Set the meter switch to the +12dB position if the meter is hitting the end of scale.

WARRANTY

The COMP-554 MKII come with a limited parts and labor warranty. It is built to last, but components can break down.
If your unit need repair, please contact the reseller where you bought the unit, they will direct you to the distributor for your area that handle repairs.

The warranty period and terms are decided by the Distributor for your country. The Distributor will support Golden Age Project resellers and end users with spare parts and repairs.

REGISTRATION

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

I would like to thank you for chosing the COMP-554 MKII!
I wish you much joy with the unit and I hope that it will help you in making a lot of great sounding music.

Bo Medin

Vintage character for modern ideas!