



SA-4000 MK2 - USER MANUAL

IMPORTANT SAFETY INSTRUCTIONS



The lightning flash with the arrowhead symbol, within an equilateral triangle, is to alert the user to the presence of non insulated dangerous voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to humans.

The exclamation point within an equilateral triangle is intended to alert the users to the presence of important operating and maintenance.

All the following safety and operating instructions should be read before operating the unit.

Caution to reduce the risk of electric shock

- Do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

Caution to reduce the risk of fire or electric shock

- Do not expose the equipment to rain and moisture.
- The equipment shall not be exposed to dripping or splashing liquids and no objects filled with liquids shall be placed on the equipment.
- To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions.
- Repairs have to be performed by qualified service personnel.
- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this equipment near water.
- Clean only with dry cloth.
- Do not block any ventilation openings.
- Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources

- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the equipment.
- Use only attachments/accessories specified by the manufacturer.
- Unplug this equipment during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the equipment has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the equipment, the equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
- The equipment shall be connected to a MAINS socket outlet with a protective earthing connection.
- Correct disposal of this product: This product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.
- Do not install in a confined space.
- Do not place naked flame sources, such as lighted candles, on the equipment.
- Please keep the environmental aspects of battery disposal in mind. Batteries must be disposed-of at a battery collection point.
- Use this equipment in tropical and/or moderate climates.
- Stam Audio accepts no liability for any loss which may be suffered by any person who relies either wholly or in part upon any description, photograph, or statement contained herein. Technical specifications, appearances and other information are subject to change without notice.

1.0 INTRODUCTION

With a lot of companies coming up with an affordable stereo buss compressor clone, we decided it was time to step up our game and take it to the next level. While we were proud of the first SA4000 units and still think they are great sounding machines, we knew there was something missing, and the best word to describe it was character.

In 2018 we set out to build the best sounding bus compressor we could achieve and the only way to do that was to get closer to the original design. However, there was one problem; we had to bring back to life the DBX 202C VCA can, an obsolete, fully discrete and extremely time consuming piece of hardware that was the heart and soul of every early Oxford made desk, so we did.

The SA4000 MK2 Stereo Buss Compressor is the most authentic recreation of the bus compressor found in the center section of the legendary G Series Console. An overwhelming favorite among mix engineers, the G Comp has very likely shaped more hit records than any other over the past three decades. Strap it across your 2-bus and hear your mix get punchier, bigger, more powerful, and glued together with unmatched cohesiveness. The SA4000 MK2 Stereo Buss Compressor gives you the same famous character, compression behavior, and frequency response as the original. And it does it at a fraction of the price.

The SA-202C is an identical discrete reproduction of the original VCA used on every single desk from the 80's. It imparts a unique coloration and harmonic distortion which led these desks to be recognized for two things: glue and character. Each Stam Audio SA-202C is built in the same old fashion as the original with a complex system to hand match the very same transistors and values.

We have also upgraded the capacitors on the audio path and incorporated precision resistors. We auditioned 16 brands of capacitors to find the best sounding ones and Elna Silmic were by far the winners; they present a wider frequency response than any other brand. We also took this opportunity to perform several upgrades to the original SA4000 and added the following features:

- True stereo side chain
- Mix Blend knob
- HPF (5 selecting frequencies)
- New ratio configuration (1.5 and 3.0 ratios added)
- Transformers switch for optional MOD

At the heart of the SA4000 MK2 are two Stam Audio SA-202C VCA cans, which are fully discrete and identical replicas of the original DBX 202C gold cans found on the original vintage SSL consoles. This makes the SA4000 MK2 the only bus compressor in the world to faithfully replicate the inner circuit of the original desk. Each SA-202C can is made by hand in Chile, where transistors are carefully matched in a proprietary circuit.

The SA-4000 has true balanced outputs to ensure the best audio performance possible.

Plus, to make it feel great and look right, the unit comes with premium Sifam knobs and VU meters.

There is no compromise in parts throughout the entire circuit, which ensures you get a compressor that behaves and sounds 100% accurate to the original. All our units are hand made and calibrated in our workshop in Chile where they get a full health check twice and burn for 24 hours.

1.1 COMPONENTS OVERVIEW

- SA-202C all discrete VCA
- Elna Silmic signal path capacitors
- Precision resistors
- That 2181 detector
- Sifam Knobs / VU Meter

1.2 FEATURES

- 2 Stam Audio SA-202C discrete VCA (DBX 202 replica)
- 2 THAT 2181
- True to the original G Series Desk circuit and schematic
- 5 ratio settings
- 5 release settings
- True stereo side chain
- 5 positions High Pass Filter
- Mix blend knob
- Bypass Switch
- Gain Reduction meter as fitted to the classic SSL console
- Handmade in Chile

2.0 CONTROLS



2.1 THRESHOLD

Sets the compressor threshold (CCW)

2.2 RATIO

Sets the compression ratio

2.3 ATTACK

Sets the compressor attack time

2.4 RELEASE

Sets the compressor release time

2.5 HPF

Activates the sidechain hi-pass filter and selects the cut-off frequency of the sidechain signal. Works also when external sidechain is selected.

2.6 MAKEUP

Sets the compressor make-up gain

2.8 MIX BLEND

Allows for instant parallel compression by mixing the dry signal with the compressed signal (being 0% full dry and 100% full wet)

2.9 COMPRESS

Activates the compression circuit. When depressed the output signal is routed out directly from the input . When pressed the audio signal passes through the compressor circuit and the DBX202 (VCA). It serves also as a quick bypass for instant comparison.

2.10 EXTERNAL SIDECHAIN

Allows the compression circuit to be triggered by an external control signal, taken from the rear panel XLR connection (SIDE INPUT).

2.11 TRANSFORMER

If your unit is equipped with the Neve or API mod this button activates the additional output circuitry.

3.0 CONNECTIONS

3.1 LINE IN

Standard XLR Line input connection

2.2 LINE OUT

Standard XLR Line output connection

2.3 SIDECHAIN

External sidechain signal cial standard XLR connection

4.0 SPECIFICATIONS

Power Requirements 115/230 VAC

Frequency Response 10Hz to 22kHz (± 0.2 dB)

Input Impedance $> 10k \Omega$

Output Impedance $\approx 50 \Omega$

Noise < -90 dBu (unity gain, 50Ω source)

5.0 CALIBRATION

- Inject a 1KHz sine wave at 4dBu into both channels and monitor output levels.

- Identify the calibration trimmers on the main board:

- R157 / R156 / R120 / R16 / R17 / R121 / R99

- Set the compressor in BYPASS and MIX BLEND on 0%

- Turn R156 / R157 fully CW and monitor output level

If you have difference between L&R adjust R120 until L matches R

Now that you have both channels adjusted equally, proceed to adjust R156 / R157 again until L and R reach your nominal 4dBu.

- Move the control of the BLEND MIX to 100%

- Check if your output levels are 4dBu, if not, adjust R16 /R17

Last step is to adjust the levels with the compressor ON.

Set the unit as follows:

BLEND MIX 100%
MAKE UP 0
HPF OFF
ATTACK .1
RELEASE .1
RATIO 10
THRESHOLD +15
COMP ON.

Your levels shouldn't change.

Turn the THRESHOLD control on -15, You should have around 24dB of Gain Reduction.

If you have difference in GR amount you can adjust the left channel with respect to the right turning by R121.