



WARM BUS-COMP 2 Channel VCA Bus Compressor User Guide

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WARM BUS-COMP 2 Channel VCA Bus Compressor User Guide



WARMTM
AUDIO

THANK YOU!

Thank you for purchasing the Warm Audio BUS-COMP, 2 Channel VCA Bus Compressor. We feel this product offers the best in terms of sound, function, and vibe from the classic era of analog recording. We don't cut corners when it comes to what goes into our products, and the BUS-COMP is no exception.

The BUS-COMP uses the highest quality components including THAT 2180 VCA's and output transformers made by CineMag USA. The BUS-COMP is hand-wired and hand assembled, including the pcb components that are all populated by hand. We are confident you will love recording and mixing with the Warm Audio BUS-COMP.

WELCOME BACK TO THE WORLD OF ANALOG

Though digital technology and software have made great strides in their performance in recent years; we still feel that nothing compares to the level of articulation, depth, realism, and responsiveness of a well-built piece of analog gear. When you hear the bottom end presence and top-end detail of quality analog gear, the difference can be astounding. The cost of most boutique analog equipment is financially out of reach for many recording artists. Our mission is to change this, and introduce as many people as we can to recording and mixing with real, dedicated hardware. Whether this is the first piece of outboard gear you've ever purchased outside of a recording interface, or merely the first in a long time; we thank you, and welcome you back to the world of analog.

Bryce Young
President
Warm Audio
Liberty Hill, Texas USA

REGISTER YOUR BUS-COMP

Before we begin, please take the time to visit www.warmaudio.com to register your product. To ensure you receive proper and uninterrupted warranty support for your product, please register your unit within 14 days from purchase.

WARRANTY STATEMENT

Warm Audio warrants this product to be free from defect in materials and workmanship for one year from the date of purchase, for the original purchaser to whom this equipment is registered. This warranty is non-transferrable.

This warranty is void in the event of damage incurred from unauthorized service to this unit, or from electrical or mechanical modification to this unit. This warranty does not cover damage resulting from abuse, accidental damage, misuse, improper electrical conditions such as mis-wiring, incorrect voltage or frequency, unstable power, disconnection from earth ground (for products requiring a 3 pin, grounded power cable), or from exposure to hostile environmental conditions such as moisture, humidity, smoke, fire, sand or other debris, and extreme temperatures.

Warm Audio will, at its sole discretion, repair or replace this product in a timely manner. This limited warranty extends only to products determined to be defective and does not cover incidental costs such as equipment rental, loss of revenue, etc. Please visit us at www.warmaudio.com for more information on your warranty, or to request warranty service.

This warranty applies to products sold in the United States of America. For warranty information in any other country, please refer to your local Warm Audio distributor. This warranty provides specific legal rights, which may vary from state to state. Depending on the state in which you live, you may have rights in addition to those covered in this statement. Please refer to your state laws or see your local Warm Audio retailer for more information.

NON-WARRANTY SERVICE

If you have a defective unit that is outside of our warranty period or conditions; we are still here for you and can get your unit working again for a modest service fee. Please visit us at www.warmaudio.com to contact us about setting up a repair or for more information.

With proper care, your Warm Audio gear should last a lifetime and provide a lifetime of enjoyment. We believe the best advertisement we can have is a properly working unit being put to great use. Let's work together to make it happen.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions – All of the safety and operating instructions should be read before this product is operated.
2. Keep these instructions – The safety and operating instructions should be retained for future reference.
3. Heed all warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow all instructions – All operating and use instructions should be followed.
5. Do not use this apparatus near water – The appliance should not be used near water or moisture – for example, in a wet basement or near a swimming pool, and the like.
6. Clean only with dry cloth
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Refer all servicing to qualified personnel. Servicing is required when the apparatus 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 apparatus, has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

INTRODUCTION

The Warm Audio BUS-COMP is an all analog, 2 channel, stereo VCA compressor based on classic circuitry that has provided silky smooth tone on countless hit records. Stereo VCA compressors are masterful at controlling dynamics on many sources, but they have become widely known for their magic touch on stereo mixes.

The BUS-COMP will perform well on stereo mixes, drum mixes, drum overheads, acoustic guitars, keyboards, piano, orchestral instruments, voice-overs and an array of other sources. The BUS-COMP is primarily designed for stereo use, but it can be used just as successfully on individual mono sources. VCA compressors of this type have become widely loved for their ability to control dynamics effortlessly but also for the added tone and depth they provide to the audio signal that passes through them, even when no compression is applied.

Re-creating legendary CA compressor technology was the focus of the BUS-COMP's design, however, adding options and improvements was just as important to us during its development. One feature we are proud to boast is the BUS-COMP's ability to have USA made CineMag transformers inserted into the signal path driven by fully discrete operational amplifiers. With a single push of a front panel switch, these custom USA made transformers are inserted into the audio's path providing increased depth, tone and vibe!

As with all of the products we develop here at Warm Audio, the BUS-COMP was designed with a price point in mind. With efficient, modern manufacturing techniques we are proud to bring this boutique quality, classic VCA compressor to the market at a quality-to-price ratio previously unseen. More studio's than ever before will now have access to analog quality VCA compression. Our desire is for all musician's to be heard the way they want to be heard and we feel the BUS-COMP is the perfect tool to perfect any mix!

The information contained in this manual is written to help you get quickly started using your BUS-COMP.

NOW LET'S GET STARTED!



1. ANALOG dB METER with Needle Calibration

This meter indicates the amount of compression being applied to your audio. The meter needle may be easily calibrated to zero by slowly turning the small, flathead adjustment screw directly below the meter.

2. Threshold

The threshold setting determines at what level the compressor will begin working.

For example, when the signal level exceeds the threshold setting, it will be compressed; below the threshold, the signal will be passed unprocessed. Carefully setting the threshold allows you to precisely control when compression is being applied to signal.

3. Attack – ms (ms = milliseconds)

Attack refers to when the compression effect is engaged after the signal crosses the threshold. Attack is measured in milliseconds (ms). You might adjust it from .1 ms (engages immediately), 3 to .6 milliseconds (waits .3 to .6 milliseconds to engage), or all the way up to 30 ms (waits 30 milliseconds to engage). And, of course, anywhere in between.

The majority of volume spikes come at the beginning, or attack, of a note.

For example, if you want the sound of your plucking, pick attack, loud vocal, or drum hit to come through more, you could increase the attack time to let it pass through.

4. Ratio

The compression ratio selects the amount of compression to apply on signals above the threshold. The ratio might be something like 3:1 (3 to 1). That means for every 3 dB you send to the compressor beyond the threshold, only 1 dB comes out.

For example, a 1:1 ratio would not compress anything. You really have to listen closely when adjusting the ratio; it is often subtle. Experiment by starting at the highest amount of compression and you'll hear the dynamics get squashed. Then, slowly lower the compression amount until it suits your taste. A little compression can go a long way. Your dB meter will also give you a visual reference of how much compression is taking place. However..one golden rule to recording and mixing is to.

"Mix with your ears, and not with your eyes.

5. **Release S (S = seconds)**

The release is the amount of time it takes for the compressor to stop affecting a signal after crossing the selected threshold. With a shorter (fast) release time, the processor will release (let go) of the signal more quickly after the threshold is crossed. A longer (slow) release time will allow the compressor to continue to affect the signal for a designated period of time after the threshold is crossed. For example, a .3 release setting will "let go" of its compression .3 seconds after crossing the selected threshold

6. **HPF Hz (High-Pass Filter – Hertz)**

The high pass filter affects only the audio signal entering the compression side-chain section of the circuit. The low frequencies selected to be cutoff with this filter will still pass through the unit all the way to the outputs, however, the frequencies below the selected cutoff point won't be compressed. The use of the high pass filter allows you to compress your material harder without an unwanted pumping affect occurring from the low bass frequencies hitting the compression side-chain. Because the low end frequencies pass through the unit uncompressed, the low end "breathes" more easily and in many cases sounds stronger and deeper with the HPF engaged.

7. **MAKE-UP (Make-Up Gain)**

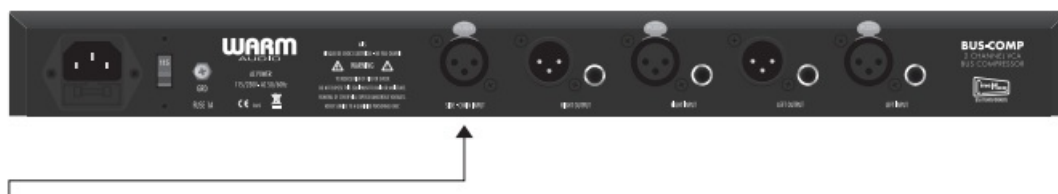
The process of compression inherently reduces the overall level of audio. Once this occurs, you need a way to bring the overall level back up. There are a number of ways to accomplish this; however, the simplest and most effective way is to have a final gain stage (Make-up Gain) before the audio leaves the compressor.

8. **COMPRESSOR**

When selected, the compressor is engaged and operable. When not selected (bypass), the compressor will still pass audio through without compressing your signal.

9. **EXTERNAL SIDE – CHAIN**

Side-chain is a term that often causes confusion. Here is what it means in its simplest form.

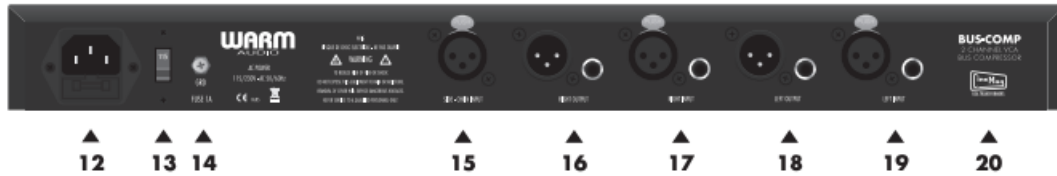


When nothing is plugged into the side-chain input, it is the compressor alone that determines what the audio sounds like as it leaves the compressor. However, if you want to modify the sound before it leaves the compressor, the side-chain input is where you can make that happen.

The most common use for side-chain is an equalizer. So, all you're doing is plugging the output of your EQ into the side-chain input. Imagine a very bass-heavy mix. Without plugging an EQ into the side-chain, you're sending all that bass energy straight out of the compressor. That's fine if that's your goal. However, if you'd like to EQ certain frequencies of the bass before it leaves the compressor, you can do that with an EQ plugged into the side-chain input. This is just one basic example of using your side-chain input; there are a number of other applications as well. We recommend that you research the web to learn more.

10. **ENGAGE TRANSFORMERS**

When this switch is engaged, the make-up gain stage of the BUS-COMP converts from a non-discrete IC based output stage to a pair of fully discrete opamps driving 2 USA made CineMag transformers. Inserting this discrete transformer stage into the signal path will change the sonic and tone of the signal you are passing through it. Some might describe the engagement of the CineMag transformer stage as adding depth, tone or vibe to the signal. We strongly encourage you to listen to your recordings with and without this switch engaged to determine which setting sounds best to you!



12. IC POWER RECEPTACLE

IEC power cable is included.

13. VOLTAGE INDICATOR

Double check to be certain that the correct voltage is displayed for your geographic location.

14. GRD (Ground) and FUSE (1A) Indicator

15. SIDE – CHAIN INPUT

See Number 9 (External Side-Chain)

16- 19. INPUTS/OUTPUTS (Left & Right -XLR or 1/4')

20. O.C.D. (Obsessive Compulsive Disorder)

Our technical manual designer has O.C.D. and needed to have an even number of things to point to. So... he added number 20 to remind you that we use world-class, CineMag transformers made in the USA. And now, our designer can sleep at night.

CONNECTIONS

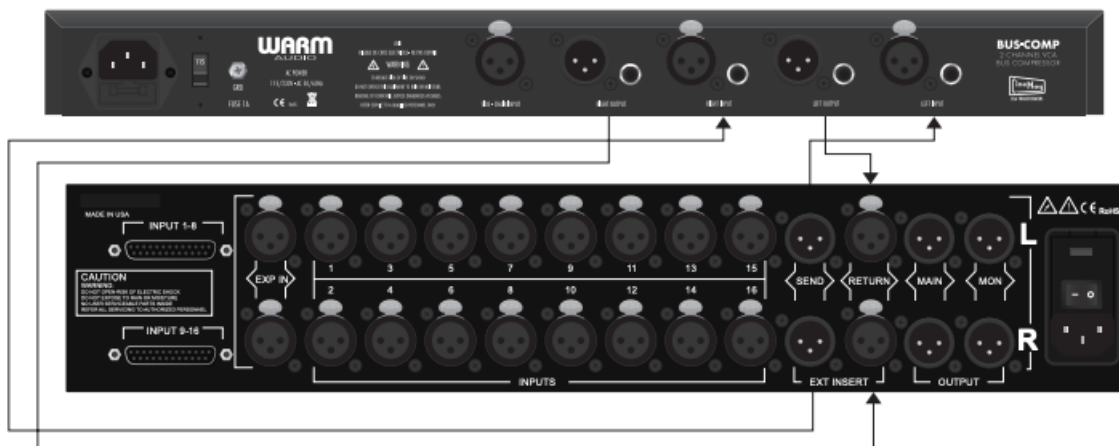
A. SUMMING MIXER

Summing mixer SEND LEFT to Bus-Comp INPUT LEFT

Summing mixer Send Right to Bus-Comp INput Right

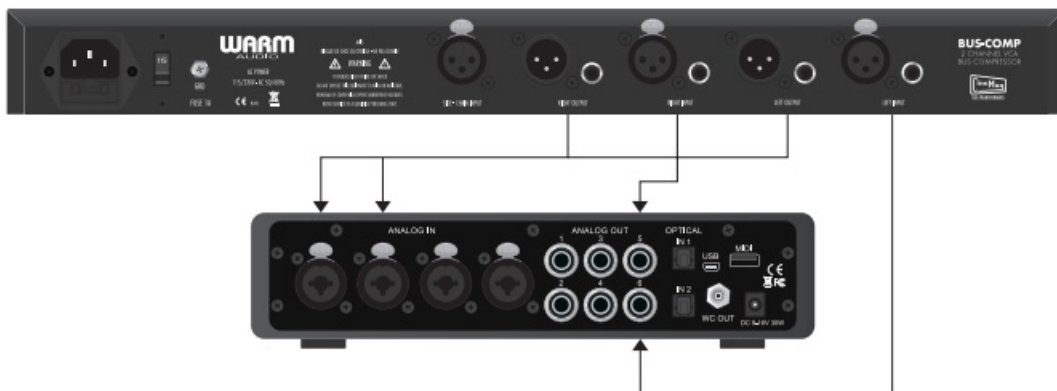
Bus-Comp Output Left to summing mixer Return Left

Bus-Comp Output Right to summing mixer Return Right



B. INTERFACE

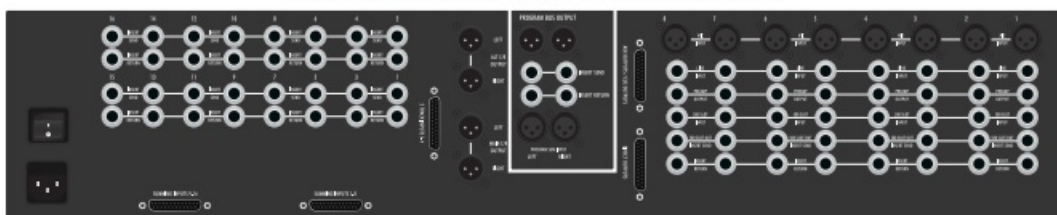
In the example below, simply remember that the BUS-COMP OUTPUTS go to interface INPUTS, and BUS-COMP INPUTS go to interface OUTPUTS. Your interface will require 2 extra INPUTS and 2 extra OUTPUTS.



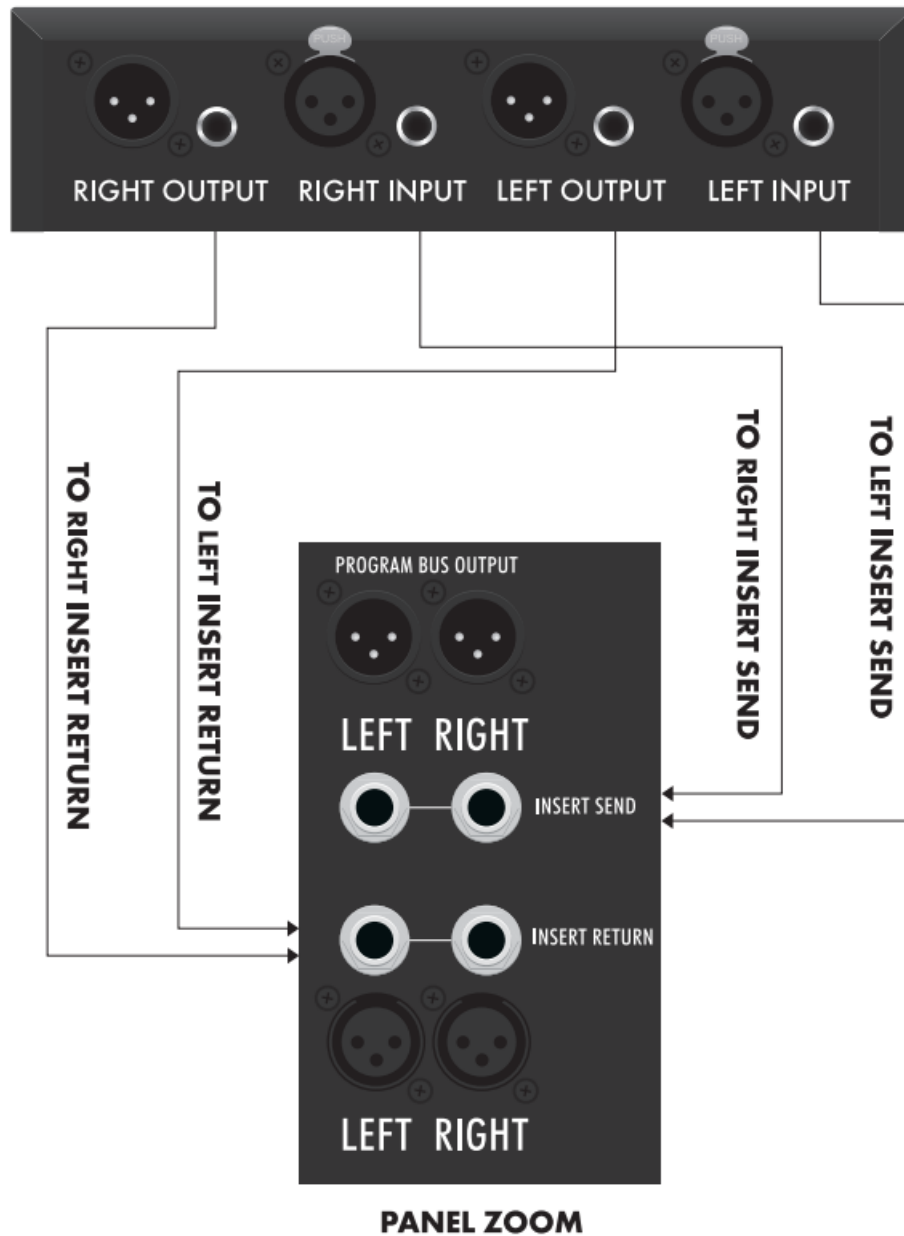
C. CONSOLE

In the example below, this console has a specified PROGRAM BUS OUTPUT. However, the COMP may also be inserted into an available channel of inserts and returns if you wish to have it elsewhere in your signal chain.

PANEL ZOOM - BOTTOM OF PAGE



BUS-COMP REAR PANEL



SPECIFICATIONS


- All analog, 2 channel, stereo VCA compressor.
- Based on classic circuitry used on countless hit records.
- Selectable discrete opamp stage with CineMa USA transformers.
- Selectable Hi-pass Filter: 30, 60, 105, 125, 185 Hz.
- Compressor engage switch for easy A/B compress vs. no-compress comparison.
- Performs well on stereo mixes, drum mixes, drum overheads, acoustic guitars, orchestral instruments, voice-overs and endless other sources.
- Can be used on stereo as well as individual mono sources.
- THAT 2180 VCA's.
- Optimally provides both XL and TRS connectivity.
- Noise: <-90dBu
- Headroom: > +29dBu, 20Hz – 20kHz
- Dynamic Range: > 120dB

- Frequency Response: 18Hz – 22kHz
- THD + Noise. 20Hz – 20kHz. +20dBu input: < .05%
- Input Impedance: 10k Ohms
- Output Impedance: 50 Ohms



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Documents / Resources

	<p>WARM BUS-COMP 2 Channel VCA Bus Compressor [pdf] User Guide WARM, WARM Audio, 2 Channel, VCA, Bus Compressor, BUS-COMP</p>
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[Manuals+](#).