LACHAPELL AUDIO

LACHAPELL AUDIO 500CS USER GUIDE

DIGITAL AUDIO LABS

SAFETY INSTRUCTIONS

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. CONTACT DIGITAL AUDIO LABS FOR SERVICING.

IMPORTANT SAFETY INSTRUCTIONS

1. Read and understand this entire manual.
2. Keep this manual available for reference.
3. Heed all warnings and precautions in this manual and notices marked on the product.
4. Do not use this product near water or damp environments.
5. Refer all servicing to qualified service personnel. There are no user serviceable components inside the product.
6. The product shall not be exposed to moisture. Do not touch the unit with wet hands. Do not handle the unit or power cord when your hands are wet or damp.
7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.

CARE

- From time to time you should wipe off the front and side panels with a dry soft cloth. Do not use rough material, thinners, alcohol or other chemical solvents or cloths since this may damage the finish or remove the panel lettering.
- The manufacturer cannot be held responsible for damages caused to persons, personal possessions, or data due to an improper or missing ground connection.

DIGITAL AUDIO LABS LIMITED WARRANTY

Digital Audio Labs warrants their products against defects in material and workmanship for a period of two years from date of purchase. During this period, Digital Audio Labs will, at its option, repair the defective unit or replace it with a new or rebuilt one.

The warranty does NOT cover:
• Damage due to abuse, misuse, or accident.
• Damage due to operation contrary to the instructions in the product instruction manual.
• Units on which the product serial number has been removed or altered.
• Units that have been serviced by unauthorized personnel.

All implied warranties, including warranties on merchantability and fitness, are limited in time to the length of this warranty. Some states do not allow time limitations on implied warranties, so this limitation may not apply to you. Digital Audio Labs' liability is limited to the repair or replacement of its product. Digital Audio Labs shall in no way be held liable for incidental or consequential damages resulting from the use of their product or its software, including, without limitation, damages from loss of business profits, business interruption, loss of business information or other pecuniary loss. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

REPAIR POLICY

Please do not return the product without obtaining an RMA number first. Contact Digital Audio Labs at support@digitalaudio.com to acquire an RMA number. Do not return the product to the place of purchase. Please write the RMA number on the outside of the shipping carton. Any product sent to us without a valid RMA number may be refused. Include the following with the product: a brief description of the problem, your name, return shipping address, phone number and the RMA number. Do not include any accessories. DAL is not responsible for any damage to or loss of the product during transit. We recommend that customers obtain a receipt and tracking number for all packages shipped to us. Turnaround time on repairs is generally ten business days. If you live outside of the United States, please contact your local distributor for warranty service.

> Please return product to:
> Digital Audio Labs
> Attn: RMA Number
> 1266 Park Road
> Chanhassen, MN 55317
> USA

WARRANTY SERVICE

You will be required to pay the shipping charges when you ship your product to DAL. DAL will pay for return shipping via UPS ground or other comparable shipper. We reserve the right to inspect any product that may be the subject of any warranty claim before repair is carried out. For warranty service, we may require proof of the original date of purchase if you have not registered your product with DAL. Final determination of warranty coverage lies solely with Digital Audio Labs.

NON-WARRANTY SERVICE

If it is determined that the product does not meet the terms of our warranty, you may be billed for labor, materials, return freight and insurance. There is a $80 USD minimum charge for materials and labor. Appropriate shipping charges will be applied. We require payment in advance of repair by credit card; we accept Visa and Master Card. In the event the charges are over the minimum charge, DAL will contact you and inform you of the cost of the repair before any work is completed.

CONTENTS

LACHAPELL AUDIO MODEL 500CS

The 500CS Channel Strip from LaChapell Audio is a complete channel strip featuring a pristine OpAmp based solid state preamp, high and low pass filters, full 3-band EQ and VCA compressor in one unit. Each "half" of the unit can function independently for maximum value and versatility. Track with the preamp, eq and compressor together, then switch to independent mode and use the eq/compressor side as an outboard processor.

BEFORE YOU GET STARTED

Please take time to read the information below before you install and use your LaChapell Audio 500CS.

- UNPACKING: Inspect thoroughly. Although we take extreme care at final assembly and packing, things can happen during transit. It is very important that you contact Digital Audio Labs if there is anything broken or damaged upon receipt of package. Included in every package should be: (1) getting started guide, (1) packet of mounting screws, (1) registration card. It is a good idea for you to retain the packaging (box & foam case) in case there is a need to return the unit for service or repair at a later date.

- SERVICE/REPAIR - WARNING: The user should NOT attempt to service this unit in any way, due to the risk of electrical shock and the presence of potentially lethal voltages inside the 500CS.

SAFETY PRECAUTIONS
- Always provide adequate ventilation by allowing the top vents of your 500 series power supply chassis to remain unobscured.
- Never position the power supply directly above other heat generating sources such as a power amplifier.
- Always provide a source to ground (earth.) Never under any conditions should a power cord that has the third prong for ground missing or defeated be used with the power supply.
- Do not place the 500CS in an area where there is a potential for fluids to fall, spill into or come in contact with the 500CS. If you notice fluids or moisture present inside the 500CS DO NOT turn power on! Contact Digital Audio Labs for direction.

500CS CHANNEL STRIP CONTROLS
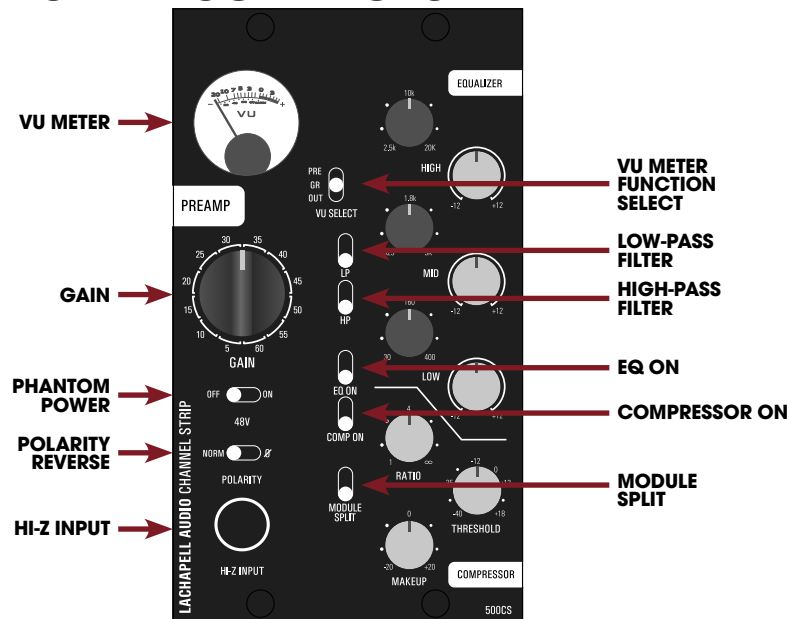
PREAMP SECTION

- GAIN: The GAIN controls how much of the source signal is fed to the preamplifer.

- PHANTOM POWER: This toggle provides 48V of DC current for condenser microphones.

- POLARITY REVERSE: Reverses the polarity of the output line level signal.

- HI-Z INPUT: The Hi-Z input stage provides an input for high impedance instruments. The XLR input on the 500 series frame is disabled when an instrument is plugged into the front panel

CONTROL SECTION

- VU METER: The VU meter gives you a visual indication of various functions of the 500CS.

- VU SELECT: The VU Meter has three separate metering functions.
    PRE: VU displays the signal level at the output of the PREAMP.
    GR: The VU shows the gain reduction of the compressor. This is before the MAKEUP gain.
    OUT: VU displays the signal level at the output of the 500CS, after the MAKEUP gain.

- LP: Low Pass Filter with 3dB cut at 8 kHz.

- HP: High Pass Filter with 3dB cut at 150 Hz.

- EQ ON: When depressed, the EQ is active.

- COMP ON: When depressed, the COMPRESSOR is active.

- MODULE SPLIT: When depressed, the preamp and EQ/COMPRESSOR operate independently (see section below).

500CS CHANNEL STRIP CONTROLS
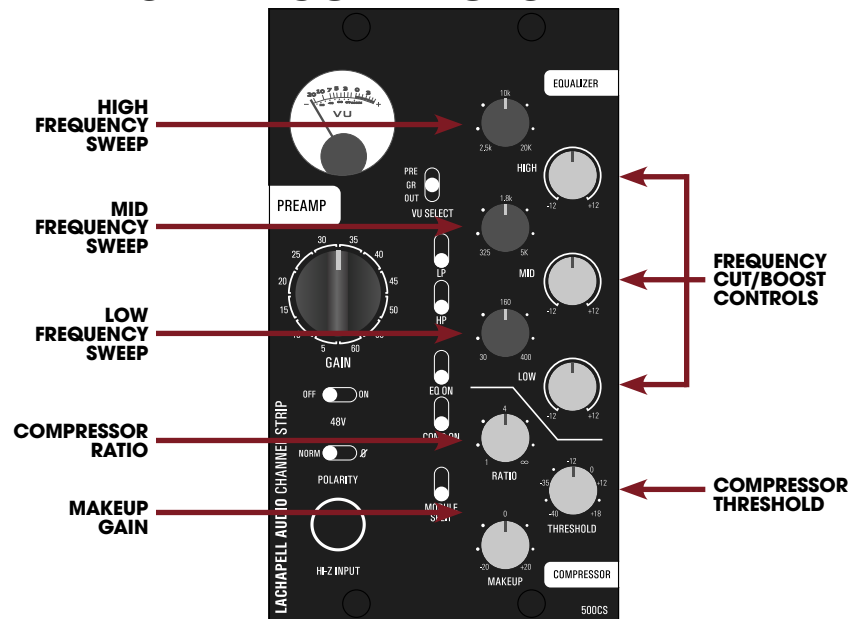
EQ/COMPRESSOR SECTION

- FREQUENCY CUT/BOOST CONTROLS: Provides 12dB of cut or boost at the selected frequency. When in the center position, the EQ band is "off".

- HIGH FREQUENCY SWEEP: Fully variable sweep from 2.5kHz to 20kHz

- MID FREQUENCY SWEEP: Fully variable sweep from 325Hz to 5kHz

- LOW FREQUENCY SWEEP: Fully variable sweep from 30Hz to 400Hz

- COMPRESSOR RATIO: This control sets the ratio of the compression ranging from 1:1 to ∞:1.

- COMPRESSOR THRESHOLD: This control determines when the COMPRESSOR starts compressing.

- MAKEUP GAIN: An additional gain stage to adjust the amplified signal after the COMPRESSOR (only active when the COMPRESSOR is active).

BACK PANEL

- COMP-LINK PORT: This port is for future use.
- COMP-LINK SELECT: This is for future use. It should stay in the MASTER position.
- ATTACK/RELEASE: This allows you to select either a FAST attack and release for the COMPRESSOR (switch OFF) or SLOW attack and release (switch ON).

- KNEE: Select a HARD KNEE (switch OFF) or a SOFT KNEE (switch ON) for the COMPRESSOR.

USING THE PREAMP

The preamp section of the LaChapell Audio 500CS is intuitive and simple.

1. Place the VU SELECT switch in the PRE mode to monitor the preamp gain.
2. If you are using a condenser mic, set the 48V phantom power switch to the ON position.
3. Use the GAIN knob to adjust the level of your input.

USING THE EQ

The EQ on the 500CS is very similar to the high end boutique EQ found on our MODEL 503 EQ unit. It is very clean and transparent, designed for a minimum of phase interaction.

To use the EQ, depress the EQ ON button and adjust the frequency sweep and boost/cut knobs as desired.

USING THE COMPRESSOR

The COMPRESSOR on the 500CS is a VCA style compressor with ratio, threshold, and makeup gain controls. Additional funcitonality can be set via the DIP switches on the back of the 500CS unit. Before mounting the 500CS in a 500 seres power supply, select the desired mode of operation for the COMPRESSOR via the BACK PANEL controls.

> **NOTE:** If the compressor is engaged, the MAKEUP gain provides an extra 20dB of gain if needed.

> **NOTE:** We recommend starting with the SLOW ATTACK/RELEASE and SOFT KNEE settings. These are usally the most forgiving and musical.

COMP LINK

This control provides for future expanded functionality. It should be in the MASTER position at all times. If it is placed in the SLAVE position, the 500CS will not function as expected.

ATTACK AND RELEASE TIMES

To set the COMPRESSOR to a SLOWER attack and release, move DIP SWITCH 2 to the ON position. This setting is generally more versatile. A slower attack time often lets the instruments sound more natural, allowing the transients to pass through uncompressed before the compressor starts working.

To set the COMPRESSOR with a FAST attack and release, move the second DIP switch on the back of the 500CS to the OFF position. This setting is good for taming elements of a mix or recording. Over zealous snares, bass with a flubby low end, lead vocals can often benefit from a faster attack time.

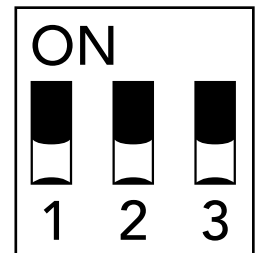|			
ON	SLAVE ——	SLOW ——	SOFT
OFF	MASTER ——	FAST ——	HARD
FUNCTION	**COMP LINK** ❶	**ATK/RLS** ❷	**KNEE** ❸

SOFT AND HARD KNEE

Setting the DIP SWITCH to the ON position will engage a soft knee for the COMPRESSOR. The HARD KNEE is effective when using the COMPRESSOR as a limiter. It tends to be more effective with the FAST ATTACK/RELEASE settings as well.

A SOFT KNEE tends to be more natural, letting the COMPRESSOR kick in a bit more gradually.
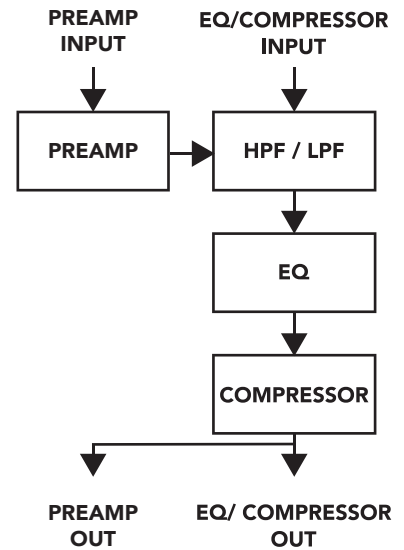
SPLIT MODULE - INDEPENDENT OPERATION

The LaChapell Audio 500CS can be used as a single channel strip, or as two separate 500 series modules. PRESS the MODULE SPLIT button to divide the 500CS into its two halves.

STANDARD MODE

In standard mode, the 500CS functions as a complete channel strip.

Signal present at the PREAMP INPUT XLR on the 500 series frame will be processed by the PREAMP and the processed signal will pass through to the EQ/COMPRESSOR section. The processed signal will be present at BOTH the PREAMP OUTPUT XLR and the EQ/COMPRESSOR OUTPUT XLR.

A signal present on the EQ/COMPRESSOR INPUT XLR will be ignored in this mode.

MODULE SPLIT MODE

When the MODULE SPLIT button is engaged, the preamp functions as one 500 series module and the EQ/COMPRESSOR functions as a second 500 series module. In this mode, only signals present at the INPUT to each module will pass through the module and appear at the output.

Signal present at the PREAMP INPUT XLR on the 500 series frame will be processed by the PREAMP and the processed signal will be present at the PREAMP OUTPUT XLR on the 500 series frame.

Signal present at the EQ/COMPRESSOR XLR will be processed by the EQ and COMPRESSOR and be present at the EQ/COMPRESSOR XLR.

*STANDARD MODE
SIGNAL FLOW*
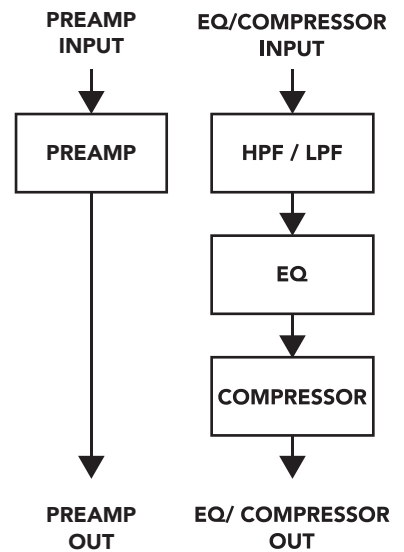
*SPLIT MODE
SIGNAL FLOW*

500CS SPECIFICATIONS

PREAMP

INTERNAL GAIN	60 dB
THD+N	0.0009%
FREQUENCY RESPONSE	6 Hz - 45.5+ kHz
MAX OUTPUT	28.12 dBu
TYPICAL EIN	-128
INPUT IMPEDANCE	3 KΩ Mic / 20 KΩ Hi-Z
MAXIMUM INPUT LEVEL	7 dBu

EQ

NOISE FLOOR	Less than 94.5 dB from 20 hZ to 20 kHz
THD+N	0.0015%
FREQUENCY RESPONSE	5 Hz - 36 kHz (+/- .28 dBu)
CUT/BOOST RANGE	+/- 12dB
MAXIMUM INPUT LEVEL	27.65 dBu
BANDS	3 Band
HIGH PASS FILTER	6 dB per octave at 142 Hz
LOW PASS FILTER	6 dB per octave at 7 kHz

COMPRESSOR

TYPE	VCA
KNEE	Hard/Soft Selectable
ATTACK/RELEASE SLOW SETTING	Attack: 5ms Release: 65ms
ATTACK/RELEASE FAST SETTING	Attack: 3ms Release 12ms

NOTE: Stated specifications are typical measurements but subject to change without notice.

TROUBLESHOOTING

COMMON ISSUES	
I can't hear my signal, just clicking.	Make sure the COMP LINK function is set to MASTER or OFF with DIP SWITCH 1.
I am not getting any sound from the input.	Make sure there is nothing in the Hi-Z input.
I am not hearing the EQ or COMPRESSOR.	Make sure the EQ or COMPRESSOR is enabled with the switch.
The preamp VU is moving but I don't hear any sound.	Make sure the SPLIT MODULE button is not pressed.
What does the COMP-LINK port do?	The COMP-LINK port is for future stereo compressor functionality (when using two 500CS units).

LACHAPELL AUDIO SUPPORT

Phone Support: 952-401-7700
Toll Free: 844-DAL-INFO
Email Support: support@digitalaudio.com
Website: www.digitalaudio.com/support

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