Solid State Logic

OXFORD • ENGLAND

# VHD+ Pre Amplifier Module
# for 500 Series Racks

## User Guide

## Safety and Installation Considerations

This page contains definitions, warnings, and practical information to ensure a safe working environment. Please take time to read this page before installing or using this apparatus.

## General Safety

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Do not expose this apparatus to rain or moisture.
- Clean only with dry cloth.
- Do not block any ventilation openings.
- Install in accordance with the rack manufacturer's instructions.
- There are no user-adjustments, or user-servicable items, on this apparatus.
- Adjustments or alterations to this apparatus may affect the performance such that safety and/or international compliance standards may no longer be met.
- This apparatus is not to be used in safety critical applications

## Caution

- This apparatus should not be used outside of the scope of API 500 series compatible racks.
- Do not operate this apparatus with any covers removed.
- To reduce the risk of electric shock, do not perform any servicing other than that contained in these Installation Instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

## Installation

- Ensure power is removed from the rack before fitting or removing this apparatus to or from the rack.
- Use the panel fixing screws supplied with the rack to secure this apparatus into the rack.

## Standards Compliance

This apparatus is designed to be installed and used in API 500 series compatible racks which are CE marked. The CE mark on a rack is indicative that the manufacturer confirms that it meets both EMC and the Low Voltage Directive (2006/95/EC).

## Instructions for Disposal of WEEE by Users in the European Union



The symbol shown here is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

## Limited Warranty

Please refer any warranty claim to the supplier of this equipment in the first instance. Full warranty information for equipment supplied directly by Solid State Logic can be found on our website:

www.solidstatelogic.com

## Introduction

Congratulations on your purchase of this API 500 format compatible SSL VHD+™ Pre Module.

This module has been specifically designed to operate in a 500 format rack such as the API lunchbox® or equivalent. In common with many such modules, the nominal input/output level is +4 dBu.

The VHD+ Pre is an immensely versatile recording and processing device. It can deliver ultra clean SSL SuperAnalogue™ grade recordings but also features a switchable VHD mode. SSL's patented Variable Harmonic Drive (VHD) system uses a 100% analogue signal path to generate rich harmonic distortion. As you increase VHD input gain, the Variable Harmonic Drive process introduces either 2nd or 3rd harmonic distortion or a blend of the two to your source material. At lower gain settings it adds gentle valve-style warmth or a touch of transistor edge. As the gain is increased the more extreme the distortion becomes until at high gain settings it delivers fierce trashy transistoresque grunge.

## Operation

Please refer to the illustration opposite.

## Signal LED 1

The signal LED is a tri-colour LED that indicates level according to the following table.

| LED colour | +24dB Scale* | +18dB Scale* |
|---|---|---|
| Green | -24dBu | -24dBu |
| Yellow | +4dBu | 0dBu |
| Red | +21 dBu | +16dBu |

** The LED scale is selected from a jumper on the module PCB.*

## Gain Controls 2

The red pot provides up to +75 dB of gain, whilst the black pot provides a variable mix of 2nd to 3rd order harmonics (once the VHD-IN switch 3 is engaged).

The grey pot provides +/- 20dB of trim. Use this to control the output when driving the VHD preamplifier circuit.




## High Pass Filter 4

The High Pass Filter section is a switchable 18dB/Octave variable filter. See the block diagram for the position in the circuit.

## Line In/DI Jack Socket 5

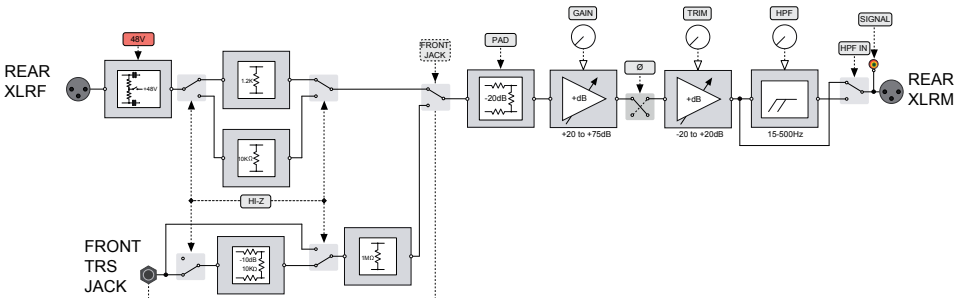
The front panel 1/4" Tip/Ring/Sleeve (TRS) Jack Socket provides a convenient way to connect instruments when the module is fitted in a rack.

This balanced input overrides the rear XLR and has a 10KΩ input impedance and features a -10dB level pad to allow for typically louder balanced line level signals. The Jack input can also be used with unbalanced (TS) cables. The input level and impedance are switched to 0dB and 1MΩ respectively (for very high impedance sources such as guitar pick-ups) with selection of the HI-Z switch.

## Input Impedances

The rear XLR and front Jack inputs have different impedances available by using the Hi-Z switch and allow for a wide variety of sources. The XLR input impedance changes from 1.2 KΩ to 10KΩ and the front panel Jack changes from 10KΩ to 1MΩ.

## Block Diagram



## Switch Functions 6

48v Applies phantom power to the rear XLR input, a tell tale red LED indicates phantom power is active.

PAD Applies 20 dB of attenuation before the signal enters the preamplifier.

HI-Z Switches the XLR Mic preamplifier impedance from 1.2 KΩ to 10KΩ or the front panel Jack from 10KΩ to 1MΩ

Ø Polarity switch inverts the polarity of the signal by 180°.

### Using the preamplifier

When the VHD button is not engaged, the preamplifier has been designed to give a transparent sound, great for sources such as acoustic guitars, vocals and strings.

When the VHD button is pressed, the preamplifier can be driven to give a wide-range of overdriven sounds, ranging from subtle to... well, not so subtle! Drums and electronic instruments can often benefit from VHD colouration.

The best way to drive the VHD preamplifier is to increase the input gain (red pot) whilst using the Line Trim pot to reduce the overall level and not clip the channel output. Remember, it's the input to the preamplifier that likes being driven. From this point, adjust the harmonics to fine-tune the desired sound.

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Solid State Logic cannot be held responsible for any loss or damage arising directly or indirectly from any error or omission in this manual.

PLEASE READ ALL INSTRUCTIONS, PAY SPECIAL HEED TO SAFETY WARNINGS.

E&OE

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Revision History

Revision V2.0, June 2020 - Revised Layout Release for Module Update