

OWNER'S MANUAL

SMART

Devices, Inc.

2X150VT HYBRID VALVE/MOSFET AMPLIFIER
2X150 MOSFET AMPLIFIER

<http://www.smart-cinema.com>

IMPORTANT SAFETY INSTRUCTIONS

CAUTION:

--Read all of these instructions.

--Save these instructions for later use.

--Follow all warnings and instructions in this manual and on the product.

- 1 Read all the safety and operating instructions **before** connecting and operating the product.
- 2 Follow all operating and use instructions.
- 3 Remove power from this product before cleaning.
- 4 Use only a slightly damp cloth for cleaning.
- 5 To avoid potential fire and shock hazards, do not use this product near water or damp places.
- 6 The product should only be operated from a power source of the type indicated on the product. Failure to do so could damage the equipment, void the warranty, and present a potentially dangerous situation.
- 7 Do not attempt to service this product yourself. Opening this product will expose you to dangerous voltage or other hazards. **LETHAL VOLTAGES ARE PRESENT INSIDE THIS UNIT.**
- 8 If service is required, only authorized service centers should perform the work using only replacement parts specified by the manufacturer. Unauthorized parts substitutions may result in electric shock, fire or other hazards.
- 9 This product should be placed away from heat-producing sources such as radiators, heat registers, or other products (including other amplifiers) that produce heat.
- 10 It is normal for this product to be warm to the touch in normal operation. It should not be so warm that you cannot comfortably leave your hand on the product for an indefinite period of time. It is possible for the heat sinks on the sides to become uncomfortably warm to hot during extended periods of high power operation. This is normal.

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE
THIS PRODUCT TO RAIN OR MOISTURE**

**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVERS.
THERE ARE NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

Thank you for purchasing this SMART product.

Please take the time to familiarize yourself with this product by carefully reading this manual. Most questions can be answered by reading and following the instructions contained herein. Because of the multitude of products from other manufacturers, this manual cannot possibly cover all the different configurations and hookups. Please consult with your Home Theatre Dealer or stereophile specialist for any unusual situations involving the connection and use of this product with equipment from other manufacturers. When properly connected and operated, this product should deliver outstanding results.

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Part of the patented circuitry in this amplifier is
utilized under license from Peter Hochstein.

This product has a serial number
located on the bottom. Please record
this serial number for your records.

SERIAL # _____

INTRODUCTION

The SMART 2X150VT and 2X150 are premium quality MOSFET amplifiers designed for those who demand the very best. Constructed of the finest materials and with superior American craftsmanship, these amplifiers will provide the best audio amplification with a long and trouble free life.



The Model 2X150VT is a hybrid design utilizing a 6922 dual triode valve input stage driving the amplifier modules. The sweet sound of tubes combined with the legendary MOSFET output stage makes music come to life.

The Model 2X150 is the same amplifier without the valve input stage. For those who prefer a more neutral character without the tube sound, this is the amplifier of choice.

Both models are rated at 150 Watts per channel at 8 Ohms, and 240 Watts per channel at 4 Ohms. In addition, Mono Bridged operation is built in, and in this mode, the amplifier will deliver 500 Watts into a single 8 Ohm load.

Input level controls are provided for easy adjustment of levels to match the output of virtually any preamp/processor. Input connections are made through floating RCA jacks. These connectors are isolated from the chassis and AC grounds to reduce the possibility of hum caused by ground loops.

Output connectors are premium quality gold-plated 5-way binding posts. These are spaced for dual banana plugs. They also have large post holes for wires or spade lugs.

The power supply circuitry includes inrush current limiting. This feature keeps current surges to a minimum during turn on. This helps to prolong the life of sensitive components.

INSTALLATION PRECAUTIONS

Noise Interference may result if this product is placed too close to an operating television set or a computer, or if it is placed on top of another amplifier or a power conditioner product.

High temperatures are detrimental to the performance and longevity of electronic equipment. Do not place this amplifier too close to high temperature devices. Do not block the heat sinks or top cover vent holes.

The **weight** of this amplifier is approximately 23 pounds. Make sure the location of the amplifier can properly support this weight.

CONNECTIONS

Power

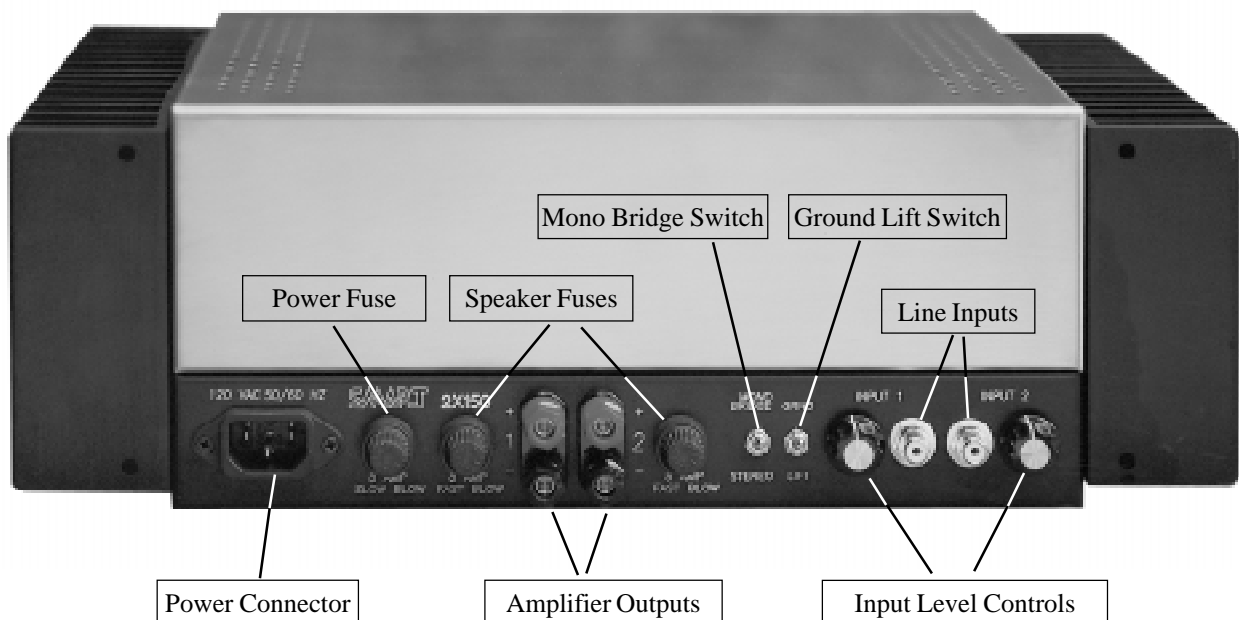
Connect the power cord IEC plug into the power connector. Make sure it is fully seated. Since this is a detachable power cord, you may substitute a premium power cord of your choice if you desire.

Line Level Inputs

The amplifier inputs are gold-plated RCA jacks. They are floating. This means that the ground connections on the jacks are isolated from the chassis and AC grounds. This is done to minimize the possibility of hum caused by ground loops.

Amplifier Outputs

The SPEAKER connections are made on gold-plated 5-way binding posts. You may use banana plugs, bare wires, or spade lugs to connect to these binding posts. It is important to tighten these connections properly. These connections carry high current, and any looseness may result in poor sound quality. If you have difficulty inserting wires into the post holes, simply remove the fuse holder caps temporarily to obtain more room in which to work.



OPERATION

POWER SWITCH

The ON/OFF rocker switch is located on the lower right area of the front panel. It is an illuminated switch which lights when turned on. Built-in inrush current limiting prevents heavy current surges during turn on.

LED INDICATORS

LED level indicators, 4 per channel, are near the lower left area of the front panel. These give an indication of the power levels being delivered to the speakers. The green LED's come on at very low signal levels and serve to indicate signal presence. The next 2 LED's up are set to come on at approximately 5 Watts and 50 Watts. The top red LED's are set to come on when peak levels approaching 150 Watts are achieved. These levels are calibrated for 8 Ohm loads and are designed to indicate properly for program material rather than test measurement signals. The left hand column is for Ch. 1 and the right hand column is for Ch. 2.

SETTING INPUT LEVELS

This amplifier has input level controls on the back panel. In most cases these will be turned all the way up. However, there may be cases where it is possible to reduce the system noise level by turning these down some, and turning the preamp/processor levels up.

GROUND LIFT SWITCH

A Ground Lift Switch is included to allow the amplifier circuit ground to be either isolated from the chassis and AC grounds or to be connected to these grounds. In most situations, the best noise performance will be obtained by leaving this switch in the LIFT position (down). This configuration removes a connection which can be a potential path for ground loop currents which can cause hum. In some circumstances, you may obtain lower noise (especially low frequency hum) by setting the switch to the GRND (up) position. Try both ways in your system to eliminate as much noise as possible.

MONO BRIDGE SWITCH

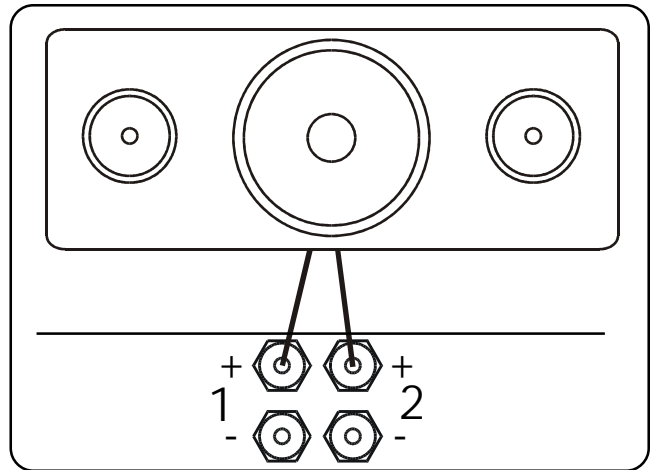
A switch is available to select MONO BRIDGED operation. This mode is used to enable both amplifier channels to drive one speaker for high power operation. In this mode, the amplifier will deliver 500 Watts of power to an 8 Ohm load. (The amplifier is not rated for 4 Ohm service in this mode.)

In MONO BRIDGED mode, the speaker is connected to the 2 HOT output binding posts. The ground binding posts are not used at all. The binding post spacing is such that a dual banana plug will plug directly into the 2 HOT binding posts. PLEASE NOTE THAT NEITHER SIDE OF THE SPEAKER IS GROUNDED IN THIS MODE OF OPERATION. If you have any connections to other equipment from the speaker connection (not likely, but possible) you will have to disconnect the other equipment when using MONO BRIDGED operation.

Use ONLY the Channel 1 input for MONO BRIDGED mode and turn the Channel 2 Input Level Control all the way down (counterclockwise).

Connecting a Speaker for Mono Bridged Operation

Note that only the + output posts are used



FUSES

Replace fuses only with the types and ratings indicated. The power fuse is a slow-blow type such as a MDL8, 250 Volt fuse or equivalent.

The speaker fuses are AGC8, 250 volts rating or equivalent. These are used to protect the amplifier in the event of a short circuit or a very low impedance load connected to the output binding posts. When either of these output fuses blow, some very small amount of distorted sound may still be heard. This is often an indication that a fuse has blown. For additional speaker protection, you may replace the speaker fuses with lower current fuses if you have speakers that are not designed to handle the power that this amplifier is capable of delivering. Please contact the factory if you have questions regarding the speaker fuses.

There are 4 internal fuses which should only blow in the event of a catastrophic failure in the amplifier modules or the power supply. DO NOT under any circumstances attempt to replace these fuses.

SERVICE

DO NOT REMOVE THE COVER FROM THIS AMPLIFIER. THERE ARE NO USER SERVICE-ABLE PARTS INSIDE. THERE ARE POTENTIALLY LETHAL HIGH VOLTAGES INSIDE THE AMPLIFIER. YOU COULD BE SERIOUSLY INJURED BY ATTEMPTING TO SERVICE THIS PRODUCT. ONLY QUALIFIED AND WELL-TRAINED PERSONNEL SHOULD SERVICE THIS AMPLIFIER. SMART DEVICES, INC. ASSUMES NO LIABILITY IF YOU DO NOT HEED THESE WARNINGS.

Please contact the factory for service on this amplifier.
The phone number is 1-800-45-SMART (1-800-457-6278) or 770-449-6698.
You may also e-mail us at service@smartdev.com

Also you may visit our web site at <http://www.smart-cinema.com>

SPECIFICATIONS

Device Type	2 Channel Power Amplifier
Inputs	2 Line Level, Floating RCA Jacks Unbalanced high impedance, approx 43k Ohms
Outputs	2 Speaker Level, Gold Plated 5-Way Binding Posts 8 Ohm or 4 Ohm
Rated Power Output	All power ratings are with both channels driven 150 Watts at 8 Ohms, 20 Hz - 20 kHz, Stereo Mode 240 Watts at 4 Ohms, 20 Hz - 20 kHz, Stereo Mode 500 Watts at 8 Ohms, 20 Hz - 20 kHz, Mono Bridged Mode
Distortion	Measured at 150 Watts into 8 Ohms with both channels driven Typically less than 0.05% THD+N at 1 kHz, (Model 2X150) Typically less than 0.15% THD+N at 1 kHz, (Model 2X150VT)
Input Sensitivity	Approximately 1.95 VAC rms for full output at 8 Ohms
Gain	25 dB (17.75 V/V)
Frequency Response	Measured at 150 Watts into 8 Ohms ± 0.15 dB from below 10 Hz to 20 kHz -0.5 dB at 60 kHz -1.2 dB at 100kHz
Signal to Noise Ratio	Better than -100dB re: full output
Channel Separation	Better than 60 dB from 10 Hz to 20 kHz
Power Requirements	120 VAC 60 Hz - 8 Amperes -OR- 220 - 240 VAC 50 Hz - 4 Amperes
Weight and Dimensions	Approximate: 23 lbs. 15.75" W x 5.75" H x 10.5" D 10.44 kg 40 cm W x 14.6 cm H x 26.7 cm D

Features and Specifications subject to change without notice. SMART Devices, Inc. assumes no responsibility to incorporate improvements or changes into existing products.

LIMITED WARRANTY

SMART warrants this product against malfunction or failure due to defects in workmanship or materials for a period of three years from the date of shipment. If a problem occurs during the warranty period, the unit will be repaired, without charge for materials or labor. This limited warranty does not cover products that have been abused, altered, modified, or operated in other than specified conditions. Returned equipment or defective parts must be shipped freight prepaid to us by the dealer or customer. Our limited warranty does not cover damages resulting from accident, misuse or abuse, lack of responsible care, or failures not attributable to manufacturing defects, except as provided herein. SMART Devices, Inc. makes no warranties, express or implied, including warranties of merchantability or fitness for a particular purpose.