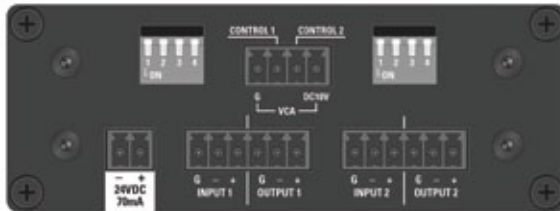




**TSD-ML22VCA**  
**2x2 Mic/Line Preamp & VCA**



1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.  
Telephone: 800.876.3333 • Fax: 800.765.3435



## Description

The Atlas Sound TSD-ML22VCA is a 2 input, 2 output true VCA with enhanced features including a high quality microphone pre amplifier. VCA's inserted prior to amplification provides a far more efficient solution than transformer-based attenuators for volume adjustment in high power music applications. The dual channel design can provide level control for two separate discrete zones or stereo sources and is perfect for use in sports bars, restaurants, hotels or other installations.

The TSD-ML22VCA also provides two high quality, low noise mic pre-amps, which allows simplification of designs that require remote microphone level adjustment. Switchable phantom power is provided for powering condenser microphones and a 12dB/octave @ 125Hz high pass filter is available on each mic input to minimize bass rumble and low frequency feedback in the system ensuring focus and clarity for the voice spectrum.

The TSD-ML22VCA is part of a full line of Atlas Sound Time Saving Devices. These compact (1.5" x 4" 2.75") units are designed to solve some of the common audio system problems in the easiest and in the most efficient and cost-effective way. All models are made from high quality components and include removable individual I/O connectors for quick and precise wiring, separate ground terminals for all I/Os assuring secured connections, and removable level controls that can be replaced with tamper-proof security covers. The TSDs are highly efficient and meet Energy Star™ standards as one 24V DC power supply (available separately) can power multiple Atlas Time Saving Devices.

## Features

- Two (2) Selectable Balanced Mic or Line Inputs
- High Gain Mic Input 50dB
- 12dB/Oct @ 125Hz Low Cut Filter Per Input
- Phantom Power Per Input
- Two (2) Balanced Mic/Line Outputs
- Separate Channel VCAs for Remote Level Control via Wall Plate or Programmable External DC
- Input Peak Indicator Per Channel
- Input Signal Indicator Per Channel
- High Gain Output for Long Distance Applications
- Cable Management System
- Multiple Mounting Configurations
- Separate Ground Connections
- Removable Phoenix Style I/O Connectors
- Security Covers Included for All Front Panel Controls
- Meets Energy Star™ Standards
- Compact Chassis Design

## Audio Applications

- Mic Preamp
- Line Preamp
- Line Drive
- Choirs
- Remote System Controller

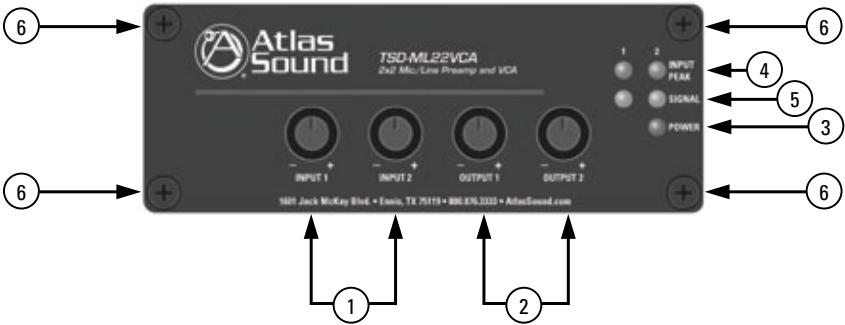
## Installation

- Churches
- Restaurants
- Sports Bars
- Schools
- Industrial Facilities
- House of Worship





### Front Panel Description



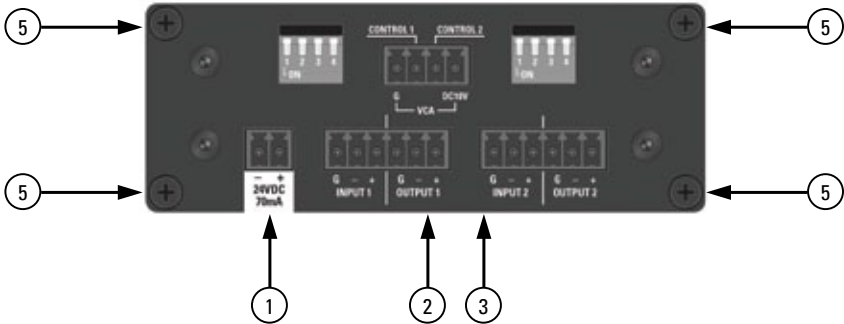
- Input 1-2 Level Controls** - Adjusts the gain of the independent input signals. Turn clockwise to increase the signal level and counter-clockwise to decrease it. **Note:** The Input Level Control knobs can be removed and replaced with a supplied security cover to prevent unauthorized adjustment.
- Output 1-2 Level Controls** - Adjusts the gain of the independent output signals. Turn clockwise to increase the signal level and counter-clockwise to decrease it. **Note:** The Output Level Control knobs can be removed and replaced with a supplied security cover to prevent unauthorized adjustment.
- Power LED** - Illuminates Blue when 24VDC is present.
- Input Peak LEDs** - Illuminates Red when the input signal reaches 3dBV below when signal clipping will occur. Occasional flashing is normal but if this indicator is continuously On, then reduce the input level using the output level controls on the front panel. There is an LED for each input channel.
- Signal LEDs** - Illuminates Green when the input signal strength reaches 25mV to verify a signal path. There is an LED for each input channel. Note: The LED will not illuminate if the output Level is turned Off.
- Bracket Retainer Points** - Each TSD includes two mounting brackets for securing the TSD to a cabinet or wall. Remove screws and align the bracket with the panel hole before firmly tightening the screws.



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## Rear Panel Description



TSD Input/Output connections are removable for easy system wiring. The connector has a 3.5mm pitch between pins.

- DC Power Input** - Each TSD that requires DC power comes with a 2 position connector for an external 24VDC power supply (sold separately). Because of the TSD's low power consumption, a single external power supply may power more than one TSD. Please refer to the specifications on current requirements in milliamps to match with the appropriate power supply. **Note:** It is acceptable to exceed the current requirements of the TSDs but NOT safe to use a power supply that is below the current requirement of the device.
- Balanced Mic/Line Input 1-2** - Connects to balanced line or mic level sources. Your connection must be mated properly to the input connector or signal loss and/or noise may occur. For gain or source input type selection, refer to the "Dip Switch Function Identification" chart for proper input setting. **Note:** Unbalanced line level inputs can be inserted with proper wire configuration by connecting the (G) and (-) terminals together.
- Balanced Mic/Line Output 1-2** - Provides output when an input signal is present for connection to balanced mic or line level devices. Your output connections must be connected properly to the connectors or loss and/or noise may be introduced into the signal. For gain or source input type selection, refer to the "Dip Switch Function Identification" chart for proper output setting. **Note:** Unbalanced line level devices can be used with proper wire configuration by connecting the (G) and (-) terminals together.
- VCA** - Remotely control the audio levels via VCA technology. Connect one side of a 10K linear taper pot to the terminal marked DC10V, the other side of the pot to the (G) terminal, and the wiper to the Control 1 terminal. Set the switch to the correct channel terminal. Control 1 will adjust input channel 1 and Control 2 will adjust input channel 2.
- Cable Management Retainer Points** - Each TSD includes two cable retainer straps for securing the included cable management retainers. Remove one of the rear panel screws, align the panel hole with a retainer and firmly tighten the screws.





### Dip Switch Function Identification

#### SWITCH FUNCTIONS

INPUT 1			
1	2	3	4
PHANTOM	INPUT	125Hz/12dB LOW CUT	OUTPUT
OFF	LINE	OFF	LINE
ON	MIC	ON	MIC

INPUT 2			
1	2	3	4
PHANTOM	INPUT	125Hz/12dB LOW CUT	OUTPUT
OFF	LINE	OFF	LINE
ON	MIC	ON	MIC

### Switch Position

- DIP SW # 1 - 24VDC Phantom Power applies power for condenser mic operation. Down position is On.
- DIP SW # 2 - Input Mic or Line Select for input gain selection. Up position is Line, down position is Microphone.
- DIP SW # 3 - Low Cut Filter engages at 125Hz with a roll off rate of 12dB per octave. This filter operates either in the Line or Mic mode and is available on each input. Ideal for vocal microphones to reduce low frequency energy and to increase intelligibility. Down position is On.
- DIP SW # 4 - Output Mic or Line Select for output gain selection. Up position is Line, down position is Microphone.

### Knob and Security Cover

All front panel level controls feature a removable knob that can be replaced with an included security cover. Follow these steps to prevent potentiometer damage or unwanted changes.

1. Knob Installation - Turn the potentiometer shaft fully counter-clockwise. Align the knob indicator to the lowest setting on the panel and the potentiometer shaft slot. Carefully press the knob onto the potentiometer shaft. Do not force or damage may occur to the potentiometer.
2. Security Cover Installation – Remove the knob from the panel and insert the cover. Do not force or damage may occur to the potentiometer. Small pliers may be required to remove the knobs.

### Mounting

There are three ways to securely mount this TSD:

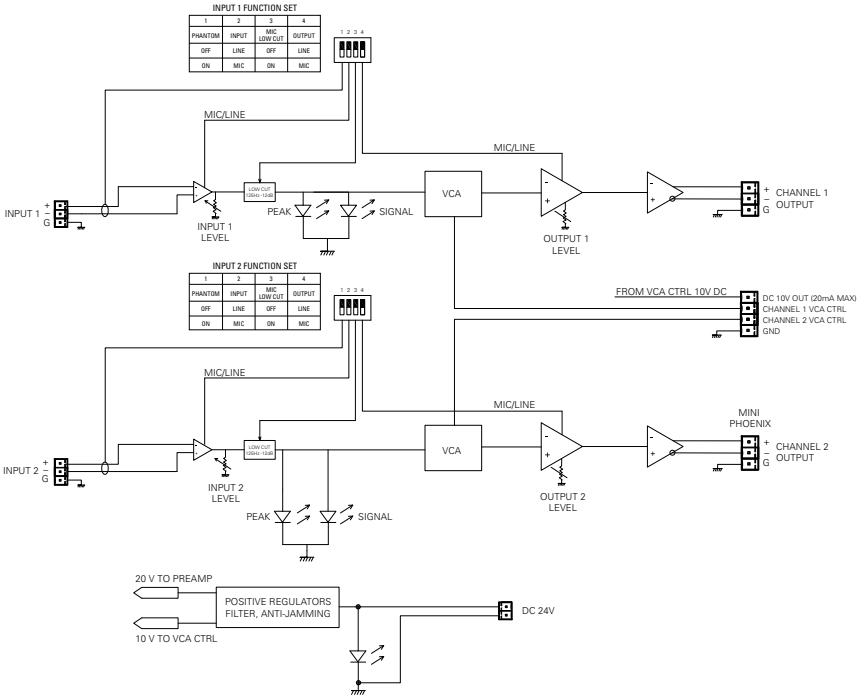
1. Velcro™ - Each unit includes industrial grade Velcro™ with adhesive backing to adhere to any flat surface.
2. Brackets - Each unit includes two mounting brackets to secure to a cabinet or wall.
3. Rack Mount Panel - The optional TSD-RMK rack mount panel supports up to four TSDs in a 1RU space.



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**Block Diagram**



**Specifications**

- Description 2 x 2 Mic/Line Preamp with VCA Control
- Chassis Color Black
- Chassis Material Aluminum
- Inputs**
- Type Qty 2, Balanced Mic or Line Selectable
- Connection Removable 3 Position Captive Screw 3.5mm Spacing
- Impedance 1.2K $\Omega$  Balanced, 600 $\Omega$  Unbalanced
- Phantom 24VDC Defeatable
- Low Cut Filter 125Hz/12dB Defeatable
- Line Input Level 1V (0dBV) Balanced = 2V (+6dBV) Balanced Output, Maximum Input 6V (+15dBV)
- Mic Input Level 46dB Gain, 10mV (-40dB) Balanced = 2V (+6dBV) Balanced Output, Maximum Input 40mV (-27dBV)





### Outputs

Type	Qty 2, Balanced Mic or Line Selectable
Connection	Removable 3 Position Captive Screw 3.5mm Spacing
Impedance	300Ω Balanced, 150Ω Unbalanced
Line Output Level	1V (0dBV) In = 2V (+6dBV), Maximum Output 6V (15dBV)
Mic Output Level	10mV (-40dBV) In = 80mV (-21dBV), Maximum Output 300mV (-10dBV)

### Controls

Input Level Control	Qty 2, Removable Knobs with Security Covers
Output Level Control	Qty 2, Removable Knobs with Security Covers
VCA Control Port	Channel 1 & 2, +10VDC Return Design, Removable 4 Position Captive Screw 3.5mm Spacing
Dip Switch Function	<ul style="list-style-type: none"> <li>• Qty 2, Phantom Power 24VDC</li> <li>• Qty 2, Input Mic/Line Select</li> <li>• Qty 2, Input 125Hz/12dB High Pass Filter</li> <li>• Qty 2, Output Mic/Line Select</li> </ul>

### Indicators

Input Signal	Green, 25mV On Threshold, Qty 2
Input Peak	Red, -3dB Before Clip, Qty 2
Power	Blue

### Electrical

Frequency Response	20Hz - 20kHz (±1dB)
THD	.06% & 1kHz
Signal to Noise	Line to Line: 85dBV Mic to Line: 70dBV Line to Mic: 55dBV Mic to Mic: 55dBV

### Mounting

Velcro™	Industrial Grade, Included
Brackets	Qty 2, Included
TSD-RMK	Optional 1 RU Rack Mount Panel (Supports 4 TSD Units)
Cable Retainer	Qty 2, Included

### Power Requirements

Voltage	24VDC
Power Consumption	70mA
Power Consumption	1.68W
Dimensions	H 1.5" (39mm) x W 4" (101mm) x D 2.75" (70mm)
Weight	6oz, .165kg

### Accessories

TSD 24VDC Power Supplies  
TSD-RMK 1 RU Rack Panel

### Safety and Certifications

External Power Supply cUL, CE, RoHS, TUV



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## Limited Warranty

All products manufactured by Atlas Sound are warranted to the original dealer/installer, industrial or commercial purchaser to be free from defects in material and workmanship and to be in compliance with our published specifications, if any. This warranty shall extend from the date of purchase for a period of three years on all Atlas Sound products, including SOUNDOLIER brand, and ATLAS SOUND brand products except as follows: one year on electronics and control systems; one year on replacement parts; and one year on Musician Series stands and related accessories. Additionally, fuses and lamps carry no warranty. Atlas Sound will solely at its discretion, replace at no charge or repair free of charge defective parts or products when the product has been applied and used in accordance with our published operation and installation instructions. We will not be responsible for defects caused by improper storage, misuse (including failure to provide reasonable and necessary maintenance), accident, abnormal atmospheres, water immersion, lightning discharge, or malfunctions when products have been modified or operated in excess of rated power, altered, serviced or installed in other than a workman like manner. The original sales invoice should be retained as evidence of purchase under the terms of this warranty. All warranty returns must comply with our returns policy set forth below. When products returned to Atlas Sound do not qualify for repair or replacement under our warranty, repairs may be performed at prevailing costs for material and labor unless there is included with the returned product(s) a written request for an estimate of repair costs before any nonwarranty work is performed. In the event of replacement or upon completion of repairs, return shipment will be made with the transportation charges collect.

EXCEPT TO THE EXTENT THAT APPLICABLE LAW PREVENTS THE LIMITATION OF CONSEQUENTIAL DAMAGES FOR PERSONAL INJURY, ATLAS SOUND SHALL NOT BE LIABLE IN TORT OR CONTRACT FOR ANY DIRECT, CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE ARISING OUT OF THE INSTALLATION, USE OR INABILITY TO USE THE PRODUCTS. THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Atlas Sound does not assume, or does it authorize any other person to assume or extend on its behalf, any other warranty, obligation, or liability. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

## Service

Should your Atlas TSD require service, please contact the Atlas Sound warranty department at 1-877-689-8055, ext. 1274 to obtain an RA number.

Atlas Sound Tech Support can be reached at 1-800-876-3333.

Visit our website at [www.AtlasSound.com](http://www.AtlasSound.com) to see other Atlas products

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