Avalon VT-737SP / Mic preamp

Avalon VT-737sp Tube Channel Strip User Manual

Model: VT-737SP / Mic preamp

1. Introduction

Thank you for choosing the Avalon VT-737sp Tube Channel Strip. This professional audio device integrates a microphone preamplifier, instrument direct input (DI), opto-compressor, and a sweepable equalizer into a single 2U rack-mountable unit. Designed for superior audio performance, the VT-737sp provides a versatile and high-quality signal path for recording, mixing, and mastering applications. This manual provides essential information for the safe and effective operation of your unit.

2. Safety Information

Please read and understand all safety instructions before operating the VT-737sp. Retain this manual for future reference.

- **Power Source:** Connect the unit only to the specified AC voltage as indicated on the rear panel. Ensure the power cable is securely connected and not damaged.
- **Ventilation:** The VT-737sp contains vacuum tubes that generate heat. Ensure adequate ventilation around the unit. Do not block ventilation slots or operate in an enclosed space. Maintain at least 4 inches (10 cm) of clear space around the unit.
- **Moisture:** Do not expose the unit to rain, moisture, or excessive humidity. Do not place liquid-filled objects on or near the unit.
- **Servicing:** Refer all servicing to qualified service personnel. Do not attempt to open the chassis or perform repairs yourself, as this may expose you to dangerous voltages and will void the warranty.
- **Tube Handling:** Vacuum tubes are fragile and can be hot. Allow the unit to cool down before moving or servicing. Tube replacement should only be performed by qualified personnel.
- **Grounding:** Always ensure the unit is properly grounded to prevent electrical shock.

3. Features

The Avalon VT-737sp offers a comprehensive set of features designed for professional audio production:

- **Circuit Topology:** Utilizes four dual triode vacuum tubes (Sovtek 6922) with high-voltage discrete Class A

circuitry for optimal sonic performance.

- **Microphone Preamp:** Transformer-balanced input with a gain range of 0dB to +58dB, suitable for various microphones. Includes +48V phantom power for condenser microphones.
- **Instrument DI:** Front panel unbalanced jack socket for direct connection of instruments, offering a maximum input level of +30dB.
- **Line Input:** Balanced XLR input with a maximum input level of +36dB.
- **Opto-Compressor:** Class A vacuum tube opto-compressor with adjustable Threshold, Ratio, Attack, and Release controls. Features a side-chain function for de-essing using the dual sweep mid EQ.
- **Equalizer:** 100% discrete Class A transistor equalizer section with a musical passive filter design. Includes sweepable Bass, Low Mid, High Mid, and Treble bands.
- **Output Amplifier:** Tube-driven, 100% discrete, Class A low-noise output amplifier.
- **Metering:** Onboard VU meter switchable for output level monitoring or gain reduction display.
- **Stereo Linking:** Two VT-737sp units can be linked for stereo operation.

4. Controls and Connections

4.1 Front Panel Controls

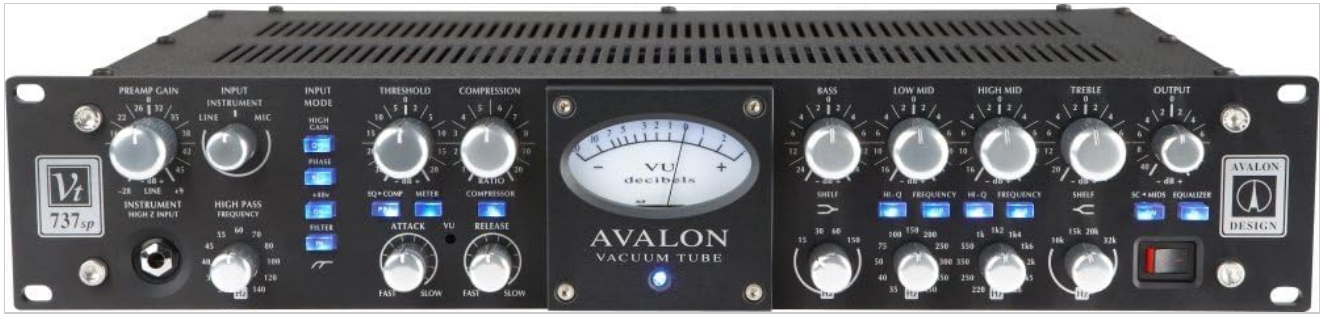


Figure 1: Front Panel View of the Avalon VT-737sp

The front panel provides access to all primary operational controls and the instrument input.

- **PREAMP GAIN:** Adjusts the input gain for the microphone and line inputs.
- **INPUT MODE:** Selects between Instrument (front panel DI), Line (rear panel XLR), or Mic (rear panel XLR) input.
- **HIGH GAIN:** Engages an additional gain stage for low-level signals.
- **PHASE:** Inverts the phase of the input signal.
- **HIGH PASS FREQUENCY:** Sets the cutoff frequency for the high-pass filter (30Hz, 60Hz, 120Hz).
- **FILTER:** Engages the high-pass filter.
- **THRESHOLD (COMPRESSION):** Sets the level at which compression begins.
- **RATIO (COMPRESSION):** Determines the amount of gain reduction applied once the threshold is exceeded.
- **ATTACK (COMPRESSION):** Controls how quickly the compressor reacts to signals exceeding the threshold.
- **RELEASE (COMPRESSION):** Controls how quickly the compressor returns to its original state after the signal falls below the threshold.
- **VU METER:** Displays either output level or gain reduction, selectable via a switch.
- **BASS (EQ):** Controls the gain of the low-frequency shelving equalizer.
- **LOW MID (EQ):** Controls the gain and sweepable frequency of the low-mid band.
- **HIGH MID (EQ):** Controls the gain and sweepable frequency of the high-mid band.
- **TREBLE (EQ):** Controls the gain of the high-frequency shelving equalizer.
- **OUTPUT:** Adjusts the overall output level of the unit.

- **POWER SWITCH:** Turns the unit on or off.

4.2 Rear Panel Connections

Figure 2: Rear Panel View of the Avalon VT-737sp

The rear panel houses all audio input/output connections and the power inlet.

- **AC INPUT:** Standard IEC power inlet for connecting the AC power cord.
- **GROUND LINK:** Terminal for connecting an external ground wire if required to reduce hum or noise.
- **COMPRESSOR LINK:** 1/4-inch mono jack for linking the compressor section of two VT-737sp units for stereo operation.
- **OUTPUT LINE:** Balanced XLR and 1/4-inch TRS outputs for connecting to mixers, audio interfaces, or other processing equipment.
- **INPUT LINE:** Balanced XLR input for connecting line-level audio sources.
- **INPUT MICROPHONE:** Balanced XLR input for connecting microphones. Includes +48V phantom power.

5. Setup

Proper setup ensures optimal performance and longevity of your VT-737sp.

5.1 Unpacking and Placement

1. Carefully remove the VT-737sp from its packaging. Inspect for any signs of damage during transit.
2. Place the unit in a well-ventilated area, preferably in a standard 19-inch equipment rack. Ensure sufficient airflow around the top, bottom, and sides of the unit. Avoid placing it near heat sources.

5.2 Power Connection

1. Ensure the power switch on the front panel is in the OFF position.
2. Connect the supplied IEC power cable to the AC INPUT on the rear panel of the VT-737sp and then to a grounded AC outlet of the correct voltage.

5.3 Audio Connections

Before making any audio connections, ensure all connected equipment is powered off to prevent potential damage or loud pops.

- **Microphone Input:** Connect your microphone to the INPUT MICROPHONE XLR connector on the rear panel. If using a condenser microphone, activate +48V phantom power via the front panel switch.
- **Instrument Input:** For direct instrument connection (e.g., guitar, bass), use the 1/4-inch jack on the front panel. Select 'Instrument' on the INPUT MODE switch.
- **Line Input:** Connect line-level sources (e.g., preamps, synthesizers) to the INPUT LINE XLR connector on the rear panel. Select 'Line' on the INPUT MODE switch.
- **Output:** Connect the OUTPUT LINE XLR or 1/4-inch TRS connectors to your audio interface, mixer, or other

destination.

- **Stereo Linking (Optional):** To link two VT-737sp units for stereo compressor operation, connect a standard 1/4-inch mono cable between the COMPRESSOR LINK jacks of both units.

6. Operating the VT-737sp

The VT-737sp offers a flexible signal chain: Preamp > Compressor > Equalizer > Output. Each section can be bypassed independently.

6.1 Powering On

After all connections are made, turn on the VT-737sp using the front panel POWER switch. Allow a few moments for the tubes to warm up and stabilize.

6.2 Input Section

1. Select the appropriate input source (Mic, Instrument, Line) using the**INPUT MODE** switch.
2. Adjust the **PREAMP GAIN** to achieve a healthy signal level without clipping. Use the**HIGH GAIN** switch for very low-level sources.
3. Engage the **PHASE** switch if phase inversion is required.
4. Activate the **FILTER** and select a **HIGH PASS FREQUENCY** (30Hz, 60Hz, 120Hz) to remove unwanted low-end rumble or noise.

6.3 Compressor Section

The opto-compressor provides smooth and musical gain reduction.

- Adjust **THRESHOLD** to set the point at which compression begins. Lowering the threshold increases compression.
- Set the **RATIO** to determine the intensity of compression (e.g., 2:1 for subtle, 10:1 for more aggressive).
- Control the compressor's response time with **ATTACK** (fast for transients, slow for overall level) and **RELEASE** (fast for punch, slow for smooth sustain).
- For de-essing, engage the side-chain function and use the EQ's mid-bands to boost the sibilant frequencies, which will then trigger the compressor more effectively at those frequencies.

6.4 Equalizer Section

The passive EQ offers broad tonal shaping capabilities.

- Use the **BASS** and **TREBLE** controls for shelving boosts or cuts at the low and high ends of the spectrum.
- The **LOW MID** and **HIGH MID** bands feature sweepable frequency controls, allowing you to pinpoint and adjust specific frequencies. Adjust the gain for boost or cut.
- Experiment with subtle adjustments to achieve desired tonal characteristics.

6.5 Output and Metering

- Adjust the **OUTPUT** knob to set the final signal level sent from the unit.
- Use the **VU METER** to monitor either the output level (0 VU = +4dBu) or the amount of gain reduction applied by the compressor.

7. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your VT-737sp.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. Do not use liquid cleaners or solvents.
- **Ventilation:** Periodically check that the ventilation slots are clear of dust and debris. Ensure the unit has adequate airflow during operation.
- **Tube Life:** The vacuum tubes have a finite lifespan. If you notice a degradation in sound quality (e.g., increased noise, reduced clarity, inconsistent performance), the tubes may need replacement. This should only be performed by qualified service technicians.
- **Storage:** If storing the unit for an extended period, ensure it is in a dry, temperature-controlled environment, protected from dust and physical shock.

8. Troubleshooting

If you encounter issues with your VT-737sp, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
No Power	Power cable disconnected; Power switch off; Blown fuse; Power outlet issue.	Check power cable connection; Ensure power switch is ON; Check fuse (refer to service manual for location/type); Test power outlet with another device.
No Audio Output	Incorrect input mode selected; Gain set too low; Cables faulty or incorrectly connected; Compressor/EQ bypassed or set to extreme.	Verify INPUT MODE; Increase PREAMP GAIN and OUTPUT; Check all audio cables and connections; Ensure compressor/EQ are not bypassed or set to extreme values.
Hum or Noise	Ground loop; Faulty cables; Nearby electrical interference; Worn tubes.	Ensure proper grounding; Try different cables; Move unit away from other electronics; If persistent, tubes may need inspection by a technician.
Distorted Audio	Input signal too hot; Gain set too high; Output clipping; Faulty tubes.	Reduce input signal level; Lower PREAMP GAIN or OUTPUT; Check levels on connected equipment; If distortion persists, tubes may need inspection.
Compressor Not Working	Threshold set too high; Ratio set too low; Compressor bypassed.	Lower THRESHOLD; Increase RATIO; Ensure compressor is engaged.

If the problem persists after attempting these solutions, please contact Avalon customer support or a qualified service technician.

9. Specifications

Detailed technical specifications for the Avalon VT-737sp:

Specification	Value
Item Dimensions (L x W x H)	23.3 x 18.8 x 8.5 inches
Item Weight	28.3 pounds
Voltage	48 Volts (DC) Maximum Supply
Number of Channels	4 (Internal processing channels, not discrete inputs)

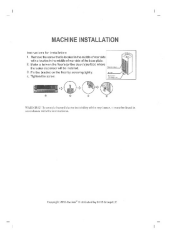
Specification	Value
Circuit Topology	Four dual triode vacuum tubes (Sovtek 6922), high-voltage discrete Class A
Microphone Gain Range	Transformer balanced 850/2500 ohm, 0dB to +58dB
Instrument Input Max Level	+30dB unbalanced front panel jack socket
Line Input Max Level	+36dB balanced XLR
Maximum Output Level	+30dB balanced 600 ohms, DC coupled, discrete Class A
Mounting Type	Rack Mount (2U)
Compliance	FCC (Partial)
Date First Available	April 13, 2004

10. Warranty and Support

Avalon Design products are manufactured to the highest standards. For information regarding warranty coverage and technical support, please refer to the warranty card included with your product or visit the official Avalon Design website. Keep your purchase receipt as proof of purchase for warranty claims.
For technical assistance, troubleshooting beyond this manual, or service inquiries, please contact Avalon Design customer support directly. Contact information can typically be found on their official website or in the product packaging.

Related Documents - VT-737SP / Mic preamp

	Avalon Nano 3 Test Instructions and Operation Guide Comprehensive guide for the Avalon Nano 3, detailing power-on procedures, button functions (Power, Switch), light effects, air speed control, network setup via the Avalon Remote App, and FCC compliance information.
	Avalon Nano 3 Test Instructions and FCC Compliance Comprehensive test instructions for the Avalon Nano 3, covering power-on, button usage, and network configuration, along with FCC compliance information.

	[Avalon Water Cooler Base: Installation Guide and Features] This guide provides installation instructions for the Avalon water cooler base, detailing its features such as height extension and anti-tip technology. Find support contact information and connect with Avalon on social media.
	[Avalon Water Dispenser Machine Installation Guide] Step-by-step instructions for installing an Avalon water dispenser, including safety warnings and visual descriptions of the installation process.
	[Avalon Water Cooler Use and Care Guide] Comprehensive guide for Avalon water coolers, covering setup, operation, cleaning, and troubleshooting for models A1CTWTRCLRWHT and A1CTWTRCLRBLK.
	[Avalon A14/A14BLK Use and Care Guide] Comprehensive guide for Avalon A14 and A14BLK water coolers, covering setup, operation, maintenance, troubleshooting, and safety information for perfect water delivery.