

Avalon U5

Avalon U5 Class A Active Instrument DI and Preamplifier

User Manual

1. INTRODUCTION

The Avalon U5 is a high-voltage, Class A active instrument DI (Direct Injection) and preamplifier designed to optimize signal integrity and musical performance. It combines a unique passive tone selector with a variable gain preamplifier and filter, making it suitable for a wide range of instruments including bass guitar, acoustic guitars, electric guitars, keyboards, synthesizers, and low-output pickups.

This manual provides comprehensive instructions for the proper setup, operation, and maintenance of your Avalon U5 to ensure optimal performance and longevity.

2. KEY FEATURES

- Pure Class A, 100% discrete design for superior sonic quality.
- Variable gain preamplifier with up to +30dB boost.
- Dual microphone and line outputs for versatile connectivity.
- High input impedance (3,000,000 ohms) to prevent loading effects on sensitive pickups.
- Very low noise (-100dB) and high headroom (+30dB).
- Six passive tone bank selections for instrument enhancement.
- DC coupled Class A output for superior bass response.
- High cut switch to eliminate unwanted high-frequency noise.
- LED active signal indicator.
- Headphone monitor output jack for personal listening.
- Low distortion (less than 0.5% THD and IMD).
- High level 400-watt speaker input.
- Active to thru selector and ground isolation switch.
- Internal toroidal power supply for low noise operation.

3. SETUP INSTRUCTIONS

3.1 Unpacking and Inspection

Carefully remove the U5 unit from its packaging. Inspect the unit for any signs of damage that may have occurred during shipping. If any damage is found, contact your dealer immediately.

3.2 Power Connection

The U5 features an internal toroidal power supply. Connect the supplied AC power cord to the IEC inlet on the rear panel of the unit and then to a suitable AC power outlet. Ensure the voltage selector (if present and accessible) matches your local mains voltage (115-230V internal select, 50-60Hz AC 40W maximum).

3.3 Initial Placement

Place the U5 on a stable, flat surface. Ensure adequate ventilation around the unit to prevent overheating. Avoid placing it near strong electromagnetic fields or sources of excessive heat or moisture.

4. OPERATING INSTRUCTIONS

4.1 Front Panel Controls

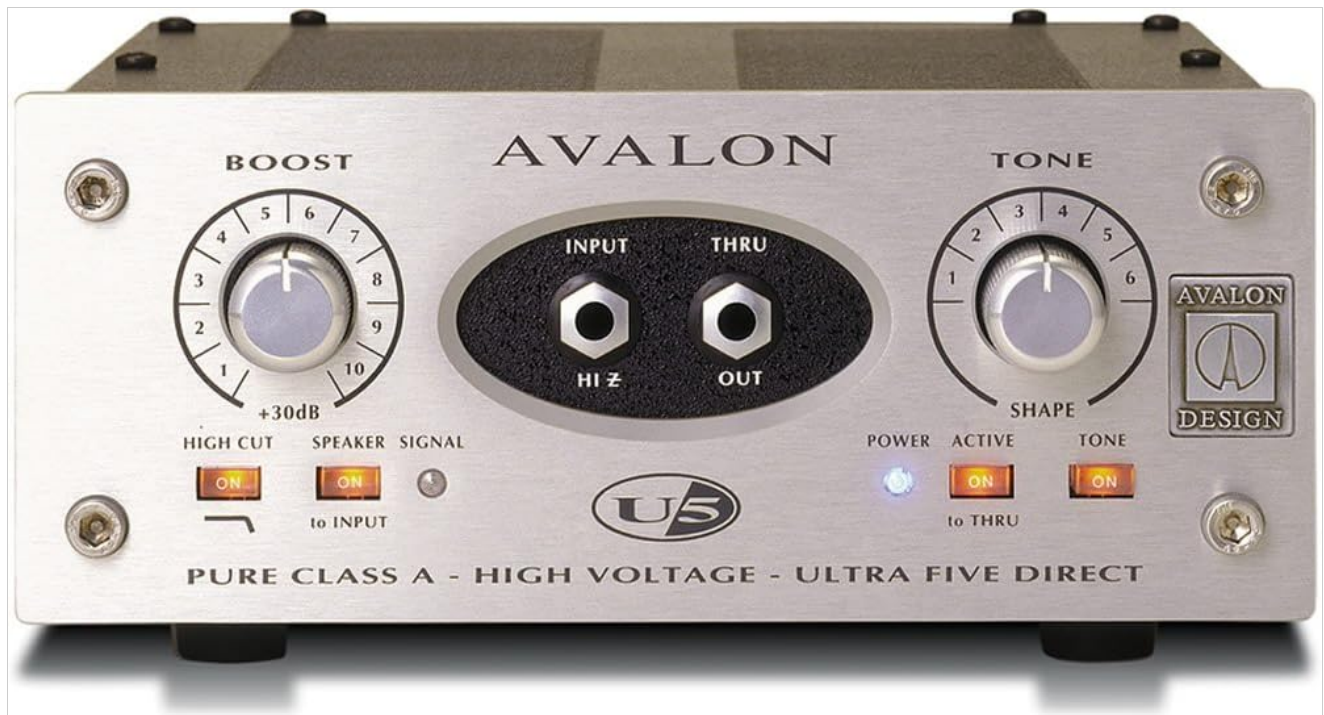


Figure 1: Front Panel Overview of the Avalon U5

This image displays the front panel of the Avalon U5, showing the 'BOOST' gain control knob, 'TONE' shape selector knob, 'INPUT' and 'THRU' 1/4-inch jacks, and various toggle switches for 'HIGH CUT', 'SPEAKER SIGNAL', 'POWER', 'ACTIVE', and 'TONE'. An 'AVALON DESIGN' logo is also visible.

- **BOOST Knob:** This rotary control adjusts the input gain of the preamplifier from 0dB to +30dB. Use this to match the output level of your instrument to the U5's input stage.
- **HIGH CUT Switch:** Engages a high-cut filter (-3dB at 8kHz) to reduce unwanted high-frequency noise or harshness, particularly useful for acoustic instruments or noisy pickups.
- **SPEAKER SIGNAL Switch:** Activates the high-level speaker input. When engaged, the U5 can accept a signal directly from a speaker output (up to 400W) of an amplifier, allowing you to capture the amplifier's tone.
- **INPUT (Hi-Z) Jack:** A 1/4-inch instrument input with a high impedance of 3,000,000 ohms, suitable for guitars, basses, keyboards, and other instruments.
- **THRU Jack:** A 1/4-inch output that can either pass the direct instrument input signal or the processed

(boosted and equalized) signal to an amplifier, depending on the 'ACTIVE to THRU' switch setting.

- **POWER Switch:** Toggles the unit's power on and off.
- **ACTIVE to THRU Switch:** Determines whether the THRU jack outputs the direct input signal (passive) or the U5's processed signal (active).
- **TONE Knob (SHAPE):** A 6-position rotary switch that selects one of six passive tone-EQ curves. Refer to Section 4.3 for details on each tone setting.
- **TONE Switch:** Engages or bypasses the selected tone-EQ curve.
- **SIGNAL LED:** Illuminates to indicate the presence of an active audio signal.

4.2 Rear Panel Connections



Figure 2: Rear Panel Connections of the Avalon U5

This image shows the rear panel of the Avalon U5, featuring the IEC power inlet, 'EARTH LIFT' switch, two XLR balanced output jacks (Mic Level and Line Level), a 1/4-inch 'PHONES' output, and a 1/4-inch 'SPEAKER IN' jack with a warning label.

- **AC Power Inlet:** Connects to the mains power supply using the provided IEC cable.
- **EARTH LIFT Switch:** Disconnects the audio ground from the chassis ground to eliminate hum and ground loop issues.
- **BALANCED OUTPUT (XLR):** Two XLR outputs provide balanced signals. One is optimized for microphone level (150 ohms) and the other for line level (600 ohms). Connect these to your mixing console, audio interface, or other professional audio equipment.
- **PHONES Jack:** A 1/4-inch stereo output for connecting headphones for personal monitoring.
- **SPEAKER IN Jack:** A 1/4-inch input for connecting directly from a speaker output of an amplifier (up to 400W). **Important:** This input must be used with a speaker cabinet connected to the amplifier's speaker output. Do not connect directly to an amplifier without a load.

4.3 Tone Selector Settings

The U5 features six passive tone-EQ curves, selected via the front panel TONE knob. These curves are designed to enhance various instruments and musical styles:

1. **Tone 1:** Flat response, providing a transparent signal.
2. **Tone 2:** Gentle low-mid boost, suitable for adding warmth to bass or acoustic guitars.

3. **Tone 3:** Mid-range scoop, often used for slap bass or modern guitar tones.
4. **Tone 4:** High-frequency boost, ideal for adding clarity and presence to acoustic instruments or dull-sounding pickups.
5. **Tone 5:** Low-frequency boost, for adding depth and fullness to bass instruments.
6. **Tone 6:** Combination of low and high boosts, providing a 'smiley face' EQ curve for a more pronounced, scooped sound.

5. MAINTENANCE

5.1 Cleaning

To clean the U5, use a soft, dry cloth. For stubborn dirt, a slightly damp cloth with a mild, non-abrasive cleaner can be used, ensuring no liquid enters the unit. Always disconnect the power before cleaning.

5.2 General Care

- Avoid exposing the unit to extreme temperatures, humidity, or direct sunlight.
- Do not block ventilation openings.
- Protect the unit from physical shocks or drops.
- If the unit requires service, refer to the troubleshooting section or contact Avalon Design support.

6. TROUBLESHOOTING

This section addresses common issues you might encounter with your Avalon U5. If you experience problems not covered here, please contact Avalon Design technical support.

- **No Power:** Ensure the AC power cord is securely connected to both the U5 and a working power outlet. Check the power switch position.
- **No Sound Output:**
 - Verify that your instrument is properly connected to the INPUT jack.
 - Check the BOOST knob setting; ensure it is not at minimum.
 - Confirm that the output cables (XLR or THRU) are correctly connected to your amplifier or mixing console.
 - Ensure the 'TONE' switch is engaged if you expect an EQ curve.
 - If using the 'SPEAKER IN', ensure a speaker cabinet is connected to your amplifier's output.
- **Hum or Noise:**
 - Engage the 'EARTH LIFT' switch on the rear panel to break potential ground loops.
 - Check all cable connections for proper seating and integrity.
 - Ensure the U5 is not placed too close to power transformers or other sources of electromagnetic interference.
 - If using the 'HIGH CUT' switch, engage it to reduce high-frequency noise.
- **Distorted Sound:**
 - Reduce the 'BOOST' knob setting. The U5 has high headroom, but excessive input levels can still cause distortion.
 - Check the input level of the device connected to the U5's output (e.g., mixer preamp gain).

7. SPECIFICATIONS

Parameter	Value
Circuit Topology	100% discrete, high-voltage Class A
Gain	Switched 3dB steps, maximum gain +30dB
Input Impedance	3,000,000 ohm unbalanced (single ended)
Maximum Input Level	+24dBu unbalanced, 400w speaker input
Output Connectors	2 x XLR type, pin 2 hot electronic balanced
Maximum Output Level (Class A)	+30dBu DC coupled, balanced 600 ohms (mic and line out)
Headphone Output	0.5w into 600 ohms
Noise 20kHz Unweighted	-100dBu minimum gain position
Distortion THD, IMD	0.1% at +10dB
Frequency Response (-/+0.5dB)	5Hz to 100kHz
Frequency Response (-3dB)	1Hz to 500kHz (input band limited)
High Cut Filter	-3dB at 8kHz minimum phase design
Tone Selector	Six position rotary switch, all passive filters
AC Power	Internal toroidal AC supply
Dimensions (Unit)	8.5 x 3.5 x 12 in (216 x 88 x 305mm)
Weight (Packed)	12lbs (5.4kg)
Item Weight (Unit)	9 pounds
Model Number	U5
Date First Available	October 2, 2005
Compatible Devices	Guitar, Bass, Keyboards, Synthesizers
Material	Metal
Color	Silver
Power Source	Corded Electric




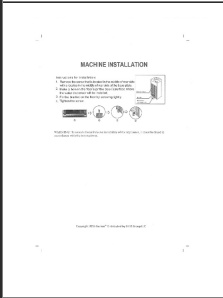


8. WARRANTY AND SUPPORT

For warranty information and technical support, please contact Avalon Design directly through their official website or authorized distributors. Keep your purchase receipt as proof of purchase for any warranty claims.

Avalon Design Contact Information:

- Website: www.avalondesign.com
- Address: Avalon Design - San Clemente, California, U.S.A.

Related Documents - U5

	<p>Avalon Nano 3 Test Instructions and Operation Guide</p> <p>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.</p>
	<p>Avalon Nano 3 Test Instructions and FCC Compliance</p> <p>Comprehensive test instructions for the Avalon Nano 3, covering power-on, button usage, and network configuration, along with FCC compliance information.</p>
	<p>Avalon Water Cooler Base: Installation Guide and Features</p> <p>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.</p>
	<p>Avalon Water Dispenser Machine Installation Guide</p> <p>Step-by-step instructions for installing an Avalon water dispenser, including safety warnings and visual descriptions of the installation process.</p>
	<p>Avalon Water Cooler Use and Care Guide</p> <p>Comprehensive guide for Avalon water coolers, covering setup, operation, cleaning, and troubleshooting for models A1CTWTRCLRWHT and A1CTWTRCLRBLK.</p>
	<p>Avalon A14/A14BLK Use and Care Guide</p> <p>Comprehensive guide for Avalon A14 and A14BLK water coolers, covering setup, operation, maintenance, troubleshooting, and safety information for perfect water delivery.</p>