

Black Lion Audio Revolution EXP

Black Lion Audio Revolution EXP 8x8 AD/DA Converter User Manual

1. INTRODUCTION

The Black Lion Audio Revolution EXP is an 8x8 AD/DA converter designed to expand the input/output capabilities of your ADAT-compatible audio interface. It provides 16 channels of premium-quality analog-to-digital and digital-to-analog conversion at sample rates up to 24-bit/192kHz. Featuring ultra-low-jitter Macro MMC word clocking, boutique components, and comprehensive connectivity, the Revolution EXP ensures high-fidelity audio performance and reliable synchronization for professional studio environments.

2. KEY FEATURES

- Adds 8-in/8-out (16 channels total) to ADAT-compatible interfaces.
- Professional-grade AD/DA conversion up to 24-bit/192kHz.
- Ultra-low jitter Macro MMC word clocking for precise synchronization.
- Accepts external word clock input for flexible clocking options.
- 8 analog TRS inputs with switchable -10dB pads.
- 8 analog TRS outputs.
- 8 ADAT digital inputs and 8 ADAT digital outputs (S/MUX compatible).
- Utilizes high-quality components from Nichicon, Vishay, and Wima for optimal signal integrity.
- Supports sample rates: 44.1, 48, 88.2, 96, 176.4, 192 kHz.
- Integrated 8-stage LED meters for all inputs and outputs.

3. SETUP

Follow these steps to properly set up your Black Lion Audio Revolution EXP:

1. **Power Connection:** Connect the included external power supply to the DC IN port on the rear panel of the Revolution EXP and then to an appropriate power outlet.
2. **ADAT Connection:** Connect ADAT optical cables from the ADAT OUT ports of your primary audio interface to the ADAT IN ports on the Revolution EXP. Similarly, connect ADAT optical cables from the ADAT OUT ports of the Revolution EXP to the ADAT IN ports of your primary audio interface. Ensure proper channel mapping (e.g., ADAT 1 for channels 1-8, ADAT 2 for channels 9-16 if applicable).
3. **Analog I/O:** Connect your analog audio sources (microphones, instruments, line-level devices) to the TRS IN ports on the rear panel. Connect your analog outputs (monitors, outboard gear) from the TRS OUT ports.
4. **Word Clock (Optional):** If using an external master clock, connect a BNC cable from your master clock's output to the WORD CLOCK IN port on the Revolution EXP. If the Revolution EXP is to be the master clock, ensure your other devices are set to sync to its word clock output (MACRO-MMC CLOCK OUT).
5. **Power On:** Once all connections are secure, power on the Revolution EXP using the power switch on the front panel.



Figure 3.1: Front panel of the Revolution EXP, showing input/output meters, clock source selection, and power switch.



Figure 3.2: Rear panel of the Revolution EXP, displaying DC IN, ADAT I/O, Word Clock I/O, and analog TRS I/O connections.

4. OPERATING INSTRUCTIONS

The Revolution EXP is designed for straightforward operation, primarily acting as an extension of your main audio interface.

4.1. Clock Synchronization

- **Internal Clock (Macro MMC):** The Revolution EXP's internal Macro MMC clock provides ultra-low jitter synchronization. If the Revolution EXP is the master clock, set your primary audio interface and other digital devices to sync to its word clock or ADAT input.
- **External Clock:** If you have a dedicated master clock, connect it to the WORD CLOCK IN. Set the Revolution EXP's clock source to external word clock. Ensure all devices in your system are synchronized to the same master clock.
- **ADAT Sync:** When connected via ADAT, the Revolution EXP can sync to the clock signal embedded in the ADAT stream from your primary interface.

4.2. Analog Input Pads

The analog TRS inputs feature -10dB pads. These pads are useful for attenuating hot input signals to prevent clipping and ensure optimal signal-to-noise ratio. Engage the pad for sources with high output levels, such as certain line-level instruments or preamps.

4.3. Metering

The front panel features bright 8-stage LED meters for all 8 inputs and 8 outputs. These meters provide a visual indication of signal levels, allowing you to monitor your audio and prevent clipping. Aim for signal levels that are consistently in the green and yellow ranges, with occasional peaks into the red, but avoid sustained red indications.



Figure 4.1: Angled view of the Revolution EXP, highlighting the front panel meters and display.



Figure 4.2: Close-up view of the Revolution EXP's LED meters, showing signal level indications.

5. MAINTENANCE

To ensure the longevity and optimal performance of your Revolution EXP, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. Avoid abrasive cleaners, solvents, or harsh chemicals.
- **Environment:** Operate the unit in a clean, dry environment away from direct sunlight, excessive heat, humidity, or dust. Ensure adequate ventilation around the unit.
- **Power Supply:** Always use the original or an approved replacement external power supply.
- **Connections:** Periodically check all cable connections to ensure they are secure and free from damage.

6. TROUBLESHOOTING

If you encounter issues with your Revolution EXP, refer to the following common troubleshooting steps:

- **No Power:**
 - Ensure the external power supply is securely connected to both the unit and a working power outlet.
 - Verify the power switch on the front panel is in the 'ON' position.
- **No Audio Input/Output:**
 - Check all ADAT and analog TRS cable connections. Ensure they are fully inserted and not damaged.
 - Verify that your primary audio interface is correctly configured to send/receive audio via ADAT.
 - Check the input/output meters on the Revolution EXP to see if a signal is present.
 - Ensure the -10dB pads on the inputs are not inadvertently engaged if your source signal is low.
- **Synchronization Issues (Clicks, Pops, Dropouts):**
 - Confirm that all digital devices in your system (Revolution EXP, primary interface, etc.) are synchronized to a single master clock source.
 - If using an external word clock, ensure the BNC cable is properly connected and terminated (if required by your clock).
 - Verify that the sample rates are consistent across all devices in your digital audio chain.
- **Distorted Audio:**
 - Check input levels using the front panel meters. If consistently in the red, engage the -10dB pad or reduce the source level.
 - Ensure all cables are in good condition and correctly connected.

7. SPECIFICATIONS

Feature	Detail
Item Model Number	Revolution EXP
ASIN	B0CLF187YH
Item Weight	9.66 pounds (4.38 kg)
Product Dimensions	24.41 x 11.81 x 5.12 inches (62 x 30 x 13 cm)
AD/DA Conversion	Up to 24-bit/192kHz
Analog I/O	8 x TRS Inputs (with -10dB pads), 8 x TRS Outputs
Digital I/O	8 x ADAT Inputs (S/MUX), 8 x ADAT Outputs (S/MUX)
Clocking	Macro MMC (Internal), Word Clock In
Supported Sample Rates	44.1, 48, 88.2, 96, 176.4, 192 kHz
Power Supply	External DC Power Supply
Date First Available	October 18, 2023

8. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries regarding your Black Lion Audio Revolution EXP, please refer to the official Black Lion Audio website or contact their customer support directly. Keep your proof of purchase for warranty claims.

Black Lion Audio Official Website: www.blacklionaudio.com