

B2 Audio B2-DSP-SIXTEN-BK

B2 Audio SixTen 10-Channel DSP User Manual

Model: B2-DSP-SIXTEN-BK

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your B2 Audio SixTen 10-Channel Digital Signal Processor (DSP). Please read this manual thoroughly before using the device to ensure proper functionality and to maximize its performance.

2. PRODUCT OVERVIEW

The B2 Audio SixTen DSP is an advanced digital signal processor designed for precise audio customization in car audio systems. It features 6 inputs and 10 outputs, offering extensive control over your sound environment.

Key Features:

- **Advanced Digital Signal Processing:** 6-input, 10-output DSP with 96 kHz, 32-bit resolution for clear audio and precise tuning.
- **Wireless Control:** Adjust settings via Bluetooth using the dedicated iOS & Android application for real-time customization.
- **High-Voltage Output:** Each of the 10 output channels delivers a 4-volt signal for optimal performance.
- **Compact Design:** Engineered for seamless integration with a space-saving form factor of 4.5" x 5.75" x 1.5".
- **Professional-Grade Sound:** Designed for precise frequency control, low distortion, and superior sound staging.



Image: Angled view of the B2 Audio SixTen DSP, highlighting its compact design and various connection points.

What's in the Box:

- (1) B2 Audio SixTen 6-Input, 10-Output 4V DSP



Image: The retail packaging for the B2 Audio SixTen DSP, indicating the product is ready for installation.

3. SAFETY INFORMATION

Observe the following safety precautions during installation and operation:

- Always disconnect the vehicle's battery before beginning any electrical work.
- Ensure proper grounding to prevent electrical hazards.
- Do not expose the DSP to moisture or extreme temperatures.
- Consult a professional installer if you are unsure about any part of the installation process.
- Use appropriate gauge wiring for power and signal connections.

4. SETUP AND INSTALLATION

Proper installation is crucial for optimal performance. This section outlines the steps for physically installing and connecting the DSP.

4.1 Physical Installation

- Choose a dry, well-ventilated location in your vehicle, away from direct heat sources or moving parts.
- Mount the DSP securely using appropriate fasteners to prevent vibration.
- Ensure sufficient space around the unit for air circulation and cable management.

4.2 Wiring Connections

The B2 Audio SixTen DSP features 6 RCA inputs and 10 RCA outputs, along with a power terminal block.

- **Power Connection:** Connect the power terminal block to a fused 12V constant power source, ground, and a remote turn-on lead from your head unit.
- **Input Connections:** Connect your audio source (e.g., head unit, auxiliary input) to the RCA input jacks (AUX1-AUX6).
- **Output Connections:** Connect the RCA output jacks (OUT1-OUT10) to your amplifiers. Each output can be configured for specific channels (e.g., front left, front right, subwoofer).



Image: Front panel of the DSP, illustrating the RCA input connections (AUX1-AUX6) and the power terminal block.



Image: Rear panel of the DSP, displaying the 10 RCA output connections (OUT1-OUT10).

5. OPERATING INSTRUCTIONS

The B2 Audio SixTen DSP is primarily controlled via a dedicated mobile application available for iOS and Android devices.

5.1 Bluetooth Connection

1. Ensure the DSP is powered on. The "BT" indicator light on the unit should be active.
2. On your smartphone or tablet, enable Bluetooth and search for available devices.
3. Select the B2 Audio SixTen DSP from the list of devices. Follow any on-screen prompts to complete pairing.
4. Open the B2 Audio DSP application. The app should automatically detect and connect to the paired DSP.

5.2 Using the Mobile Application

The application provides a graphical interface for all DSP functions, including:

- **Input/Output Routing:** Assign specific inputs to desired output channels.
- **Equalization (EQ):** Adjust the frequency response for each channel using a multi-band equalizer.
- **Crossovers:** Set high-pass, low-pass, and band-pass filters for each output to direct specific frequency ranges to appropriate speakers.
- **Time Alignment:** Adjust the delay for each channel to ensure sound from all speakers arrives at the listening position simultaneously.
- **Gain Control:** Fine-tune the output level for each channel.
- **Limiter:** Monitor and manage output levels to prevent clipping and speaker damage. The unit features "CLIP L" and "CLIP R" indicators.

- **Preset Management:** Save and recall multiple audio configurations for different listening preferences or music genres.

Refer to the in-app help or tutorials for detailed guidance on specific tuning parameters.

6. MAINTENANCE

The B2 Audio SixTen DSP requires minimal maintenance to ensure long-term performance.

- Keep the unit clean and free from dust and debris. Use a soft, dry cloth for cleaning.
- Ensure all connections remain secure. Periodically check wiring for any signs of wear or corrosion.
- Avoid exposing the unit to extreme temperatures or direct sunlight for extended periods.
- Ensure adequate ventilation around the unit to prevent overheating, especially during prolonged operation.

7. TROUBLESHOOTING

If you encounter issues with your B2 Audio SixTen DSP, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No power / Unit does not turn on	Incorrect wiring, blown fuse, insufficient power supply.	Check power, ground, and remote connections. Verify fuse integrity. Ensure vehicle battery is charged.
No audio output	Incorrect input/output routing, muted channels, incorrect gain settings, faulty RCA cables.	Verify input source and output connections. Check app settings for muted channels or low gain. Test RCA cables.
Distorted audio	Input signal too high, output gain too high, clipping.	Reduce input sensitivity or output gain. Monitor "CLIP L/R" indicators and adjust levels to prevent clipping.
Bluetooth connection issues	DSP not in pairing mode, interference, app issues.	Ensure DSP is powered on. Restart the app and your mobile device. Try re-pairing the device. Move closer to the DSP.
Unit gets hot	Insufficient ventilation, prolonged high-power operation.	Ensure adequate airflow around the unit. Reduce output levels if operating at maximum for extended periods.

If the problem persists after attempting these solutions, contact B2 Audio customer support for further assistance.

8. SPECIFICATIONS

The following are the technical specifications for the B2 Audio SixTen DSP:

Feature	Specification
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Feature	Specification
Model Number	B2-DSP-SIXTEN-BK
Inputs	6 (3 Left / 3 Right)
Input Connectors	RCA
Maximum Input Level	4.00 Vrms (+14dBu)
Outputs	10
Maximum Output Level	3.50 Vrms (+13dBu)
Frequency Response	10Hz to 24KHz (-1dB)
Total Harmonic Distortion + Noise (THD+N)	<0.01%
Signal Latency	<0.6 ms
Bit Rate	32-Bit
Sampling Frequency	96kHz
Operating Voltage DC	9.5 - 15V DC
Maximum Current Consumption	350mA
Connectivity Technology	Bluetooth, RCA
Controller Type	Bluetooth
Compatible Devices	Smartphone, Speaker, Tablet, iPhone
Product Dimensions (L x W x H)	4.5 x 5.75 x 1.5 inches
Item Weight	1.06 pounds
Color	Black
Audio Output Mode	Mono (Note: Configurable for multi-channel output via DSP software)
Surround Sound Channel Configuration	5.1 (Note: Configurable for various channel setups via DSP software)

TECHNICAL SPECIFICATIONS

- **Inputs:** 6 (3 Left/3 Right)
- **Connectors:** RCA
- **Input Level Max:** 4.00 Vrms (+ 14dBu)
- **Outputs:** 10
- **Output Max Level:** 3.50 Vrms (+ 13dBu)
- **Frequency Response:** 10Hz to 24KHz (-1dB)
- **THD+N:** <0.01%
- **Signal Latency:** <0.6 ms
- **Bit Rate:** 32-Bit
- **Sampling Frequency:** 96khz
- **Voltage DC:** 9.5 - 15v DC
- **Maximum consumption:** 350mA



Image: A visual representation of the B2 Audio SixTen DSP's technical specifications, including input/output details and performance metrics.

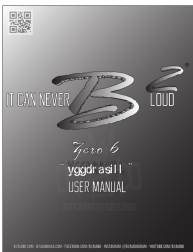

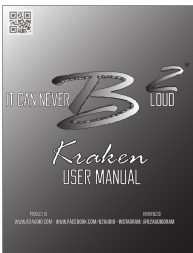
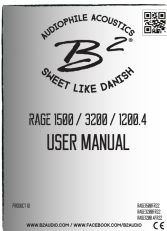
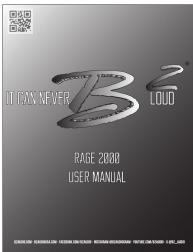
9. WARRANTY AND SUPPORT

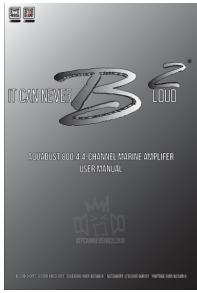
For warranty information and technical support, please refer to the official B2 Audio website or contact your authorized dealer. Keep your purchase receipt as proof of purchase for warranty claims.

Manufacturer: B2 Audio

Website: www.b2audio.com

Related Documents - B2-DSP-SIXTEN-BK

	<p>B2 Audio Zero 6 "Yggdrasill" User Manual</p> <p>User manual for the B2 Audio Zero 6 "Yggdrasill" amplifier, detailing design specifications, panel layout, installation, speaker connection, master/slave and daisy chain configurations, crossover settings, troubleshooting, and limited warranty information.</p>
	<p>B2 Audio RAGE 6 / RAGE 8 Subwoofer Owner's Manual</p> <p>Owner's manual for the B2 Audio RAGE 6 and RAGE 8 subwoofers, detailing specifications, enclosure suggestions, and important usage information.</p>
	<p>B2 Audio Kraken KRAKEN230 User Manual</p> <p>Comprehensive user manual for the B2 Audio Kraken KRAKEN230 competition-grade Class D amplifier, covering design features, specifications, panel layout, installation, troubleshooting, and warranty information.</p>
	<p>B2 Audio RAGE Series Amplifiers User Manual - RAGE 1500, 3200, 1200.4</p> <p>User manual for B2 Audio RAGE series car amplifiers (RAGE 1500, RAGE 3200, RAGE 1200.4). Details specifications, panel layout, installation, troubleshooting, and warranty information for these high-performance audio amplifiers.</p>
	<p>B2 Audio RAGE 2000 User Manual: Installation, Features, and Troubleshooting</p> <p>Comprehensive user manual for the B2 Audio RAGE 2000 amplifier, covering design specifications, panel layout, installation, power and speaker configuration, troubleshooting, and warranty information.</p>



[B2 Audio Aquadust 800.4 4-Channel Marine Amplifier User Manual](#)

User manual for the B2 Audio Aquadust 800.4 4-channel marine amplifier. Provides detailed information on installation, features, specifications, wiring diagrams, troubleshooting, and warranty.