RUGGED USB AUDIO POWER AMPLIFIER



Rugged USB Audio Power amplifier the capabilities of its Digital-to-Analog Converter (DAC) for output and Analog-to-Digital Converter (ADC) for input, along with its connectivity and features.

Higher bit depth allows for a wider dynamic range (the difference between the loudest and quietest sounds) and reduces quantization noise, leading to clearer and more lifelike sound reproduction, especially for subtle details and quieter passages.

Class D Stereo Audio Power Amplifier. This means it operates using a switching principle for high efficiency, generating less heat compared to traditional Class AB amplifiers. Commonly rated for **15 Watt** into a 4-ohm or 8-ohm load. For external speaker.

24-bit: Standard for professional digital recording. Offers a theoretical dynamic range of around 144 dB, which is well beyond the practical limits of most recording equipment and human hearing. **RCA jacks:** For connecting to stereo systems or active speakers

Digital Outputs which usually supports are S/PDIF (Coaxial or Optical/TOSLINK): For connecting to AV receivers, DACs, or other digital audio equipment. This transmits digital audio signals': A multi-channel optical digital audio format, found on more advanced audio interfaces' I/O: For connecting MIDI controllers, synthesizers, and other MIDI-compatible devices

USB Standard: USB 1.1, USB 2.0, USB 3.0, USB-C. USB 2.0 is sufficient for most stereo audio needs. USB 3.0/USB-C offers higher bandwidth, which is beneficial for multi-channel interfaces and lower latency.

Driver Support:

- Proprietary Drivers: Techsquare Proprietary Drivers Higher-end audio interfaces often come with custom drivers that provide better performance, lower latency, and access to advanced features (like internal mixers, DSP effects, or specific routing options)
- Drivers that support ASIO (Audio Stream Input/Output) on Windows or Core Audio on macOS, as these provide lower latency

Compatibility:

- Operating System: Windows (7, 8, 10, 11), macOS, Linux, MAC, Chrome OS.
- Device Compatibility: PC, Mac, Android devices (with OTG), gaming consoles.

Construction Materials & Design:

- Enclosure: Heavy-duty aluminium, reinforced plastics, or steel enclosures.
- Sealing: Gaskets, O-rings, and sealed connectors to prevent ingress of dust and water.
- Connectors: Ruggedized USB ports (e.g., locking USB-A/B, or industrial-grade M12 connectors if ultra-rugged) and robust audio jacks
- Mounting: Integrated mounting points or flanges for secure installation.
- Cable Strain Relief: Robust strain relief on integrated cables to prevent damage from bending or pulling.
- Internal Components: Vibration dampening for internal components, conformal coating on PCBs to protect against moisture and dust.
- EMI/RFI Shielding: Enhanced shielding to protect against electromagnetic and radio frequency interference, which can be prevalent in industrial or field settings.
- Operating Temperature Range: A wider range than typical consumer electronics.
- Storage Temperature Range: Specifies how extreme temperatures the device can withstand when not in operation.
- Compliance: Beyond MIL-STD, adherence to other industrial standards (e.g., CE, FCC, RoHS) for safety and environmental regulations.
- Reliability (MTBF): Mean Time Between Failures, a statistical measure of expected operating time between failures.
- Power Redundancy: For critical applications, an option for dual power inputs or battery backup.

Amplifier Type:
Class D Stereo Audio Power Amplifier. This means it operates using a switching principle for high efficiency, generating less heat compared to traditional Class AB amplifiers.

Channels:
Typically provides 1 channel, making it suitable for driving one speaker with 15watts Maximum.

LED Indications:
Typically, 1 Green LED for Power input and 1 RED LED for Audio Output.

Input Power :
12Volts at 2 amps external power supply source required.

Output Power :
Commonly rated for 15 Watts into a 4-ohm or 8-ohm load.

Dimensions : 120mm (D) x 70mm (W) x 45mm (H)

Weight : 0.7KG (Enclosure: Heavy-duty aluminium, steel enclosures)

Ordering Information:

- Part Number : TSQ-RUSB-APA-MIL-IND.
- Description : RUGGED USB AUDIO POWER AMPLIFIER.