ABERMAN

PROFESSIONAL AUDIO-VIDEO SOLUTIONS

aDA-2400U1

2-channel Power Amplifier
Class D with Switching Power Supply

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1. Introduction

Aberman aDA-2400U1 is two-channel power amplifier offers high quality audio amplifying for professional and commercial use. Thanks to high efficient Class D amplifier design and switching power supply technology the aDA-2400U1 offers powerful audio amplifying along with low power consumption and extremely low hum and distortion produce. Each of channels allows driving up to 400W at 8 Ohm load. Amplifier could be used in one of three modes: Stereo, Parallel or Bridge. These options greatly increase number of possible using schemes and allow built audio amplification solution for many different tasks. Each of two channels has its universal input on XLR connector with link output and supports connection for balanced and un-balanced analog audio sources. The separate regulation for channel output levels are provided on the front panel along with independent channels indication. Thanks to different types of protection realized for outputs and active cooling system aDA-2400U1 amplifier offers long and stable functionality in 24/7 mode what is extremely important for professional use cases. Amplifier is equipped with universal power supply with supported input voltage at 230V. Unit housed in the compact 1RU chassis and ready for the standard 19 inches rack mounting.

2. Features

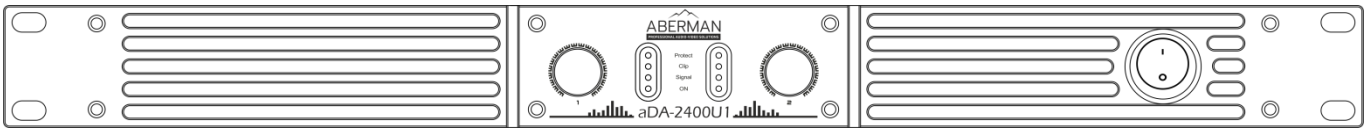
- Two channel power amplifier
- Class D amplifier with high efficiency
- Additionally saves about 40% of power consumption
- Switching power supply technology
- 400W per channel rated power at 8 Ohm load
- 4 and 8 Ohm supported load
- Balanced and Un-balanced input signal support with link outputs
- Front panel indication for input signal detection, clipping and protect mode
- Short circuit, overload, high temperature, signal clipping and DC protection
- Power On/Off safety muting for protecting speakers from damage
- High durability Speakon connectors for outputs
- Housed in compact chassis 1RU

3. Package Contents

1x 2-channel Power Amplifier Unit
1x AC Power Cord
1x Quick Start Guide

4. Unit's interfaces

4.1 Front Panel



Control Element	Function
ON	LED, Power status, active when unit turned on
SIGNAL	LED, Protection or Standby status, active when Output is Disabled
CLIP	LED, Clipping status, active when signal in channel clipped
PROTECT	LED, Input status, active when input signal is detected
OUTPUT	LED, Output status, active when signal is being sent to output
Switch	**Function**
POWER	turns unit on/off
Level Knob	**Function**
VOLUME	set output volume for the specified channel

Power Switch and LED

Switch unit mains on or off. Power LEDs lit blue when unit turned on.

Protection / Standby

RED Protect LEDs lit – means that output is currently disabled by the activated Protection Mode.

Protection Mode

Switching an output to the Protection mode could be caused by several issues:

- output line short circuit detected
- output channel overload
- thermal sensor reports internal temperature
- an hardware failure

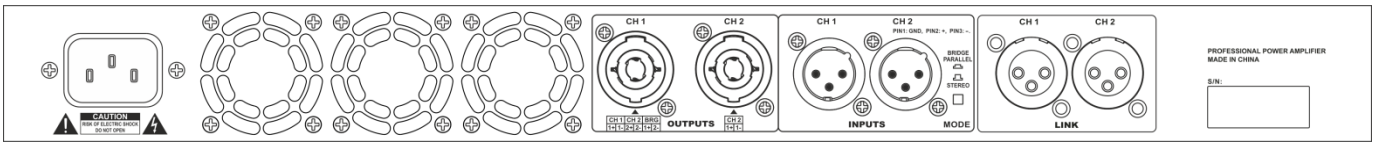
Clipping

RED Clip LED lit – means clipping is detected, this status could be caused when signal level is too high on input or output. It is normal when Clip LED is flashing time to time. It may happen because of changing the amplitude of the input signal. If Clip LED is lit constantly for a long time the output signal might be distorted, reduce the volume by front panel level knob.

Signal Present

Green LED lit – means signal detected and passed to the specified output.

4.2 Rear Panel



Port Name	Connector type	Description
Power Socket	IEC C14	Connect to the mains AC power line Internal power supply supports for ~230V AC
Speaker Output CH1,CH2	Speakon	Connect to speaker Output supports for low impedance loads only
Line Input CH1,CH2	3-pin Phoenix	Connect to audio source equipment Input supports balanced or unbalanced signal sources
Line Ouput CH1,CH2	3-pin Phoenix	Connect to other equipment Link outputs of the input channels
Control Element		**Function**
Mode Switch	Button	Amplifier Mode Switch Stereo, Parallel/Bridge

Amplifiers Modes and Connections

Amplifier could work in one of three operation modes. Depending on what mode is active there are different rules for connecting the load and using the system. Please read these instructions carefully incorrect connection may result in hardware failure.

NOTE: Before changing the operation mode - turn amplifier off before connecting the load and turn the volume levels counter clock wise to minimum for the each channel. Then press or unpress the **Mode Button** to select desired mode.

Stereo (Mode Button up)

Connect the stereo audio source to the XLR input connectors: left channel to the Input 1 and right channel to the input 2. Connect Link Outputs if it is needed.

Connect left speaker "+" wire to **Channel 1+**, left speaker "-" wire to **Channel 1-**, right speaker "+" wire to **Channel 2+**, right speaker "-" wire to **Channel 2-**. This way each channel will work independently. The output volume of the each channel is controlled by Channel 1 and 2 level knobs.

Parallel (Mode Button down)

Connect the mono audio source to one XLR line input only (channel 1 is recommended). Connect Link Outputs if it is needed.

Connect the first speaker "+" wire to **Channel 1+**, first speaker "-" wire to **Channel 1-**, the second speaker "+" wire to **Channel 2+**, second speaker "-" wire to **Channel 2-**. This way both output channels will produce the same signal. The output volume of the each channel is controlled by Channel 1 and 2 level knobs.

Bridge (Mode Button down)

Connect the mono audio source to one XLR line input only (channel 1 is recommended). Connect speaker to the channel 1 and 2 of amplifier outputs.

Wire "+" to **Channel 1+** and wire "-" to **Channel 2-**. This way both output channels will work in bridge mode and output power will be doubled. The output volume controlled by **Channel 1 level knob**.

NOTE: Never short output terminals! Do not connect 2Ohm load in stereo or parallel mode or 4 Ohm load in bridge mode!

5. Best Practice

Aberman engineers design products at the highest quality standards. To get the best results and achieve maximum performance from our products, please read this manual carefully. We recommend using high quality connectors, cables, and adapters only. Consider the points below when you choose accessories and position equipment.

6. Safety Instructions

WARNING: To reduce the risk of fire or electric shock, do not expose this device to rain or moisture. Do not use this device near water. Clean only with a dry cloth.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the device. This unit must be connected to an earthed mains socket outlet with the supplied cable. The AC wall outlet should be installed near to the unit and be easily accessible.

When using extenders or cable lines which run a long distance, the protective earth circuit of the socket should be verified by a skilled person to ensure equipotential earth bonding. Do not use unit in buildings or mobile installations where power lines have grounding and/or different phase issues.

Unplug units during lightning storms or when unused for long periods of time.

Do not install unit near any heat sources such as radiators, heat registers, stoves, or devices (including amplifiers) that produce heat. Do not block any ventilation openings. This unit uses active cooling with fans. Do not install unit in dusty and/or dirty places. Use professional equipment racks with air condition and filters.

7. Warranty Information

Aberman warrants all units to be free from defects in workmanship and materials, under normal use and service, for a period of one (1) year from the date of purchasing from authorized reseller. The extended period for five (5) years could be provided for selected items.

If a product does not work as it warranted during standard period, Aberman will repair or replace the defective product or its part. Replacement products may be new or reconditioned.

Warranty ends if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or servicing other than by Aberman or its authorized centers, causes other than from ordinary use or failure to properly use the Product in the application for which said Product is intended.

8. Specifications

SKU	aDA-2400U1
Type	Power Amplifier
Rated Power	2x 400W (8Ohm), 2x 650W (4Ohm), 1x 1200W (8Ohm)
Class	D
Frequency Response	15Hz – 30KHz (+/-1dB)
Damping Factor	>350 (@1KHz, 8 Ohm)
Slew Rate	28V/us
Signal/Noise Ratio	100dB
THD	<0.1% (@1KHz, -3dBu, 100W)
Interfaces	
Inputs	2x XLR 3-pin, female, analog audio, mono, balanced or unbalanced
Input sensitivity	0.775V
Input impedance	10 kOhm (unbalanced), 20 kOhm (balanced),
Outputs	2x XLR 3-pin, male, analog audio, mono, balanced or unbalanced
	2x Speakon socket, amplified audio
Modes	Stereo, Parallel, Bridge
Control	
Local	Front Panel Power Switch, Level Kobs, LED Statuses
Indication	Power, Protect, Clipping, Signal LED Status
Safety	
Cooling	Active, 3x ∅40 fan
Protection	Short circuit, overload, high temperature, signal clipping, DC
Electrically	
Power Consumption	1500W (Max)
Power Supply	Internal, switching, AC 230V, 50/60Hz
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions (WxDxH)	483 x 252 x 44 mm (with rack ears), 1RU
Weight	5.1 kg
Environments	
Operating Temperature	0°C ~ 40°C
Storage Temperature	-20°C ~ 70°C
Relative Humidity	10%~90% RH (non-condensing)