



User Manual GC Audio 500 RACK

Thank you for purchasing the GC Audio 500 RACK.
We hope you have as much fun using it as we had designing it !

The GC Audio Rack 500 is a high-end 10 slot chassis with external power supply, compatible with all standard 500 series modules. The external linear power supply has a total capacity of 12 Amps (6A for the +16V circuit and 6A for the -16V circuit) which makes it the most powerful 500 rack on the market. It easily powers the most demanding modules by regulating them and filtering noise and parasites generated by the 50/60Hz AC current. The chassis is made of 1.5mm thick steel, 50% thicker than other 500 racks on the market, offering excellent shielding against electromagnetic radiation for optimal isolation of the 500 modules it receives.

Rack 500 is also available without external power supply.

Description :

External power supply for 2 Racks 500

GC Audio Rack 500 is delivered with an external linear power supply equipped with a 225VA toroidal transformer followed by a 10A diode bridge, with ultra low noise, deported in an external steel case for a minimal electromagnetic radiation. The power of this rectifier stage is necessary to support the high inrush current of the high capacity capacitors that are required for a perfect smoothing of the AC voltage. Then, power transistors are added to put the voltage regulators following the capacitors on steroids. This arrangement guarantees a very low residual ripple, a high current capacity and an important resilience to inrush currents.

In addition to a very clean DC voltage and a high power availability, the "inductive" reserve of the circuit (typical characteristic of linear power supplies with a large toroidal transformer), allows a very fast current response which allows a high fidelity in the restitution of repeated fast transient signals, like with a drum.

Whether for the external PSU or for the Rack 500, the routing of the power supply rails has been established with the greatest care (no autorouting!) with reasoned track sections and the necessary spacing to avoid capacitive effects. An input too close to an output can quickly turn into a link of a few Pico Farads and lead to oscillatory phenomena at high gain. Manual routing allows to avoid this kind of phenomenon. But also an optimized Top/Bottom ground plane has been realized with screw feedthroughs to break all ground loops.

The external PSU has 2 outputs to power a 2nd GC Audio Rack 500, which avoids the purchase of a 2nd power supply. When using a second Rack 500, the total current available becomes 6 Amps for each rack which is more than comfortable and remains the most powerful Rack on the market.

The Rack 500 contains two ground / lift switches which allows you to choose whether the ground (of the input and/or output) should be connected to the chassis or to the Analog Ground. This function allows to break a possible ground loop that can be created in any audio installation.

The linear power supply is equipped with internal safety devices to ensure safe operation. There is of course a fuse on the mains side but also a fuse on the +16V circuit and another one on the -16V circuit. These protections can be very useful when switching on a DIY module for the first time! A 110V / 230V switch makes it compatible for all countries.

Independent power on

The Rack 500 and the external power supply are each equipped with an independent power switch. It is therefore possible to switch off the Rack 500 without switching off the external power supply. This allows the temperature stability of the power supply to be maintained without unnecessary power consumption.

The front panel of the Rack 500 has a premium quality backlit power switch with a metal body and IP67 rating. This means it is sealed against dust and moisture, ensuring a long service life. Metal body LED indicators for +16V, -16V and +48V power supplies are also present.

Uncompromising construction

GC Audio's Rack 500 design starts with a more robust construction than the norm. Its chassis is made of 1.5mm steel, solid as a tank! The thickness of the sheet metal is 50% thicker than the average and offers an excellent shielding against electromagnetic radiation for an optimal isolation of the 500 modules it receives. It is coated with satin paint for the front and back and a double layer industrial paint for the chassis. In addition to the studio application, its

robustness allows for intensive use on the road, such as on tour.

High-end connectors and Link modules

The rear panel features a full set of Neutrik connectors: Combo for the inputs and XLR or 1/4" 3pts jack for the outputs. So, whether you have XLR or TRS jack, you will be able to connect to the rack in any case.

Instead of having to connect the modules together with a cable, the Rack 500 has 5 internal switches to instantly connect the signal of a mono module to the adjacent mono module. This function allows to quickly create a stereo pair for 2 mono modules (on pin 5 of the module, following the 500 standard).

The GC Audio Rack 500 offers very high performance with optimum stability, low noise & optimized isolation.

Features

- 10 Slots 500 Series Rack for standard 500 modules
- External linear PSU with 12 Amp toroidal transformer to power up to 2 Rack 500 (second rack sold separately)
- 2 versions available: with or without external PSU to complete an existing setup at lower cost
- Rugged 1.5mm steel chassis for optimum module isolation
- Stereo Link Switch: For 2 mono modules
- Finish: Satin and industrial paint
- Power button: Metal body, IP67 standard (dustproof and waterproof)
- Connectors: Neutrik Combo (input) - Neutrik XLR or Jack 1/4" (output)
- Power cord: 3m (10ft) - Connectors: Neutrik 5-pin
- LED indicators: +16V, -16V, +48V Metal body
- Universal power supply: switchable 110V/230 with spare fuse holder
- Ground lift: Switchable
- Chassis dimensions: Width 19" - Depth: 28.5 cm (11.2") - Height: 3U
- Weight Rack + external power supply : 10 kg
- 100% Designed and made in France

Position

This product is designed and screened to minimize internal electromagnetic emissions and provide immunity to external electromagnetic fields. To reduce the risk of performance degradation due to external interference, do not site this unit close to sources of strong magnetic fields such as power supplies, power amplifiers, loudspeakers etc.

Rack Mounting :

This product is designed to be rack mounted using the screws and washers supplied to help preserve the finish of the facia panel. The facia graphic layer is under-surface printed to provide a robust hard-wearing surface designed to last the life of the product in virtually any operating environment. Failure to use the supplied fixings may result in damage to the facia surface which can invalidate the warranty. It is recommended that additional rack-mount side supports are used in conjunction with the facia panel fixings, particularly when the unit is mounted in a flite case or vehicle where vibration and transit shocks can be expected.

Cleaning :

The product should be cleaned with a soft brush around the controls. If the facia becomes dirty, use a damp cloth with a little household soap to remove the dirt. DO NOT use solvent cleaners under any circumstances or the facia may be permanently damaged, and warranty invalidated!

Audio Connections :

Two 3 pin XLR connectors are provided in back side. Inputs are female, outputs are male. All connectors follow the European wiring convention: Pin 1 = Screen Pin 2 = Hot (+) Pin 3 = Cold (-). Jack input for instrument in front side.

Supply:

The GC Audio API 500 Rack can be supplies by 230V or 115V.
Please refer to safety instructions.