SYSTEM 10K
MODULAR AMPLIFIER RACK SYSTEM

OPERATING AND MAINTENANCE MANUAL

SYSTEM 10K Modular Amplifier Rack System

SYSTEM DESCRIPTION

The System 10K Modular Amplifier System is a flexible and efficient high performance audio distribution system. The System 10K combines up to ten amplifier modules with two (redundant) power supplies in a 5-1/4" high (3RU) by 19" wide Eurocard specification enclosure that is 14-1/2" deep. All modules plug in from the front, are hot-swappable, are secured with captive hardware and present an attractive and safe closed front panel. Aluminum extrusion construction makes a strong and rugged enclosure and allows free convection for vertical airflow. The basic frame provides power bussing for all positions. Individual modules are supplied with mating connector assemblies which mount on the rear of the card frame and plug into the power distribution bus. Connector assemblies provide barrier block connections with fan-out strips for studio wiring. Alternate insulation displacement, mass termination connector systems allow simple push-on audio connections.

A wide variety of available interchangeable plug-in modules allow an optimum system to be initially assembled at reasonable cost and expanded and upgraded as future requirements necessitate. A partial listing of available SYS10K modules follows. Consult factory for latest information.

DA100

A basic one-input, six-output Distribution Amplifier--A single power stage is split into six active balanced outputs at +22dBm each. Split and bypassed build-out resistors give protection against short circuits and RF. Balanced bridging input. Single front-panel level control sets all outputs. Headphone monitor jack.

MDA100

Metered 1X6 Distribution Amplifier--Adds an LED Bargraph VU Meter to the basic amplifier described above. Measures -21 to +6 VU with 0 VU adjustable for outputs from 0 to +18dBm. Signal Alarm indicator and output warns of dead channel.

CDA100

Compressing 1X6 Distribution Amplifier--Adds a Gated Compressor to the MDA100. The compressor operates on inputs above -30dBm. Compression Slope adjustable up to 20:1. Input level sensor gates compressor gain recovery

to prevent background noise build-up during program pauses. Meter is switchable to Output or Gain Reduction levels. Switchable linear amplifier mode.

IDA100

Independent 1X6 Distribution Amplifier--Individual trimmers are provided for each output along with a Master Level control. Headphone output plus six transformer coupled (IDA100-1) or active balanced (IDAI00-2) outputs.

MIDA100

Metered Independent Output Distribution Amplifier--Six Transformer (-I) or Active Balanced (-2) outputs with independent level trim controls. An LED Bargraph meter is switchable to monitor all outputs and the input. Includes Master Level Control and headphone output.

MIDA100-1RC

Remote-controllable Distribution Amplifier--Four transformer outputs, each with an independent level trim control. Switchable Remote or Local DC-operated VCA Master Level Control. An LED bargraph meter is switchable to monitor all four outputs or the input signal. Includes Headphone output.

PS100

Power Module--A bi-polar unregulated 18 VDC supply drives the system power buss through fused isolation diodes. Operates singly or as a redundant pair in the right hand positions of each RM100 rack frame. Front panel LEDs indicate low voltage on either buss or blown fuses. Power Failure Alarm relay contacts close for any power loss and can activate an external alarm. Alarm outputs from both PS100 positions are paralleled and brought to a barrier block (terminals 4 & 5) mounted on the left-hand rear of the card cage. Dual power transformers in each module run cooler and generate minimal hum field. DC lines are fully bypassed. AC line filtering, non-concentric wound power transformers and varistor clippers suppress power line transients and RF feed-through**.**

INSTALLATION

MOUNTING

A fully loaded RM100 frame is heavy! To protect yourself and the equipment, mount the empty RM100 enclosure securely before plugging in the power and amplifier modules. The RM100 is designed for free vertical air convection cooling. We recommend at least one rack unit (1-3/4 inches) spacing between stacked units or forced air cooling of more densely stacked frames. If using forced air, seal frames and joints between frames with duct tape and use blank panels to seal any empty slots to avoid losing air pressure.

WIRING

The RM100 is supplied with mating connectors for the PS100 power supplies mounted on the right side of the enclosure and with all power busing in place, ready to plug on to the mating amplifier connector assemblies. Install amplifier modules starting at the most left hand position (opposite from power supplies) and stack side-by-side for optimum shielding of each module.

The connector assemblies supplied with each amplifier module mount on the rear of the rack frame using supplied metric hardware: (4) M 2.5 x 6 mm screws. System audio inputs and outputs connect to a 15-position barrier block using a supplied mating fanning strip for easy pre-wiring. The 15-position fanning strip may be cut into smaller sections if desired; e.g., inputs only, outputs only. The fanning strip is Kulka P/N 649A15 and replacements are available from ATI stock. Wire the audio inputs and outputs using the connector assembly markings as a guide. NOTE: Barrier block screws are tightly machine inserted by the manufacturer. Protect your knuckles by loosening them a few turns before mounting them in a rack where they are hard to reach. Doing so will make it much easier to install your pre-wired fanning strips at 3 AM. Fanning strips fit onto barrier blocks from the left.

On special order, connector assemblies with .025 posts instead of the barrier block are available. These posts mate with AMP MTA100 Series plug-on connectors. The MTA connectors are solderless insulation displacement types. Special tools for wire insertion into the MTA connectors include a simple and inexpensive maintenance type tool, AMP 59803-1, and a precision ratchet type self-indexing hand tool, AMP59801-1. Consult factory for more information.

The System 10K uses only three-wire grounded power plugs. The third wire ground can cause a ground loop with your facility ground. If you are sure your facility ground will provide adequate protection to personnel in case of an AC line short to chassis, a 3-to-2 AC adaptor can be used to isolate the power line ground. We recommend that the adaptor be removed and the power line ground reconnected prior to any service work requiring removal of the facility ground from the chassis.

To allow maximum flexibility in grounding in high RF environments, the circuit grounds are isolated from case ground. An individual circuit ground is available next to the HI input terminal of each module. These grounds are already interconnected through the common DC power supplies. It is not recommended that the individual circuit grounds be tied together since a ground loop would result. A common DC ground is available on the **ALARM** terminal block pin 3. This ground may be interconnected, tied to chassis or connected to a studio ground system.

ALARMS

Alarm lines from the two power supplies are paralleled and brought to a barrier block mounted on the left hand rear sidewall. The power alarm is connected to pins 1 and 2. The power alarm outputs are reed relay contacts which close if either or both DC output voltages drop below 11 volts due to excessive loading, blown fuses or loss of AC power. The reed relay contacts should not be used to switch high current lamp loads or AC line voltages. Several racks of distribution amplifiers may be paralleled into a single alarm interface.

MODIFICATIONS

230 VAC OPERATION   The PS100 Power Supply incorporates dual transformer primaries that can be strapped for 115 or 230 VAC operations. To use on 230 VAC power, remove jumpers J1 and J3 from the solder side of the PSI00 PC Board and insert a jumper in the J2 position.

DUAL AC POWER   Each PS100 of a redundant powered system may be operated from a separately fused AC system for even greater reliability. An additional AC line cord is required and replaces the AC jumpers between the power blocks of the two PS100 modules.
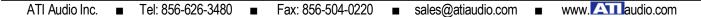
ACCESSORIES

A full complement of operational accessories is available for use with your System 10K. A partial list follows. Consult the factory or a current price list for a current listing.

BP100-1   Blank Front Panel, 1.2 inches wide, required to replace missing amplifier module(s)

BP100-2   Blank Front Panel, 2.0 inches wide, required to replace missing power supply module

EXI00-1   Mono Extender Assembly for amplifier modules. A four-foot long extension cable allows easy module service.

EXI00-2   Stereo Extender Assembly for amplifier modules. A four-foot long extension cable allows easy module service.

EXI00-3   Universal Line/Microphone Extender Assembly for amplifier modules. A four-foot long extension cable allows easy module service.

PH103-1   48VDC Phantom Power Supply for up to 10 MMA100 and/or MMA200 modules

SYS10K KO Knob Option for System 10K LA and MLA modules

The following four items are normally supplied with the RM100 Rack Frame or with the plug-in amplifier modules. Order extras as spares or to build bench test and service fixtures.

20179-501   Spare Amp Module Connector Assembly for DA/MDA/IDA/MIDA/ CDA 100 with Barrier Block & Fanning Strip

20181-501   Spare PS100 Mating Connector Assembly

20184-501   DC interconnect cable assembly

20185-501   Spare AC Line Cord

20447-501   Spare Amp Module Connector Assembly for DA/MDA/IDA/MIDA/ CDA 100 with barrel connectors

20447-502   Spare Mic/Line Amp Module Connector for LA/MA/MLA/MMA 100 and 200

20448-501   Spare Stereo Amp Module Connector for SDA/SMDA 200

One Year Limited Warranty

ATI warrants this product to be free from defects in materials and workmanship to its original owner for a period of one year from date of purchase. ATI will repair or replace such product or part thereof, which upon inspection by ATI, is found to be defective in materials or workmanship.

The Proper Return Authorization Number must be obtained from ATI in advance of return. Contact ATI at 856-626-3480 or email sales@atiaudio.com to receive the number and instructions for return of your unit.

A written statement providing the name, address, daytime telephone number and email address of the original owner, together with receipt from the original purchase, and a brief description of any claimed defects, must accompany all returns. Parts or product for which replacement is made shall become the property of ATI.

The customer shall be responsible for costs of transportation and insurance to the factory of ATI, and shall be required to prepay such costs.

ATI shall use reasonable efforts to repair or replace any product covered by this limited warranty within thirty days of receipt. In the event repair or replacement shall require more than thirty days, ATI shall notify the customer accordingly. ATI reserves the right to replace any product that has been discontinued from its product line with a new product of comparable value and function.

This warranty shall be void in the event a covered product has been damaged, or failure is caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation or maintenance, alteration, or lightning, power fluctuations and other incidental or environmental conditions. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

ATI DISCLAIMS ANY WARRANTIES, EXPRESS OR IMPLIED, WHETHER OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR USE, EXCEPT AS EXPRESSLY SET FORTH HEREIN. THE SOLE OBLIGATION OF ATI UNDER THIS LIMITED WARRANTY SHALL BE TO REPAIR OR REPLACE THE COVERED PRODUCT, IN ACCORDANCE WITH THE TERMS SET FORTH HEREIN. ATI EXPRESSLY DISCLAIMS ANY LOST PROFITS, GENERAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM BREACH OF ANY WARRANTY, OR ARISING OUT OF THE USE OR INABILITY TO USE ANY ATI PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

ATI reserves the right to modify or discontinue, without prior notice to you, any model or style product.

If warranty problems arise, or if you need assistance in using your product contact us.