



IDA100 & MIDA100

AUDIO DISTRIBUTION AMPLIFIERS

OPERATING AND MAINTENANCE MANUAL



© Copyright 2011, ATI Audio Inc.

DESCRIPTION

The IDA100 and MIDA100 modules are both one-input, six-output audio distribution amplifiers designed as plug in components for the System 10K Modular Distribution Amplifier System. The System 10K provides proper mounting, shielding and power for a family of interchangeable amplifier modules. Performance to published specifications and operational life of these modules are covered by ATI's standard one year limited warranty ONLY when they are used as part of a System 10K consisting of an RM100 Rack Enclosure and PS100 Power Supplies.

The IDA100 and MIDA100 modules feature six transformer-balanced (IDA100-1 and MIDA100-1) or active-balanced (IDA100-2 and MIDA100-2) outputs. Each of the six outputs is independently adjustable using multi-turn trimmers to allow the setting of different nominal output levels on each line. In addition, a single turn, audio taper Master Level control adjusts all outputs together to compensate for input level variations. MIDA100 modules incorporate an LED bargraph meter, which is switchable to each output and to the input.

A headphone output is taken from output six. A TRS (tip-ring-shield) jack is wired to properly drive a single channel signal into stereo headphones.

A mating connector assembly is supplied with the amplifier module (or may be pre-assembled into the RM100 enclosure if ordered together). Check the INSTALLATION section of your System 10K manual for complete mounting instructions.

CIRCUIT OPERATION

The audio input line is bridged by a 10,000 ohm active balanced differential, unity gain input stage (A1A). The bridging resistor network is split and heavily bypassed for RF protection. Trimmer R10 adjusts common mode hum rejection and is factory set to 80dB. To field adjust, apply a 60 Hz input to HI and LO inputs together referenced to ground and adjust R10 to null output. The input stage will bridge a +22dBm input line (10Vrms) without clipping.

The MASTER LEVEL control R11 is normally set to -15dB in unity gain operation (one o'clock position of twelve o'clock is half rotation). This setting preserves maximum headroom in the following stage, A1B (+12dB gain). The INPUT position of the meter switch measures the output of A1B, which is fed to the output level pots, R16 to R21. These pots are typically set for 9dB loss in a unity gain application. The output gain stages A2, A3 and A4 provide 13dB gain including the transformer step-up ratio. Active balanced output modules also include output inverters A7, A8 and A9 to drive the LO output lines. DO NOT CONNECT active balanced LO or HI outputs to the grounded side of single-ended, unbalanced loads since doing so effectively shorts the output and causes excessive loading. Use a transformer-balanced module for this application or connect the unbalanced load between the HI output and GND terminals.

Unregulated input power at +/-18VDC nominal is filtered and limited to 16VDC maximum by zener diodes D2 and D3. Power indicator LED D5 detects the loss of either supply voltage. On-board fuses, F1 and F2, (3/8 A) protect the main power bus from module faults. Zener D1 provides 11VDC to the bargraph meter display.

A1C and A1D form an active full wave meter rectifier circuit in the MIDAI00 modules. Network R50, R51 and C16 approximate PPM meter ballistics and A5 drives the ten-segment LED bargraph display, A6, in 3dB steps.

All parts with the exception of panels, shields, PC boards and output transformers are standard distributor items and are also available from ATI stock. A1 is a National Semiconductor LF347N Bi-FET quad IC interchangeable with TI TL074 and others. A2, A3, A4, A7, A81, and A9 are high output, low noise NE5533 dual ICs available from Signetics and Exar. A5 is a National LM3915 meter driver and A6 is a General Instrument MV57164 display.

An electrostatic shield is mounted to the PC board just behind the panel to shield low-level circuitry. To achieve optimum shielding, modules should be mounted side-by-side starting on the left side of the RM100 rack frame with no spaces left in between modules. Panel retaining screws should be tight to effectively ground the panel to the frame. A formed Mu-metal shield covers the output transformers and completely eliminates hum and crosstalk pickup.

SPECIFICATIONS

Specifications reflect performance in a typical System 10K system consisting of ten mixed distribution amplifier modules and two PS100 power supplies mounted together in an RM100 rack frame.

NOMINAL OUTPUT LEVEL	+4dBm, 600 ohms at 0VU meter indication	GAIN	24db
OUTPUT CLIPPING LEVEL	+22dBm, 600 ohms all 60 outputs driven	HEADPHONE OUTPUT	10Vrms to hi-z phones
DISTORTION	.25% THD, 30-20kHz at +20dBm output	INPUT IMPEDANCE	10Kohm
FREQUENCY RESPONSE	-.25dB, +0dB. 30 to 20,000 Hz	POWER	±18VDC nom, ±22VDC max.
OUTPUT HUM AND NOISE	-74dBm any position, 24db gain, 20kHz measurement bandwidth	CROSSTALK	-65dBm max. 10kHz, adjacent

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.