

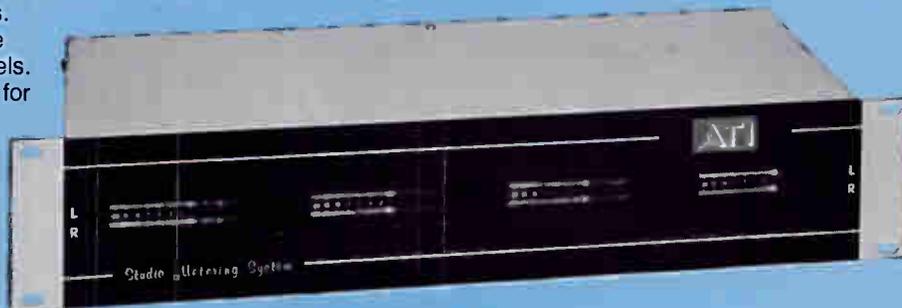
# Metering

VU800, VU600, VU400, VU200 *Micro Meters™*

## Electronic Security Blanket

Give yourself that warm, secure feeling by economically displaying all your important lines simultaneously. Know at a glance where your signals are (or are not). Expandable ATI MicroMeters display one, two, three or four stereo lines (eight channels) on bright, two color vacuum fluorescent bar-graph indicators.

Balanced, bridging inputs are switchable for 0VU at -10, +4 and +8dBm line levels. Displays -20 to +8VU with peaks stored for several seconds. Backlit, compact 3½" rack mount.



# Matching

Level Matching Interface Systems / IHF to 600 Ohms

## Problem:

Consumer and semi-pro audio equipment can offer good performance and plenty of bells and whistles for the price. Unfortunately RF pickup, crosstalk, high frequency rolloff, hum loops and distortion often result from long cable runs or the direct connection of their low level, high impedance IHF phono jack inputs and outputs into 600 ohm studio and broadcast systems. Much of today's video equipment shares similar problems.

## Solution:

The Match-Maker and Disc-Patcher Interface Systems match all levels and impedances between unbalanced phono jacks and balanced 600/150 ohm systems. Especially important with consumer line operated equipment; they allow complete output ground isolation to avoid creating RF and hum sensitive ground loops back through the power system. Only a true transformer coupled output provides the required isolation to do the job and only ATIs unique drive circuitry does the job with none of a transformers usual limitations.

## The Match-Maker™

### MM100 Bi-Directional Stereo Interface

Use the MM100 for record-playback applications interfacing audio or video cassette recorders and also for input-output matching of Equalizers, NR units, Reverbs and Mixers. Jumper the IHF jacks to make a dual line amp, two output DA or a two input summing amp and stereo combiner. Rugged shielded enclosure, shelf mount brackets, accessory 1¾" rack panel mounts two, XLRs.



## The Disc-Patcher™

### DP100 Uni-Directional Stereo Interface

The DP100 is designed to invisibly interface digital compact disc playback units with absolutely no reduction of the superb performance available from the digital system. Equally at home on a newsroom desk, use the Disc-Patcher to patch ENG cassette recorders into your system for dubbing. RF proof, shielded internal power supply, shelf or dual rack mount, XLR out.



Free detailed brochures with full specifications on each of the Problem Solvers are available direct from ATI or through your local ATI dealer. In a hurry? We will FAX them. Call ATI at (215)443-0330 with any questions.

Represented by:



**AUDIO TECHNOLOGIES INC.**  
328 W. Maple Avenue, Horsham, PA 19044  
(215)443-0330 · FAX (215)443-0394

# Distribution

## Audio Distribution Amplifiers

For every application and every budget. Avoid RF and hum pick-up problems from noisy, lossy splitters. Prevent hard-to-find shorts from multiple taps on critical lines. Boost low console outputs. Drive long lines. Eliminate rolloffs and distortion from mismatched load impedances. All ATI DAs are rack mounting and use reliable barrier block connectors with fanout strips for easy prewiring and quick change servicing.

## Micro Amp Series

**DA1000 — 1 X 8**

**DA2008 — Dual 1 X 4**

### Premium Performance — High Output

A single, high output, active balanced driver per channel is resistively split into 4 or 8 outputs each, all driven at precisely the same level. Up to +24dBm balanced in and out. Features output clipping LEDs and a headphone/metering jack in a half rack package that you can mount singly or side-by-side in only 1 3/4".



**DA1008 — 1 X 8**

**DA2016 — Dual 1 X 8**

### An Industry Standard

Easily match differing line level requirements with these high output DAs with 8 or 16 individually adjustable outputs. Active and transformer balanced outputs at +22 or +30dBm. A LED meter with three selectable 0VU settings allow you to set nominal line levels and monitor peak headroom. Includes input clipping LEDs and a boosted headphone output. Our top-of-the-line unit for your most demanding applications. Rack mounts in only 1 3/4".

## Micro Amp Series

**DA10,000**

**Ten 1 X 6 Plug-In Amplifiers**

### Mix and Match

### Modular Distribution System

Mix our interchangeable DA modules to precisely match your system requirements. From low cost power splitting types you can expand to metered outputs, remote level controls and wide range compressors for critical lines. Individual transformer output models with full metering allow trimming of each output to meet your particular level matching needs. Phone jacks on each module allow a quick signal check. Dual, alarmed, redundant power supply modules with fusing and regulation on each amplifier minimize localized heat buildup and yield the highest system reliability.



## Encore Series™

**DA208 — Dual 1 X 4**

**DA416 — Quad 1 X 4**

### Minimum Cost, Maximum Versatility

A small price to pay for real protection. Two or four inputs, each driving four individually adjustable, active balanced outputs gives you twice the channels for the price — twice the performance in most applications. Need more outputs? Just parallel inputs for up to 1 X 16 operation. Drive everything from balanced 600 ohm lines to Hi-Z IHF phono jack inputs without matching pads or noise compromises. Transparent performance, RF protected. Our best seller — your best buy.



# Mike

## M100 *Ultimike™* Microphone Amplifier

### *Clean up your act!*

Eliminate dimmer noise, RF pickup and hum loops by mounting this small, rugged, full featured preamp right near the audio source. The unusually quiet, direct balanced, instrumentation amplifier input has impressive hum and RF rejection and accepts +20dBm maximum input. Features switchable and adjustable gain, limiter, lo-cut filter, 48 volt phantom power and a phase reversing switch. A unique output driver provides the many advantages of true transformer isolation with no performance compromises. XLR in and out, dual rack mountable.



## *Micro Amp Series™*

### M1000 Dual Microphone Amplifier

### *Just the ticket!*

To expand or upgrade a noisy console by replacing input and program amps. Eliminate pickup on long low level mike lines. Extremely low noise, 74 db gain and plenty of headroom. XLR in, barrier strip out, optional 48VDC phantom power.



### ML1000 Mike and Line Amplifier / Mixer

### *Synergistic!*

One high gain mike channel, one medium gain line amplifier. Use it as a two channel utility amplifier or flip a switch for a great Mini-Mixer for desk top newsroom production.

# Phono

## *Micro Amp Series™*

### P1000 Stereo Turntable Amplifier

### *Golden ears? Surprise them!*

You will be amazed at how well a really effective subsonic filter can clean up the rest of your audio chain. Flat to 30 Hz, down 30 dB by 7 Hz, it blocks those high amplitude record warp and seismic signals that can saturate downstream transformers and cause intermod distortion in high level circuitry. Push button high boost and cut filters allow you to brighten a muddy recording or reduce stridency. DIP switch cartridge loading, precision 1/4dB equalization, low noise and more headroom than the physics of disk cutting will ever require make this a truly exceptional performer. Desk, cabinet and rack mounting.



## *Encore Series™*

### P100 Stereo Turntable Amplifier

### *Your best choice for a tough RF environment.*

No pretty paint or shiny pushbuttons but an economical, RF proof package wrapped around high performance circuitry makes this preamp our best seller. A subsonic warp filter, DIP switch R and C cartridge loading, precision 1/2dB equalizer, low noise front end and a line isolated active balanced output makes this preamp your best buy.



## Line

### Micro Amp Series

**L1000**

**Precision Dual Line Amplifier**

#### **A Versatile Tool**

Use it to upgrade a low output console, drive phone lines, boost inputs, cancel hum, interface Hi-Z outputs to balanced lines, compensate for line loss, sum L + R, check phase, drive meters and headphones. Balanced, bridging inputs, transformer or active balanced outputs, +22dBm in and out, 34dB gain. Half rack, mount one or two across. Barrier block terminals.



## Monitoring

### Micro Amp Series

**VU1000 Micro Meter**

**Eight Line Switcher,  
Meter and Monitor Amplifier**

Capable of many functions, use the VU1000 as an input line selector to an audio or video recorder, a remote line selector into your console and for general metering and monitoring of critical signals. Eight balanced bridging inputs are panel and remotely selectable to feed a LED bargraph meter with both VU and PPM ballistics plus a balanced line output and a headphone jack. A range switch sets the reference line output and 0VU indications for five levels from -10 to +18dBm. An optional built-in 6 Watt power amplifier drives external speakers. Interconnect two for slaved stereo switching.



## Processing

### Micro Amp Series

**EM1000 Empha Sizer**

**An Addictive Mike Processor**

Make the Chairman of the Board sound like Lee Iacocca, call down fire and brimstone without feedback and make radio jocks sound as big as their egos with this powerful processor. A voice operated gate allows safe hands-free mike control and a gated compressor-limiter rides gain without annoying background noise buildup. Four sections of switchable full range parametric equalizers can be combined to notch out room resonances or turn your mild mannered telephone reporter into superman. Mike and line level in and out. Desk or half rack mount.



### Micro Amp Series

**MA1000**

**Stereo Power Amplifier**

**Our "Crowning" Glory**

10 Watts per channel Stereo or 25 Watts in mono bridged mode, an economical headphone amplifier or monitor amp for small studios. Also makes a great balanced output distribution amplifier capable of driving over eighty 600 ohm loads at +24dBm. Front panel mono/stereo switch, level controls and a headphone jack, professional balanced bridging inputs and complete electronic output protection in a tiny but rugged half rack package. Mount four 10 Watt channels in 1 3/4".



# Your Problem Solvers are:

## ■ Versatile

From Consoles to Preamplifiers, a growing collection of audio function blocks designed to quickly and easily solve your day-to-day studio, interface and installation problems.

## ■ Easy to Use

With balanced bridging inputs, active or transformer balanced outputs, wide dynamic range circuitry, excellent RF pickup protection, simple and quick installation, easy termination.

## ■ Transparent

Ruler flat response with quiet, high slew rate circuitry for lowest noise and distortion, fully shielded power supplies, inaudible crosstalk and output isolation.

## ■ Rugged

Built tough for carry-around use, textured polyurethane finishes and polycarbonate panel overlays stay looking good for years, rack and cabinet mounting adapters.

## ■ Serviceable

Socketed ICs and connectorized modular construction make short work of down time.



BC12DSL

BC8DSR

Vanguard Series™ —

# Broadcast Consoles

**Performance, Value and Reliability  
through Innovative Technology.**

- The end result of a rigorous re-evaluation of traditional on-air console design, Vanguard Series Consoles offer superior performance and long term reliability with low initial cost and minimum maintenance.
- A lighted, quiet, snap-action panel switch array, sealed from all contaminants, digitally selects all mixer inputs, outputs and monitoring functions.
- DC operated VCAs used on all level controls totally eliminate fader noise and tracking errors and reduce the need for costly premium audio faders.
- Effective RF protection, punchblock type connections and jumper plug gain matching of input and output levels makes for quick, easy and foolproof installation.
- Modular, plug-in circuit cards allow fast board substitution troubleshooting by non-technical personnel.

## Dual Stereo Plus Dual Mono Program Outputs

BC8DSL — 8 Linear Faders, 12 Stereo Inputs

BC8DSR — 8 Rotary Faders, 12 Stereo Inputs

BC12DSL — 12 Linear Faders, 24 Stereo Inputs

- Headphone Amplifier
- Cue Amplifier and Speaker
- Balanced, Bridging Inputs
- Modular, Plug-in Boards
- Compact — 24" or 32" Wide
- Muted Monitor Drivers
- Two Microphone Preamps
- Active Balanced Outputs
- External Power Module
- Effective RF Protection

## Optional Features

- P & G Faders
- Tally Light Relays
- Start-Stop Switching
- Dual, Five Input Expanders
- Additional Mike Preamplifiers
- Dual, Stereo Fluorescent Bar-Graph Meters

# Problem Solvers

from **ATI**

- Phono
- Mixing
- Matching
- Metering
- Monitoring
- Processing
- Distribution



**AUDIO TECHNOLOGIES INC.**  
*Dedicated to sound engineering*

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# Clean up your act!

Eliminate noise, pickup, RF, hum and rolloffs from long low level microphone cables with the ULTIMIKE Microphone Amplifier. Ruggedly designed for up close operation, impressive input headroom specs and smooth output limiting allow trouble-free unattended operation from remote or inaccessible locations. A unique distortion-free transformer coupled output provides total isolation of ground loops and ground voltage differentials with a low line driving impedance for extended high frequency response when driving long lines.

The direct, instrumentation amplifier input stage yields superior noise performance and prevents the ringing, response and distortion problems of high ratio input transformers. High gain for low output microphones is combined with excellent input and output headroom for complete freedom from overload. The maximum input level of 0dBu is increased to +20dBu in the low gain switch position. A screwdriver adjust audio taper full range gain control can be augmented with a convenient plug-in remote DC operated gain trimmer located up to 50 feet away. Other outstanding features include a clean output limiter, full 48VDC phantom power, a two pole 150Hz low cut filter and switchable output phasing.

## FEATURES

- RUGGED CONNECTORS
- HIGH GAIN and HEADROOM
- TRANSFORMER OUTPUT
- PHANTOM POWER
- LOW CUT FILTER
- PROTECTED SWITCHES
- SHIELDED POWER SUPPLY
- SWITCHABLE OUTPUT LIMITER
- REMOTE GAIN CONTROL
- PHASE REVERSE SWITCH

## SPECIFICATIONS

- **GAIN:** 54dB nominal, adjustable 0 to 74dB
- **MAXIMUM INPUT:** 0dBu—HI Gain Switch, +20dBu—LO Gain Switch
- **MAXIMUM OUTPUT:** +22dBm, transformer balanced, 600 ohms.
- **NOISE OUTPUT:** -70dBm, 20 to 20,000Hz measurement bandwidth
- **HUM OUTPUT:** -80dBm, 60, 120 and 180 Hz.
- **DYNAMIC RANGE:** 92dB, Maximum output to noise
- **HARMONIC DISTORTION:** 20 to 20,000Hz, .10% THD maximum at max level, .03% THD maximum at nominal level
- **INTERMOD DISTORTION:** .005% maximum, SMPTE 7K/60Hz 4:1
- **FREQUENCY RESPONSE:** +0, -.25dB, 20-20kHz, -3dB at 1 Hz and 65kHz.
- **HIGH PASS FILTER:** -3dB at 150Hz nominal, -40dB at 15Hz.
- **INPUT HUM REJECTION:** 90dB minimum CMR, internal adjustment.
- **LIMITER THRESHOLD:** +14dBm out  $\pm$  1dB.
- **LIMITER SLOPE:** 4:1 maximum
- **LIMITER TIMING:** 100mSec attack and recovery
- **LIMITER RANGE:** 20dB Gain Reduction minimum
- **REMOTE GAIN TRIMMER:** 10kohm linear external pot, user supplied. DC Control, 0 to -15dB range
- **PHANTOM POWER:** +48VDC at 4ma. through paralleled 6.8kohm
- **AC POWER:** 115 - 230VAC  $\pm$  10%, 47 to 63Hz, 4VA.
- **DIMENSIONS:** 1.5"H by 8.5"W by 5.5"D (9.75"W with mounting brackets). 3 lbs net, 5 lbs shipping weight.
- **MOUNTING:** Keyhole slot #8 screws on 9/8" centers. Accessory rack panel P/N20273-501 mounts 1 or 2 units in 1 3/4" by 19" E.I.A. rack space.
- **CONNECTORS:** Mike Input, XLR type, three terminal female. Line Output, XLR type, three terminal male. Remote Gain Trimmer, RCA type Phono Jack.

Distortion, Noise, Dynamic Range and Response measurements all made at nominal gain settings.  
Reference Levels: 0dBm = .775V/600 ohms, 0dBu = .775V

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# Ultimike™



## M100 MICROPHONE AMPLIFIER



AUDIO  
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Dedicated to sound engineering

# Micro Amp Series™

(continued)

## Ultimike™ Microphone Amplifier

M100	Servo stabilized low noise instrumentation amplifier input, +22dBm transformer output. 48VDC phantom power, switchable gain and limiting.	\$299.00	B
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## Micro-Meters Studio Metering System

Balanced, bridging inputs drive bright 14 segment, two color vacuum fluorescent displays with peak level storage. 0 VU level is switchable for -10, +4 or +8dBm stereo inputs to each meter.

VU200	One Stereo Display	\$339.00	B
VU400	Two Stereo Displays	\$439.00	B
VU600	Three Stereo Displays	\$539.00	B
VU800	Four Stereo Displays	\$639.00	B

## DA10000 Modular Distribution Amplifier Systems

### System Components

RM100	Rack Frame Assembly, 5¼ inch by 19 inch EIA Mounting. Mounts up to ten amplifier modules with up to two PS100 Power Supplies.	\$299	A
PS100	Power Supply, 115/230VAC IN, + and -18VDC OUT. Diode isolated outputs for redundant operation. Power Failure Alarm Output and Indicators.	\$299	A

## Mass Feed, Power Splitting Distribution Amplifier Modules

GDA100	Compressor/Distribution Amplifier, 1 input to 6 active balanced outputs at +22 dBm. 47 db gain, 24 db compression range. Signal gated compressor recovery, Loss-of-Signal Alarm, LED Bargraph metering of output and gain reduction.	\$395	A
MDA100	Metered Distribution Amplifier, 1 input to 6 active balanced outputs at +22 dBm. Loss-of-Signal Alarm and Indicator, LED Bargraph metering of output level.	\$385	A
DA100	Distribution Amplifier Module, 1 input to 6 active balanced outputs at +22 dBm.	\$250	A

## Individual Output Distribution Amplifier Modules with Independent Level Adjustments

MIDA100-1RC	Metered Remote Control Distribution Amplifier. 1 input to 4 independent transformer balanced outputs at +22 dBm. Remote/Local VCA Master Gain Control. LED Bargraph meter.	\$495	A
MIDA100-1	Metered Distribution Amplifier. 1 input to 6 independent transformer balanced outputs at +22 dBm. LED Bargraph meter.	\$449	A
IDA100-1	Distribution Amplifier Module. 1 input to 6 independent transformer balanced outputs at +22 dBm.	\$375	A
BP100-1	Blank, 1.2 inch panel to replace missing Amplifier Module	\$25	A
BP100-2	Blank, 2.0 inch panel replaces Power Supply Module	\$30	A
EX100-1	Distribution Amplifier Extender Assembly	\$150	A
P/N20181-501	Spare PS100 Mating Connector Assembly	\$56	A
P/N20179-501	Spare Amplifier Module Connector Assembly	\$49	A
P/N20184-501	DC Interconnect Cable Assembly	\$6	A
P/N20185-501	AC Line Cord	\$8	A

**PRICE LIST EFFECTIVE MAY 1, 1988 FOB OUR PLANT**

# Micro Amp Series™

## Microamp Dual Microphone Amplifiers

M1000-1	Transformer Outputs	\$365.00	B
M1000-2	Balanced Differential Outputs	\$365.00	B
M1000-1P	Transformer Outputs with switchable 48Vdc Phantom Power	\$395.00	B
M1000-2P	Balanced Differential Outputs with switchable 48Vdc Phantom Power	\$395.00	B

## Microamp Dual Line Amplifiers

L1000-1	Transformer Outputs	\$345.00	B
L1000-2	Balanced Differential Outputs	\$345.00	B

## Microamp Microphone & Line Amplifiers/Mixer

ML1000-1	Transformer Outputs	\$385.00	B
ML1000-2	Differential Outputs	\$385.00	B

## Microamp Stereo Phono Amplifiers

P1000-1	Transformer Outputs	\$365.00	B
P1000-2	Balanced Differential Outputs	\$365.00	B

## Microamp Stereo Headphone Power Amplifier

MA1000-1	Stereo 10W/Mono Bridged 25W	\$365.00	B
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## Microamp Mass Feed Distribution Amplifiers

DA1000-1	1 input to 8 Balanced Differential Outputs	\$345.00	B
DA2008-1	DUAL Section, 1 by 4 each	\$365.00	B

## Microamp Line Switcher, Meter and Monitor Amplifier

Eight Balanced Inputs to One Balanced Line Output, 5 Range LED Meter and Monitor.

VU1000-1	Drives 600 ohm Phones or ext. Power Amp such as MA1000	\$625.00	C
VU1000-2	Includes 6W Power Amp for Lo-Z Phones or ext. Speaker	\$725.00	C
P/N 20209-501	Stereo Interconnect Cable	\$15.00	A
P/N 20214-501	Remote Control Scan Cable	\$12.00	A

## Rack Mount Kits for Above

P/N 20021-501	Single Unit, Centered Mount	\$17.00	A
P/N 20024-501	Double, Side by Side Mount	\$22.00	A

## Microamp Distribution Amplifiers

One Input to Eight Individual Outputs - Rack Mounting

DA1008-1	+ 22 dBm, Transformer Outputs	\$850.00	C
DA1008-2	+ 22 dBm, Balanced Differential Outputs	\$755.00	C
DA1008-3	+ 30 dBm, Transformer Outputs	\$1095.00	C
DA1008-4	+ 30 dBm, Balanced Differential Outputs	\$995.00	C
Dual 1 by 8, Two Inputs to Sixteen Individual Outputs - Rack Mounting			
DA2016-1	+ 22 dBm, Transformer Outputs	\$1195.00	C
DA2016-2	+ 22 dBm, Balanced Differential Outputs	\$995.00	C
DA2016-3	+ 30 dBm, Transformer Outputs	\$1695.00	C
DA2016-4	+ 30 dBm, Balanced Differential Outputs	\$1475.00	C

## Emph'a sizer™ Audio Processor

Includes an Input Signal Gate, 4 Switchable Parametric Equalizers, a Wide Range Compressor-Limiter and both Microphone and Line Level Inputs and Outputs.

EM1000-1	Transformer Output	\$1395.00	C
EM1000-2	Balanced Differential Outputs	\$1395.00	C
P/N 20104-501	Single [centered] Rack Mount	\$30.00	A
P/N 20105-501	Dual Side by Side Rack Mount	\$45.00	A

## Encore Series™ Turntable Amplifiers

P100S	+ 18 dBm, Active balanced, Stereo	\$269.00	B
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## Encore Series™ Distribution Amplifiers

Independent + 18 dBm active balanced outputs with individual controls. Output clipping indicators. Rack mounting.

DA208	Dual 1 by 4	\$329.00	B
DA416	Quad 1 by 4	\$469.00	B

## IHF↔Pro Level and Impedance Converters

Interface semi-pro, unbalanced, -10 db IHF equipment into 600 ohm balanced systems.

MM100 Match-Maker™	Bi-Directional, Stereo, Transformer Outputs For Cassette or Reel Recorders, Mixers, VCRs and Graphic Equalizers.	\$259.00	B
DP100 Disc-Patcher™	Uni-Directional, Stereo, Transformer Outputs For Compact Digital Disc Players, ENG Cassettes, VCR Playback, Off-Air Tuners and Audition Outputs.	\$209.00	B
P/N 20273-301	Rack Panel Mounts one or two MM100s or DP100s in 19".	\$22.00	A

# Vanguard Series™

## Broadcast Audio Consoles

<b>BC8DSR</b>	Eight mixers, Twelve balanced inputs. Two mono mic. preamps with PAN pots. Dual Stereo program outputs plus two Mono Mix program outputs. AB type J rotary faders control DBX <sup>110</sup> VCAs.	<b>\$3,395.00</b>	<b>A</b>
<b>BC8DSL</b>	Eight mixers, Twelve balanced inputs. Two mono mic. preamps with PAN pots. Dual Stereo program outputs plus two Mono Mix program outputs. Sixty mm. Linear faders control DBX <sup>110</sup> VCAs.	<b>3,395.00</b>	<b>A</b>
<b>BC12DSL</b>	Twelve mixers, Twenty-four balanced inputs. Two mono mic. preamps with PAN pots. Dual Stereo program outputs plus two Mono Mix program outputs. Sixty mm. Linear faders control DBX <sup>110</sup> VCAs.	<b>4,995.00</b>	<b>A</b>

### Optional Features

<b>VFD</b>	<b>Vacuum Fluorescent Display</b> Two Stereo, two color fourteen segment VU displays with peak storage. Replaces conventional VU meters and allows continuous metering of both stereo program outputs.	<b>175.00</b>	<b>A</b>
<b>EXP</b>	<b>Input Expander</b> Increases console input capability with two banks of five self-indicating input switches wired to any two mixer inputs. Remote program cue capability.	<b>275.00</b>	<b>A</b>
<b>SSS</b>	<b>Stop/Start Switches</b> Eight momentary lighted pushbutton switches with terminal board for remote start-stop control of four Tape Decks, cart machines or turntables. Mounted into lower front panel between phone jacks and aligned with center mixers. (Lamps not included). Two SSS options may be used with BC12DSL to control eight machines.	<b>125.00</b>	<b>A</b>
<b>MIC</b>	<b>Dual Microphone Preamplifier</b> Additional pair of 40dB microphone preamplifiers each with an on-board PAN pot. Drive two stereo hi-level inputs with mono or use as a stereo pair feeding a single mixer.	<b>150.00</b>	<b>A</b>
<b>RLY</b>	<b>Speaker Muting and Tally Light Relay</b> A two relay module board provides relay operated speaker muting and tally light control for the control room and one studio.	<b>125.00</b>	<b>A</b>
<b>PLF</b>	<b>Premium Linear Faders</b> Eight Penny and Giles Model 3010 65MM Travel Twelve Penny and Giles Model 3010 65MM Travel	<b>600.00</b> <b>900.00</b>	<b>A</b> <b>A</b>

### Maintenance Kits

<b>SCK</b>	<b>Semiconductor Kit</b> Spare integrated circuits, transistors, diodes, LEDs, regulators and bridge rectifiers useful for local repair.	<b>125.00</b>	<b>A</b>
<b>FDR-8</b>	<b>Replacement Rotary Fader Kit for BC8DSR - Quantity - Eight</b>	<b>80.00</b>	<b>A</b>
	<b>Replacement Linear Fader Kits for:</b>		
<b>FDL-8</b>	BC8DSL - Quantity eight	<b>50.00</b>	<b>A</b>
<b>FDL-12</b>	BC12DSL - Quantity twelve	<b>75.00</b>	<b>A</b>

**Note:** Prices shown for options are for factory installation at time of console manufacture.

Broadcast Consoles

# Price List

Phono Preamplifiers

Dual Mike, Line, &  
Power Amplifiers

IHF/600 Ohms  
Interface Amplifiers

Distribution Amplifiers

Modular Distribution  
Amplifiers

Low Cost  
Distribution Amplifiers

Audio Processors

Mike & Line  
Amplifier/Mixer

Micro Meter Studio  
Metering & Monitor System

Single Mike  
Amplifiers

Studio  
Metering System

*All equipment  
rack mountable  
single or dual*



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Dedicated to Sound Engineering



# Specifications

	MATCH-MAKER™	MATCH-MAKER™ DISC-PATCHER™
	Channels L and R Balanced to Unbalanced	Channels LL and RR Unbalanced to Balanced
<b>GAIN</b>	-14db nominal, -8db maximum. User adjustable for -10dBu (.25V) output with 0, +4 or +8dBm inputs	+14db nominal, +22db maximum. User adjustable to 0, +4 or +8dBm output with -10dBu (.25V) input.
<b>NOMINAL LEVELS</b>	+4dBm input, -10dBu (.25V) out	-10dBu (.25V) in, +4dBm out
<b>PEAK LEVELS</b>	+22dBm in, +8dBu (2.0V) out	+8dBu (2.0V) in, +22dBm out
<b>MAXIMUM LEVELS</b>	+28dBm in, +20.5dBu out	+24dBu in, +23dBm out
<b>NOISE OUTPUT</b> 20-20kHz meas. band.	-90dBu maximum	-80dBm maximum
<b>HUM OUTPUT</b> 60, 120 and 180 Hz	-96dBu maximum	-90dBm maximum
<b>DYNAMIC RANGE</b> Peak levels to Noise	98db minimum	102db minimum
<b>HARMONIC DISTORTION</b> 20Hz to 20,000Hz	.02% max. at Peak Level .005% max. at Nominal Level	.01% max. at Peak Level .005% max. at Nominal Level
<b>INTERMOD. DISTORTION</b> SMPTE, 7k/60Hz, 4:1	.005% max. at Peak and Nominal Levels.	.005% max. at Peak and Nominal Levels.
<b>FREQUENCY RESPONSE</b>	+0, -.25db, 20 to 20,000Hz. -3db at .5Hz and 150kHz	+0, -.25db, 20 to 20,000Hz -3db at 1.0Hz and 65kHz
<b>CROSSTALK</b> L↔R, LL↔RR, L↔LL & RR, R↔LL & RR	70db minimum at 10kHz in all modes.	70db minimum at 10kHz in all modes.
<b>INPUT HUM REJECTION</b> Common Mode Signals	60db minimum, internal trimmer	N.A.
<b>INPUT IMPEDANCE</b>	Balanced, 20kohm bridging Split and RF Bypassed	Unbalanced, 10,000 ohms Split and RF Bypassed
<b>OUTPUT IMPEDANCE</b>	Unbalanced, 1500 ohms max. Zs. Outputs may be paralleled for mono.	Transformer Balanced, 40 ohms maximum source impedance. 600/150 ohms load impedance.
<b>SLEW RATE</b>	13V/uSec.	13V/uSec.
<b>RISE TIME</b> Peak Level Square Wave	2 uSec.	8 uSec.
<b>OVERSHOOT</b>	None	2% maximum
<b>PHASE SHIFT</b> 20 to 20,000Hz		10 degrees max. input to output. Less than 2 degrees between channels.
<b>POWER</b>	115/230 VAC ±10%, 47 to 63 Hz, 4VA.	
<b>DIMENSIONS</b>	1.5"H x 8.5"W x 4.65"D, 3 lbs. net, 5 lbs. shipping wgt.	
<b>ENCLOSURE</b>	Steel Wrap-around with reverse printed graphics overlay.	
<b>MOUNTING</b>	Adhesive backed VELCO™ strips provided for easy mounting to mating equipment, desk or shelf surface. Accessory Rack Panel P/N 20273-501 mounts 1 or 2 units in 1¾ x 19 inch space.	
<b>CONNECTORS</b>	Unbalanced IHF lines - RCA type Phono Jacks 600 ohm Inputs - XLR type, three terminal female. 600 ohm Outputs - XLR type, three terminal male.	

Distortion, Noise, Dynamic Range, Crosstalk and Response measurements all made at nominal gain settings.

Reference Levels: 0dBm = .775V/600 ohms, 0dBu = .775Vrms.

Technical specifications subject to change at the discretion of the manufacturer.

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INCORPORATED**

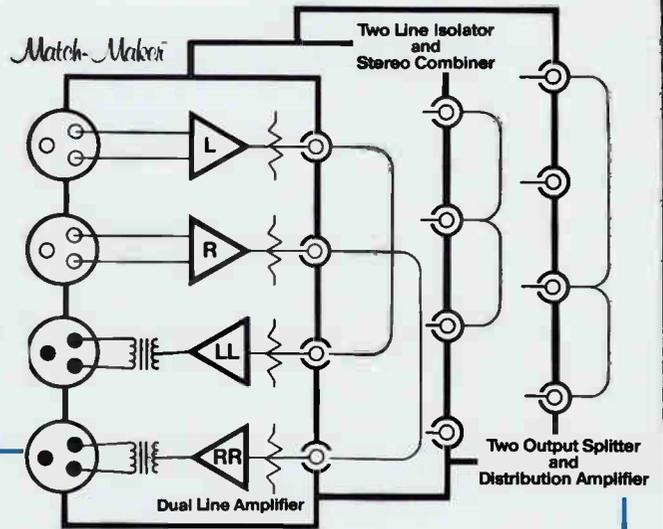
Dedicated to sound engineering



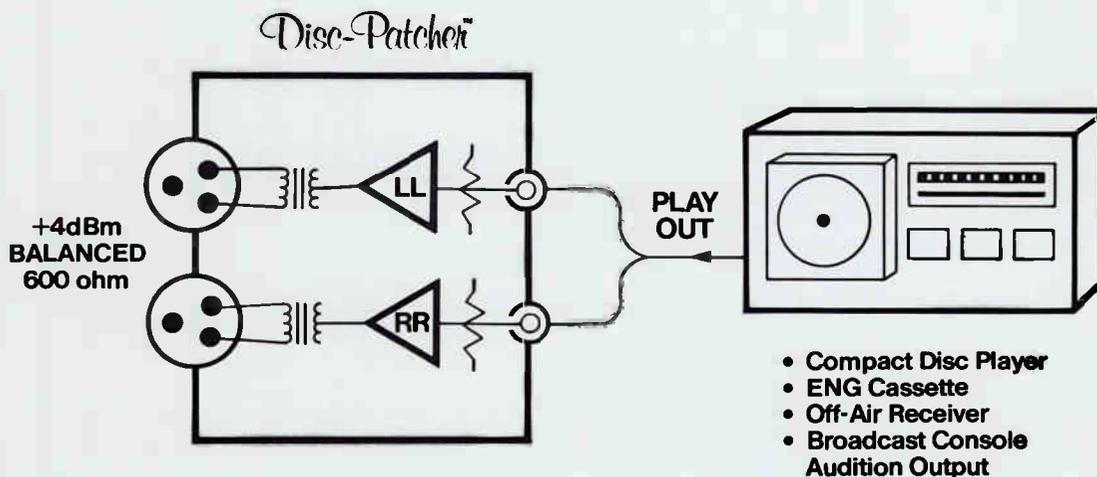
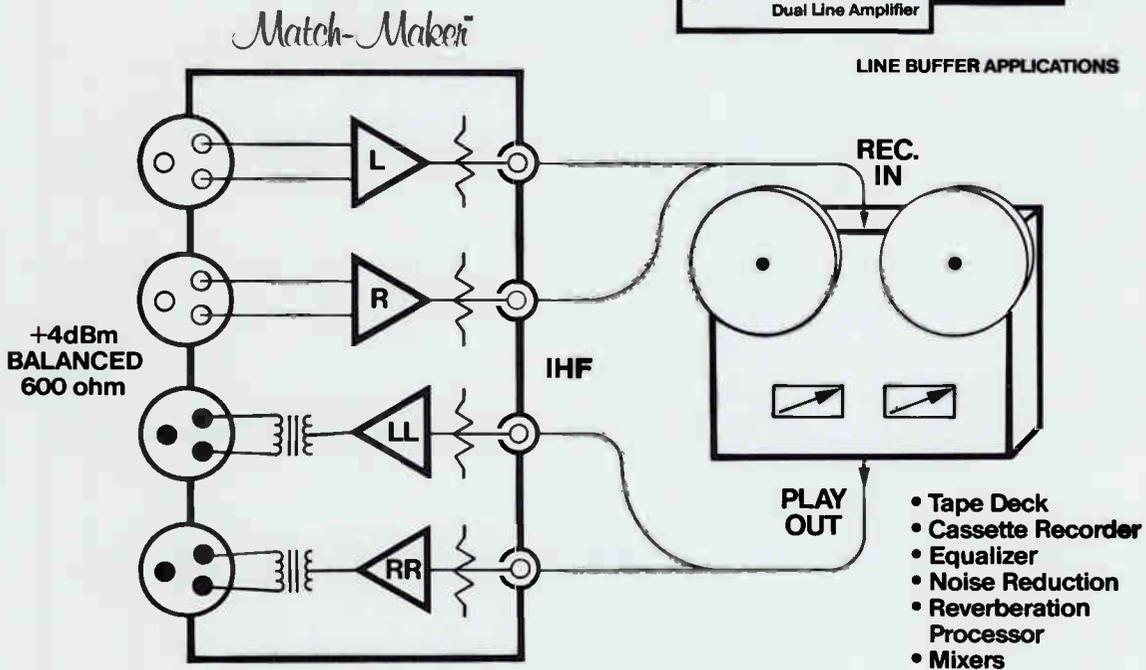
328 Maple Avenue, Horsham, PA 19044 (215) 443-0330

## Packaging

The Match-Maker™ and Disc-Patcher™ are identically packaged in a rugged, compact steel enclosure. All controls and connectors are recessed and their identification markings are reverse printed on the protected side of a heavy duty polycarbonate overlay. All power supply components are internal and are shielded by the steel wrap-around. Adhesive backed Velcro™ strips are supplied with the unit to assure secure mounting to shelves, newsroom desks and Compact Disc Players or other mating equipment without drilling holes. An accessory rack panel mounts one or two units side by side in a single 1 3/4 inch rack space.



LINE BUFFER APPLICATIONS



## Problem

Consumer audio equipment can offer unique features, performance or pricing making it very desirable for professional use. Unfortunately, RF pick-up, crosstalk, high frequency rolloff, hum loops and distortion often results from direct connection of low level IHF outputs into 600 ohm systems in studio or broadcast environments.

## Solution

The Match-Maker™ and Disc-Patcher™ level and impedance matching interfaces match semi-pro, industrial and consumer audio equipment into professional balanced 600 ohm systems.



### The Match-Maker™ MM100

is a bi-directional interface to bridge a stereo pair of 600 ohm balanced, +4dBm lines and convert those signals to a nominal .25V (-10dBu) level to feed, for example, the record inputs of a cassette or reel-to-reel tape recorder. Simultaneously the Match-Maker™ also converts the unbalanced stereo, .25 Volt deck playback outputs to a transformer balanced, floating +4dBm, 600 ohm professional line level.

### The Disc-Patcher™ DP100

is a uni-directional stereo interface for Playback Only applications. It is designed specifically to convert the unbalanced IHF outputs of Digital Compact Disc Players to transformer balanced and isolated 600 ohm line levels with no compromise or degradation of the superb performance available from the digital audio source. The Disc-Patcher™ is equally at home on a news-room desk to interconnect field ENG cassette recorders into broadcast systems for dubbing.



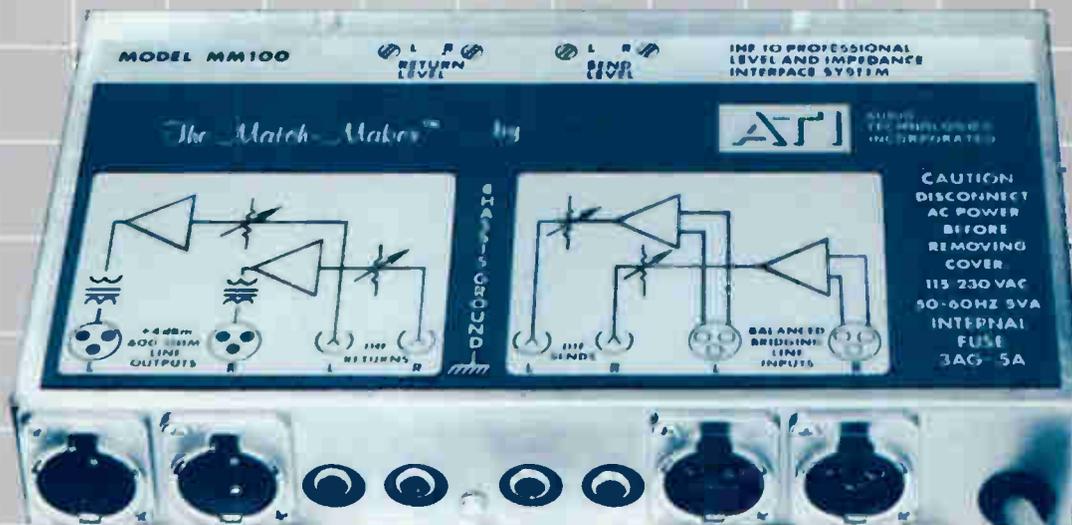
## Operation

Channels LL and RR of both the Match-Maker™ and the Disc-Patcher™ convert unbalanced IHF inputs via RCA phono jacks to transformer balanced 600 ohm XLR outputs. The IHF inputs are RF bypassed and diode protected from accidental overdrive. Panel gain controls allow a reference +4dBm output to be set for inputs ranging from less than .1V to over 1.0V and will allow many playback devices having front output level controls to be simply preset to maximum.

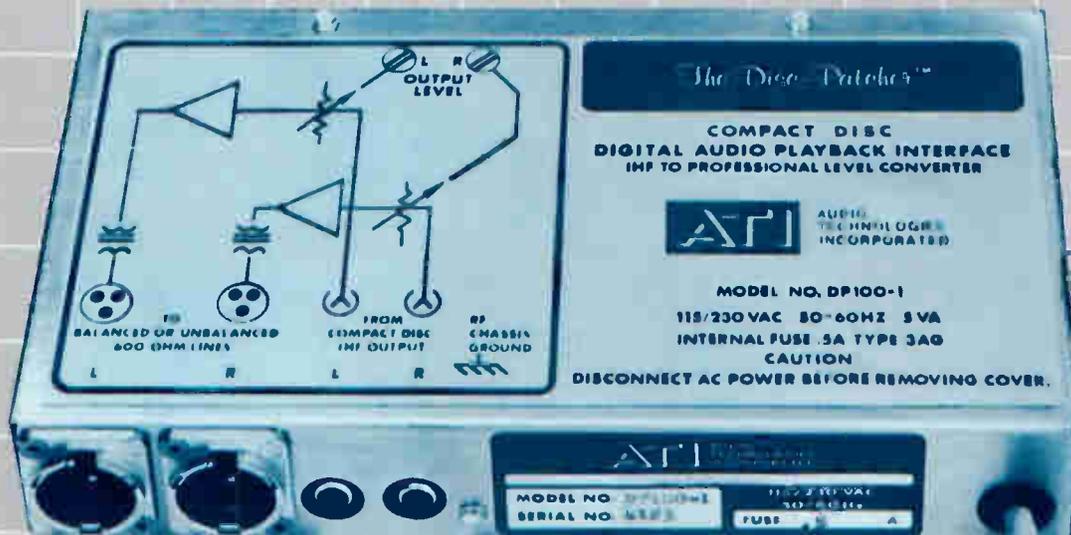
The unique output driver provides the total isolation, faraday shielding, superior balance, improved RF immunity and ease of application of a true transformer coupled balanced output without the transformers characteristic limitations of high distortion, poor response and hum pickup. Typical output distortion measurements made at both peak (+22dBm) and nominal (+4dBm) levels barely exceed generator residuals at .004% from

20Hz to 20,000Hz. Hum pickup from the power supply is non-existent and flat response is greatly extended. The output is protected from short circuits but will drive over a half mile of shielded cable with less than 1db of signal rolloff at 20,000Hz.

The Match-Maker™ bi-directional interface also incorporates XLR input, differential amplifier channels, L and R to bridge a pair of balanced (or unbalanced) 600 ohm lines and convert their signals to IHF level, phono jack outputs. Heavy common-mode bypassing of the inputs gives excellent RF protection and internal CMR trimmers allow 80db hum nulls to be set and maintained. Output level controls accommodate 0 to +8dBm nominal inputs or allow presetting of connected IHF recorder input controls. The IHF outputs may be paralleled for mono.



# Match-Maker™



# Disc-Patcher™

**PRO ↔ IHF**  
 Level Matching Interface Systems

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 Dedicated to sound engineering



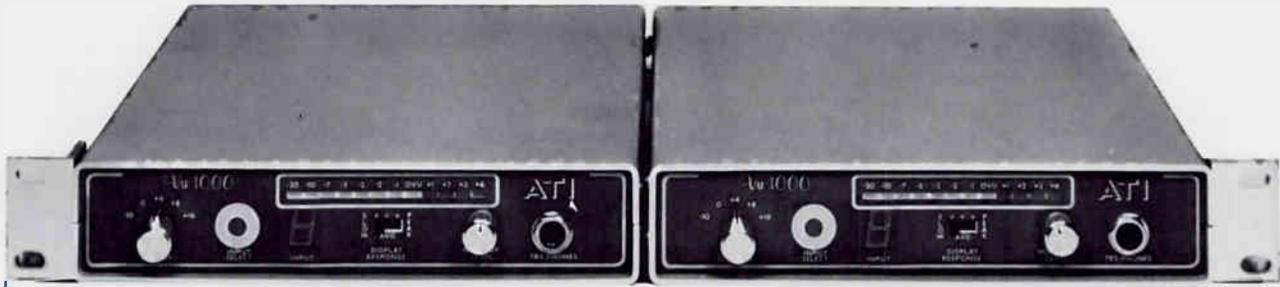
# VU 1000

## MicroMeter

SCANS EIGHT AUDIO CHANNELS  
INDICATES SELECTED INPUT  
BRIGHT LED BARGRAPH DISPLAY  
BALANCED LINE OUTPUT  
MONITORING AMPLIFIER

### FEATURES

- EIGHT BALANCED BRIDGING INPUTS.
- THREE COLOR, 12 SEGMENT LED BARGRAPH METER.
- VU, AVERAGE AND PPM BALLISTICS
- 0 VU CALIBRATIONS FOR -10, 0, +4, +8 AND +18 dBm INPUTS.
- LINE LEVEL, ACTIVE BALANCED OUTPUT. Provides constant output at 0 VU on each scale. Internal jumper selects 0, +4 or +8 dBm nominal output to 600 ohm line.
- TOUCH SWITCH INPUT SCAN WITH CHANNEL READOUT.
- REMOTE CONTROL INPUT SCAN with audio mute.
- STEREO INTERCONNECT gangs input channel selectors for stereo tracking.
- MONITOR CIRCUIT WITH LEVEL CONTROL VU1000-1 drives 600 ohm phones or external power amplifier such as an ATI MA1000 MicroMonitor. VU1000-2 includes 6 watt amplifier for Lo-Z phones or an 8 ohm external speaker. Phones mute external outputs.



### SPECIFICATIONS

**INPUTS** Active Balanced, 30K ohm bridging, +24 dBm maximum level, 60 db common mode hum rejection, RF bypassed, -94 dBm E.I.N.

**LINE OUTPUT** Active Balanced, 300 ohm source Z, +22 dBm maximum output into 600 ohms, jumper programmable for 0, +4 or +8 dBm sine wave output at 0 VU meter indication.  $\pm 25$  db response, .1% THD, 20 to 20000 Hz.

**MONITOR** VU1000-1, 10 Vrms through 150 ohms. VU1000-2, 6 watts into 8 ohms, fused.

**TERMINALS** Rear barrier block, fanning strip supplied.

**METER** Accuracy  $\pm 5$  db at 0 VU on all ranges. SLOW approximates VU response, PEAK approximates PPM ballistics, AVG is fast response mode.

**POWER** 115/230 VAC  $\pm 10\%$ , 47-63 Hz.

**SIZE** 8½"W x 1¾"H x 10"D, 5 lbs.

#### ACCESSORIES

Stereo Interconnect Cable	20209-501
Remote Control Scan Cable	20214-501
Rack Mount, Single, centered	20021-501
Rack Mount, Dual, Side by Side	20024-501
Rack Mount, VU1000 with MA1000	20215-501

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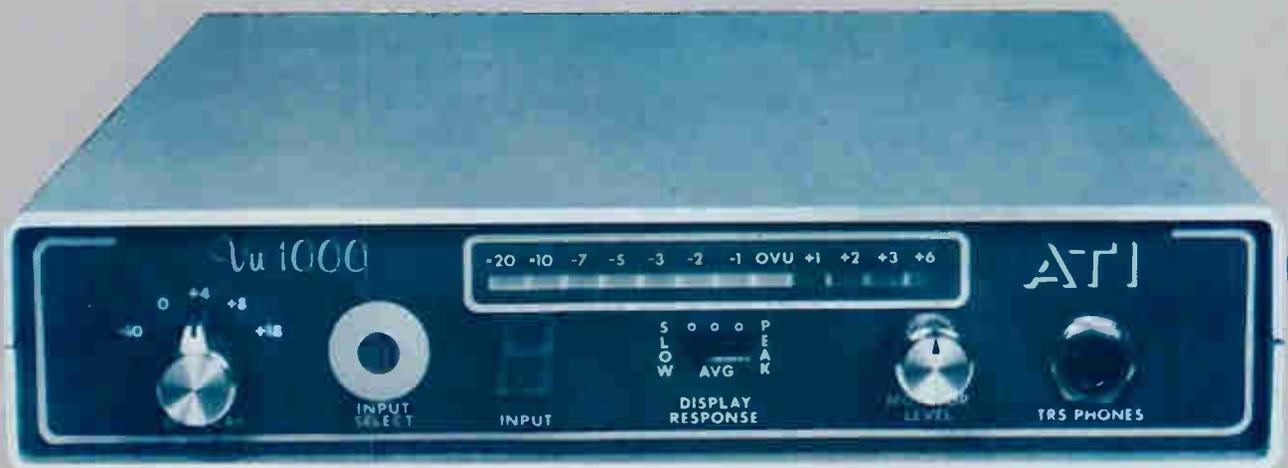
**328 W. Maple Avenue  
Horsham, PA 19044  
(215) 443-0330**

3 year limited warranty  
Technical specifications are subject to change at the discretion of the manufacturer.

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# Micro Amp Series <sup>TM</sup>

## VU 1000



## MicroMeter

**A COMPLETE STUDIO AUDIO  
METERING AND MONITORING  
SYSTEM**



**AUDIO  
TECHNOLOGIES  
INCORPORATED**

Dedicated to sound engineering

# Encoke Series™ from ATI...

When you want the very best..... from a limited budget.  
No-compromise audio quality.... in a cost effective enclosure  
Check the features ..... Compare the specifications  
No-frills ..... State of the Art

---

## FEATURES

- Adjustable R and C Phono cartridge loading
- 750 mVp-p input headroom
- Active 2 pole subsonic Warp Filter
- 90 db signal-to-noise ratio
- Precision equalizer with polystyrene capacitors and film resistors for stability
- Old or new RIAA curve by jumper change
- +18dBm active balanced outputs
- 13V/uSec Slew Rate for minimum TIM
- Fully RF protected with double ground plane P.C. boards, well shielded steel enclosure, double bypassing and Ferrite suppressors on all input, output and power leads
- Quality components, socketed IC's, AB pots, shielded power xfmr.
- Mono P100M and Stereo P100S models

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## SPECIFICATIONS

- Input Impedance: programmable, 50K to 100K ohms, 50 to 400 pf in 50 pf steps.
- Input Level: 5 mV nominal for +4dBm output, 250 mVRMS maximum at 1 KHz.
- Noise: S/N 80db minimum unwtgd, 90db "A" wtgd. ref. 10mVrms at 1 KHz, 600 ohm input termination and 20 KHz measurement band.
- Response:  $\pm 0.5$ db 30 to 20,000 Hz. ref. old or new RIAA curve.
- Subsonic Warp Filter: flat to 30 Hz, -6db at 20 Hz, -20db at 10 Hz, -30db at 5 Hz.
- Channel Separation: 60db min. 20 to 20KHz.
- Slew Rate: 13V/uSec
- Output Level: +18dBm into 600 ohm balanced or unbalanced loads. 10Vrms into high impedance loads.
- Output Impedance: 400 ohms balanced, 200 ohms single ended, split and RF bypassed.
- Distortion: .1% max. THD 20-20,000 Hz at +18 dBm into 600 ohm balanced loads, .05% typical into Hi-Z and single ended 600 ohm loads.
- IMD .05% max., SMPTE measurement.
- Power: 115/230 VAC, 50-60 Hz, 6VA
- Connectors: input, RCA type phono jacks, output-barrier block, .375 inch centers.
- Size: 9 $\frac{1}{4}$ "L x 5 $\frac{3}{8}$ "W x 1 $\frac{1}{2}$ "H, shipping weight 5 lbs.

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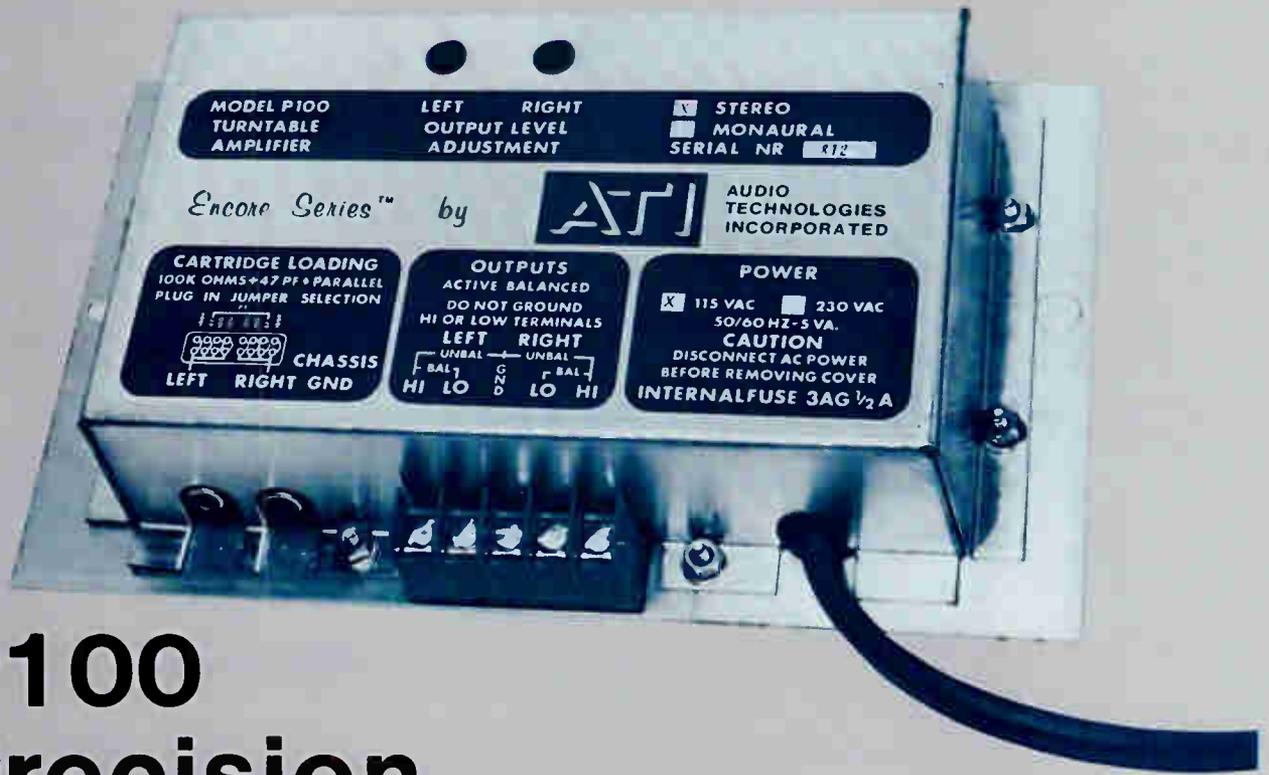
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TM

# Encore Series



## P100 Precision Turntable Amplifiers

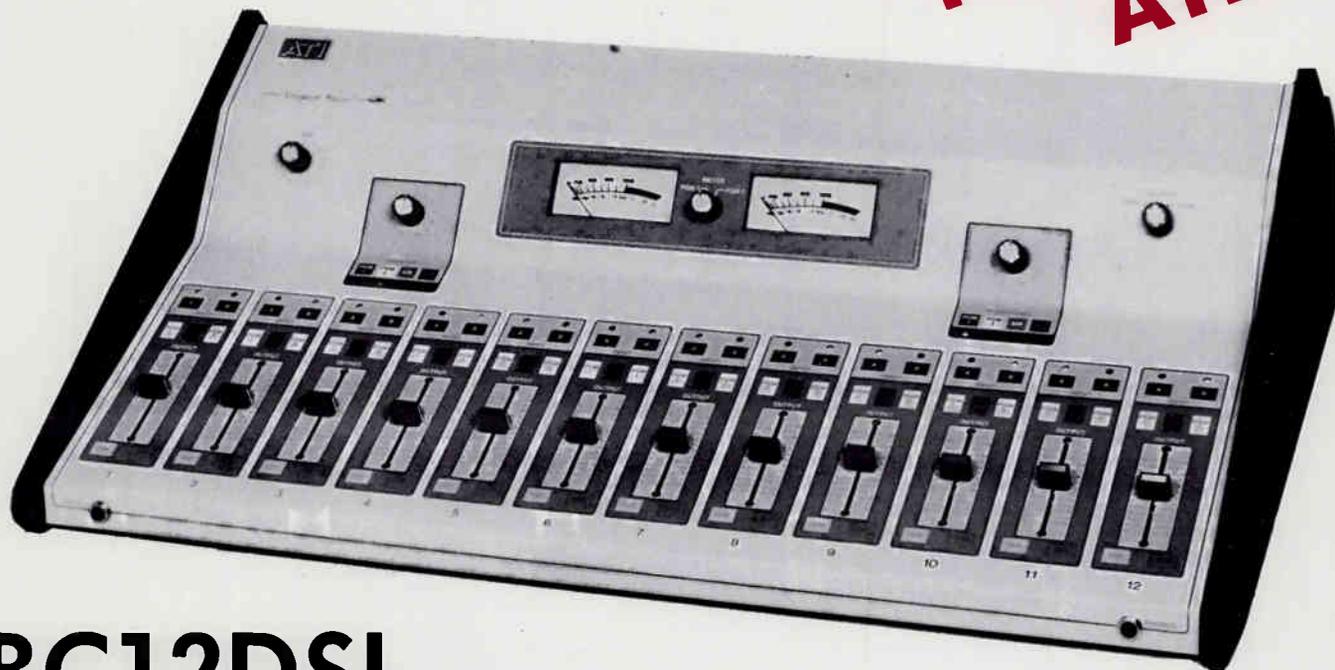


**AUDIO  
TECHNOLOGIES  
INCORPORATED**

Dedicated to sound engineering

# Vanguard Series™

**NEW FROM  
ATI!**



## BC12DSL

- 12 MIXERS
- 24 STEREO INPUTS
- DUAL STEREO and DUAL MONO PROGRAM OUTPUTS
- 4 INPUT HEADPHONE AMPLIFIER
- 4 INPUT MUTED MONITOR DRIVERS
- 2 MICROPHONE PREAMPS
- CUE AMPLIFIER and SPEAKER
- VCA LEVEL CONTROLS
- ELECTRONIC AUDIO SWITCHING
- MODULAR
- SERVICEABLE
- RF PROOF
- ONLY 32 INCHES WIDE

## INTRODUCTORY PRICE \$4995

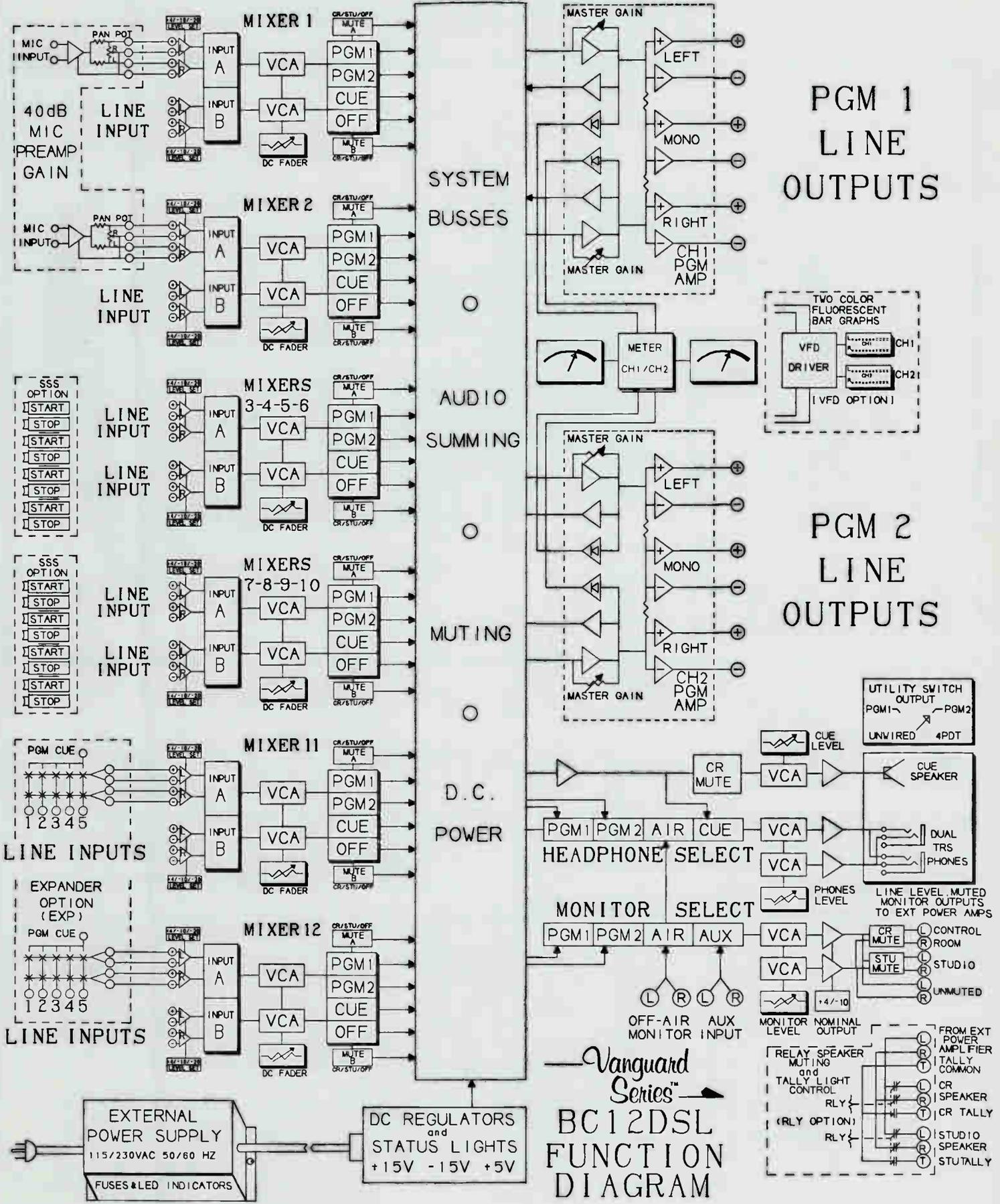
### Available Options:

- 10 Input Expander for 32 total inputs
- Start-Stop Switching
- Dual, Stereo Fluorescent Meters
- Penny and Giles Faders

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PGM 1  
LINE  
OUTPUTS

PGM 2  
LINE  
OUTPUTS

Vanguard  
Series  
BC12DSL  
FUNCTION  
DIAGRAM

# Micro Amp Series™

(continued)

## DA10000 Modular Distribution Amplifier Systems

### System Components

RM100	Rack Frame Assembly, 5¼ inch by 19 inch EIA Mounting. Mounts up to ten amplifier modules with up to two PS100 Power Supplies.	\$299	A
PS100	Power Supply, 115/230VAC IN, + and -18VDC OUT. Diode isolated outputs for redundant operation. Power Failure Alarm Output and Indicators.	\$299	A

## Mass Feed, Power Splitting Distribution Amplifier Modules

CDA100	Compressor/Distribution Amplifier, 1 input to 6 active balanced outputs at +22 dBm. 47 db gain, 24 db compression range. Signal gated compressor recovery, Loss-of-Signal Alarm, LED Bargraph metering of output and gain reduction.	\$395	A
MDA100	Metered Distribution Amplifier, 1 input to 6 active balanced outputs at +22 dBm. Loss-of-Signal Alarm and Indicator, LED Bargraph metering of output level.	\$335	A
DA100	Distribution Amplifier Module, 1 input to 6 active balanced outputs at +22 dBm.	\$250	A

## Individual Output Distribution Amplifier Modules with Independent Level Adjustments

MIDA100-1RC	Metered Remote Control Distribution Amplifier. 1 input to 4 independent transformer balanced outputs at +22 dBm. Remote/Local VCA Master Gain Control. LED Bargraph meter.	\$495	A
MIDA100-1	Metered Distribution Amplifier. 1 input to 6 independent transformer balanced outputs at +22 dBm. LED Bargraph meter.	\$449	A
IDA100-1	Distribution Amplifier Module. 1 input to 6 independent transformer balanced outputs at +22 dBm.	\$375	A
BP100-1	Blank, 1.2 inch panel to replace missing Amplifier Module	\$25	A
BP100-2	Blank, 2.0 inch panel replaces Power Supply Module	\$30	A
EX100-1	Distribution Amplifier Extender Assembly	\$150	A
P N20181-501	Spare PS100 Mating Connector Assembly	\$56	A
P N20179-501	Spare Amplifier Module Connector Assembly	\$49	A
P N20184-501	DC Interconnect Cable Assembly	\$5	A
P N20185-501	AC Line Cord	\$8	A

PRICE LIST EFFECTIVE JANUARY 1, 1987    FOB OUR PLANT

# Micro Amp Series™

## Microamp Dual Microphone Amplifiers

M1000-1	Transformer Outputs	\$365.00	B
M1000-2	Balanced Differential Outputs	\$365.00	B

## Microamp Dual Line Amplifiers

L1000-1	Transformer Outputs	\$345.00	B
L1000-2	Balanced Differential Outputs	\$345.00	B

## Microamp Stereo Phono Amplifiers

P1000-1	Transformer Outputs	\$365.00	B
P1000-2	Balanced Differential Outputs	\$365.00	B

## Microamp Stereo Headphone Power Amplifier

MA1000-1	Stereo 10W Mono Bridged 25W	\$385.00	B
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## Microamp Mass Feed Distribution Amplifiers

DA1000-1	1 input to 8 Balanced Differential Outputs	\$345.00	B
DA2008-1	DUAL Section, 1 by 4 each	\$365.00	B

## Microamp Line Switcher, Meter and Monitor Amplifier

Eight Balanced Inputs to One Balanced Line Output, 5 Range LED Meter and Monitor.

VU1000-1	Drives 600 ohm Phones or ext. Power Amp such as MA1000	\$625.00	C
VU1000-2	Includes 6W Power Amp for Lo-Z Phones or ext. Speaker	\$725.00	C
P N 20209-501	Stereo Interconnect Cable	\$15.00	A
P N 20214-501	Remote Control Scan Cable	\$12.00	A

## Rack Mount Kits for Above

P N 20021-501	Single Unit, Centered Mount	\$17.00	A
P/N 20024-501	Double, Side by Side Mount	\$22.00	A

## Microamp Distribution Amplifiers

One Input to Eight Individual Outputs - Rack Mounting

DA1008-1	+ 22 dBm, Transformer Outputs	\$850.00	C
DA1008-2	+ 22 dBm, Balanced Differential Outputs	\$755.00	C
DA1008-3	+ 30 dBm, Transformer Outputs	\$1095.00	C
DA1008-4	+ 30 dBm, Balanced Differential Outputs	\$995.00	C
Dual 1 by 8, Two inputs to Sixteen Individual Outputs - Rack Mounting			
DA2016-1	+ 22 dBm, Transformer Outputs	\$1195.00	C
DA2016-2	+ 22 dBm, Balanced Differential Outputs	\$995.00	C
DA2016-3	+ 30 dBm, Transformer Outputs	\$1695.00	C
DA2016-4	+ 30 dBm, Balanced Differential Outputs	\$1475.00	C

## Emph'a sizer™ Audio Processor

Includes an Input Signal Gate, 4 Switchable Parametric Equalizers, a Wide Range Compressor-Limiter and both Microphone and Line Level Inputs and Outputs.

EM1000-1	Transformer Output	\$1395.00	C
EM1000-2	Balanced Differential Outputs	\$1395.00	C
P N 20104-501	Single [centered] Rack Mount	\$30.00	A
P N 20105-501	Dual Side by Side Rack Mount	\$45.00	A

## Encore Series™ Turntable Amplifiers

P100S	+ 18 dBm, Active balanced, Stereo	\$259.00	B
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## Encore Series™ Distribution Amplifiers

Independent + 18 dBm active balanced outputs with individual controls. Output clipping indicators. Rack mounting.

DA208	Dual 1 by 4	\$329.00	B
DA416	Quad 1 by 4	\$469.00	B

## IHF ↔ Pro Level and Impedance Converters

Interface semi-pro, unbalanced, -10 db IHF equipment into 600 ohm balanced systems.

MM100 Match-Maker™	Bi-Directional, Stereo, Transformer Outputs For Cassette or Reel Recorders, Mixers, VCRs and Graphic Equalizers.	\$249.00	B
DP100 Disc-Patcher™	Uni-Directional, Stereo, Transformer Outputs For Compact Digital Disc Players, ENG Cassettes, VCR Playback, Off-Air Tuners and Audition Outputs.	\$199.00	B
P/N 20273-501	Rack Panel Mounts one or two MM100s or DP100s in 19".	\$22.00	A

# Vanguard Series™

## Broadcast Audio Consoles

<b>BC8DSR</b>	Eight mixers, Twelve balanced inputs. Two mono mic. preamps with PAN pots. Dual Stereo program outputs plus two Mono Mix program outputs. AB type J rotary faders control DBX™ VCAs.	<b>\$3,195.00</b>	<b>A</b>
<b>BC8DSL</b>	Eight mixers, Twelve balanced inputs. Two mono mic. preamps with PAN pots. Dual Stereo program outputs plus two Mono Mix program outputs. Sixty mm. Linear faders control DBX™ VCAs.	<b>3,195.00</b>	<b>A</b>
<b>BC12DSL</b>	Twelve mixers, Twenty-four balanced inputs. Two mono mic. preamps with PAN pots. Dual Stereo program outputs plus two Mono Mix program outputs. Sixty mm. Linear faders control DBX™ VCAs.	<b>4,995.00</b>	<b>A</b>

### Optional Features

<b>VFD</b>	<b>Vacuum Fluorescent Display</b> Two Stereo, two color fourteen segment VU displays with peak storage. Replaces conventional VU meters and allows continuous metering of both stereo program outputs.	<b>175.00</b>	<b>A</b>
<b>EXP</b>	<b>Input Expander</b> Increases console input capability with two banks of five self-indicating input switches wired to any two mixer inputs. Remote program cue capability.	<b>275.00</b>	<b>A</b>
<b>SSS</b>	<b>Stop/Start Switches</b> Eight momentary lighted pushbutton switches with terminal board for remote start-stop control of four Tape Decks, cart machines or turntables. Mounted into lower front panel between phone jacks and aligned with center mixers. (Lamps not included). Two SSS options may be used with BC12DSL to control eight machines.	<b>125.00</b>	<b>A</b>
<b>MIC</b>	<b>Dual Microphone Preamplifier</b> Additional pair of 40dB microphone preamplifiers each with an on-board PAN pot. Drive two stereo hi-level inputs with mono or use as a stereo pair feeding a single mixer.	<b>150.00</b>	<b>A</b>
<b>RLY</b>	<b>Speaker Muting and Tally Light Relay</b> A two relay module board provides relay operated speaker muting and tally light control for the control room and one studio.	<b>125.00</b>	<b>A</b>
<b>PLF</b>	<b>Premium Linear Faders</b> Eight Penny and Giles Model 3010 65MM Travel Twelve Penny and Giles Model 3010 65MM Travel	<b>600.00</b> <b>900.00</b>	<b>A</b> <b>A</b>

### Maintenance Kits

<b>SCK</b>	<b>Semiconductor Kit</b> Spare integrated circuits, transistors, diodes, LEDs, regulators and bridge rectifiers useful for local repair.	<b>125.00</b>	<b>A</b>
<b>FDR-8</b>	<b>Replacement Rotary Fader Kit for BC8DSR - Quantity - Eight</b>	<b>80.00</b>	<b>A</b>
	<b>Replacement Linear Fader Kits for:</b>		
<b>FDL-8</b>	BC8DSL - Quantity eight	<b>50.00</b>	<b>A</b>
<b>FDL-12</b>	BC12DSL - Quantity twelve	<b>75.00</b>	<b>A</b>

**Note:** Prices shown for options are for factory installation at time of console manufacture.



## PRICE LIST

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Distribution Amplifiers

Phono Preamplifiers

Dual Mike, Line, &  
Power Amplifiers

IHF/600 Ohms  
Interface Amplifiers

Broadcast Consoles

Modular  
Distribution Amplifiers

Low Cost  
Distribution Amplifiers

Audio Processors

Micro Meter  
Studio Metering &  
Monitor System

---

*All equipment  
rack mountable  
single or dual*

---

## Audio Technologies Incorporated

328 W. Maple Avenue • Horsham, PA 19044 • (215) 443-0330

*Dedicated to Sound Engineering*

# Sound Specifications

## Output Clipping Level

All channels simultaneously driven to full output.

DA2016 - 1, 2  
DA1008 - 1, 2  
DA1008 - 3, 4

+22 dBm, 600/150 ohms  
+22 dBm, 600/150 ohms  
+30 dBm, 600/150 ohms

## Distortion

Rated output and input levels to  
+24 dBm bridging

.25% maximum THD, 30 to 20,000 Hz

## Frequency Response

+/- .25 db 30 to 20,000 Hz

## Output Noise

20 KHz measurement bandwidth  
600 ohm source impedance, full gain

-70 dBm maximum

## Hum Rejection

Common mode, 60 to 120 Hz

80 db

## Input Overload

+24 dBm bridging, 600 ohms

## Input Impedance

Balanced differential inputs  
30,000 ohm bridging

## Gain

24 db, front panel screwdriver adjustable

## Power

115/230 VAC +/- 10%, 47-63 Hz.

## Size

17" W, 1 3/4" H, 10 1/2" D, 10 lbs.

## Metering

Electronic SCAN switching, 12 segments, 3 color, peak reading LED  
VU indicator, 0 VU selectable to +4, +8, or +18 dBm by front panel switch.  
LED channel indicator.

## Headphone Output

20 volt p-p output to 600 ohm phones, 30 mW output to low impedance phones

## Mounting

Suction feet for non-slip desk mounting and brushed aluminum extrusion rack mount brackets supplied.

## Input/Output Connections

High density screw terminal barrier blocks. Fanning strips supplied for easy installation.

## Models

DA1008-1	1 in x 8 out,	Transformer coupled outputs,	+22 dBm output
DA1008-2	1 in x 8 out,	Balanced differential outputs,	+22 dBm output
DA1008-3	1 in x 8 out,	Transformer coupled outputs,	+30 dBm output
DA1008-4	1 in x 8 out,	Balanced differential outputs,	+30 dBm output
DA2016-1	2 in x 16 out,	Transformer coupled outputs,	+22 dBm output
DA2016-2	2 in x 16 out,	Balanced differential outputs,	+22 dBm output
DA2016-3	2 in x 16 out,	Transformer coupled outputs,	+30 dBm output
DA2016-4	2 in x 16 out,	Balanced differential outputs,	+30 dBm output

Represented by:



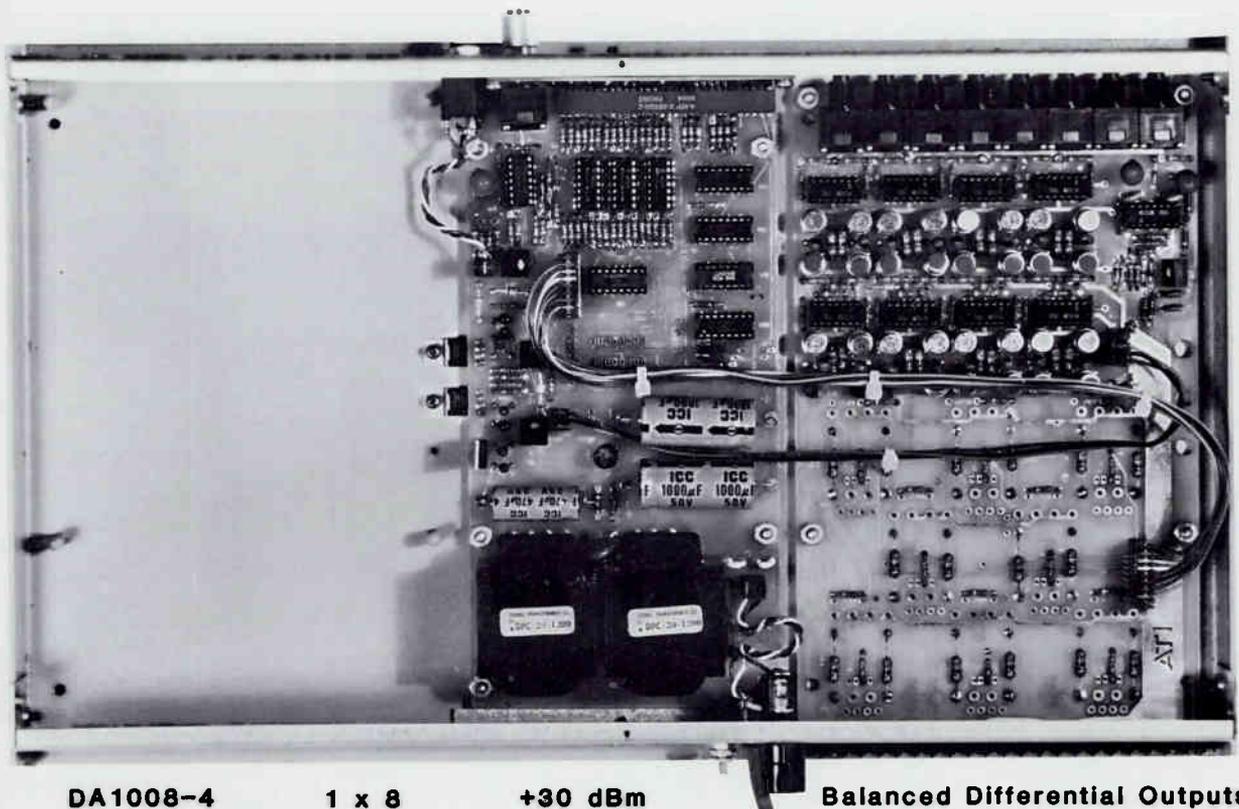
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3 year limited warranty.

Technical specifications are subject to change at the discretion of the manufacturer.

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DA1008-4

1 x 8

+30 dBm

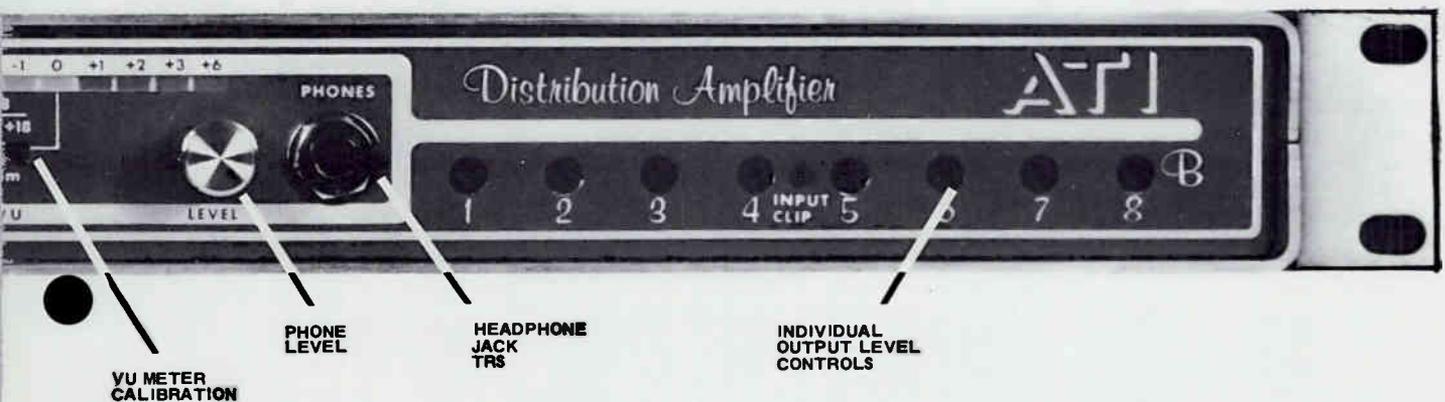
Balanced Differential Outputs

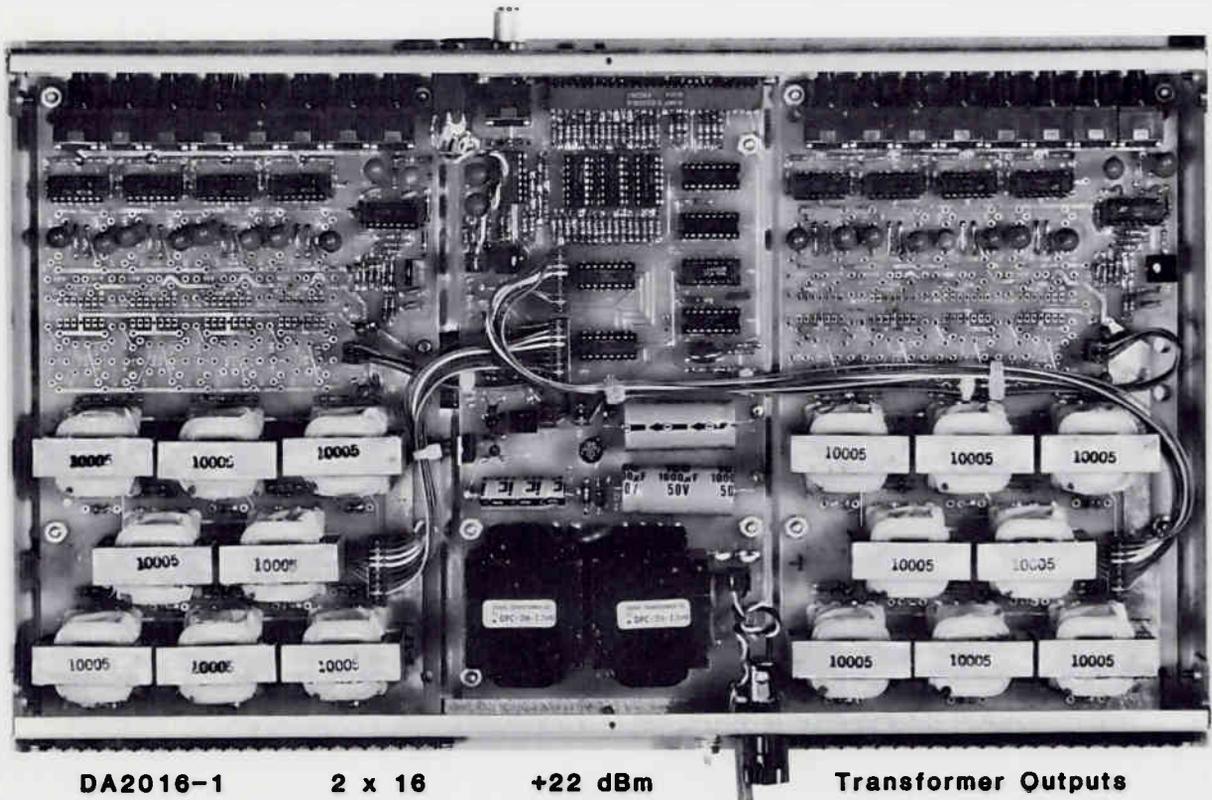
## Sound Engineering

- MicroAmps have been designed by a team with a 25-year history of successful broadcast and studio equipment design.
- MicroAmps eliminate by design the most common problems in DA usage with RF protected inputs and outputs and extremely high input and output clipping levels.
- MicroAmps exclusively utilize the newest premium integrated amplifiers designed specifically for professional audio applications rather than lower performance, lower cost instrumentation grade operational amplifiers.
- MicroAmp Distribution Amplifiers are available with individual transformer outputs for high RF environments; Balanced differential outputs to provide maximum output with lowest distortion and lowest cost; +30 dBm models for critical headroom applications and network use.

## Sound Features

- MicroAmps provide individual adjustment for each output. Audio taper, hot molded, sealed, premium level controls eliminate noise and erratic operation.
- MicroAmps have exclusive SCAN monitoring and metering. SCAN pressure sensor switch is fully protected behind the panel. Touching SCAN marking on the panel scans the monitor circuit across all 16 outputs at two steps per second. LED digital read-out indicates channel being monitored.
- MicroAmp DAs provide a high resolution, three color LED VU meter display. Front panel calibration switch selects +4, +8, or +18 dBm outputs at 0 VU.
- MicroAmp headphone monitor provides two channel monaural drive for stereo headphones with front panel level control and phone jack.
- MicroAmp Input Overload Indicators flash to indicate input signals which exceed the rated +24 dBm maximum input level.





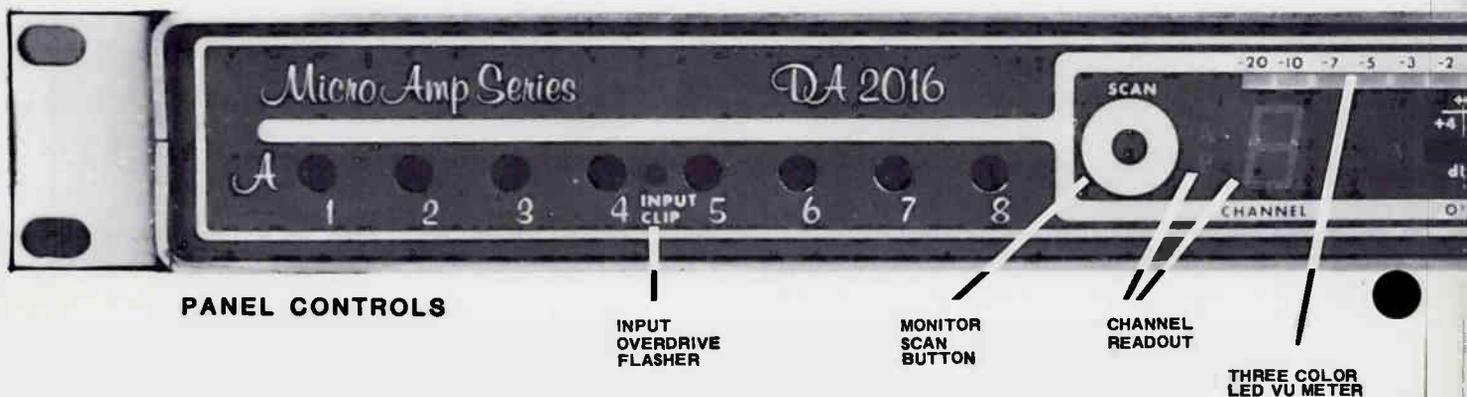
## Sound reasons to specify ATI

### Sound Packaging

- Handsome, reverse printed polycarbonate panels and textured polyurethane paint will resist years of wear and abuse.
- MicroAmps are rackable and stackable, only 1¾ in. high (one rack unit). Rack mount brackets are removable for desk-top use and non-slip suction feet keep them where you put them.
- MicroAmps are fully RF protected with shielded cases, double ground plane PC boards and interwinding transformer shielding.
- MicroAmps are complete even to input-output terminal block fanning strips.

### Sound Performance

- MicroAmps provide +22 dBm at clipping (all channels driven). +30 dBm models available for critical headroom requirements.
- MicroAmps are quiet, total output noise below -60 dBm at full gain.
- MicroAmps are transparent, a 13 V/microsecond slew rate eliminates the irritating harshness of Transient Intermodulation Distortion (TIM). Exclusive use of the 5533 audio IC provides 100 db open loop gain with a 50 MHz gain-bandwidth product to hold typical circuit distortion below .005%, even at 30 KHz.



PANEL CONTROLS

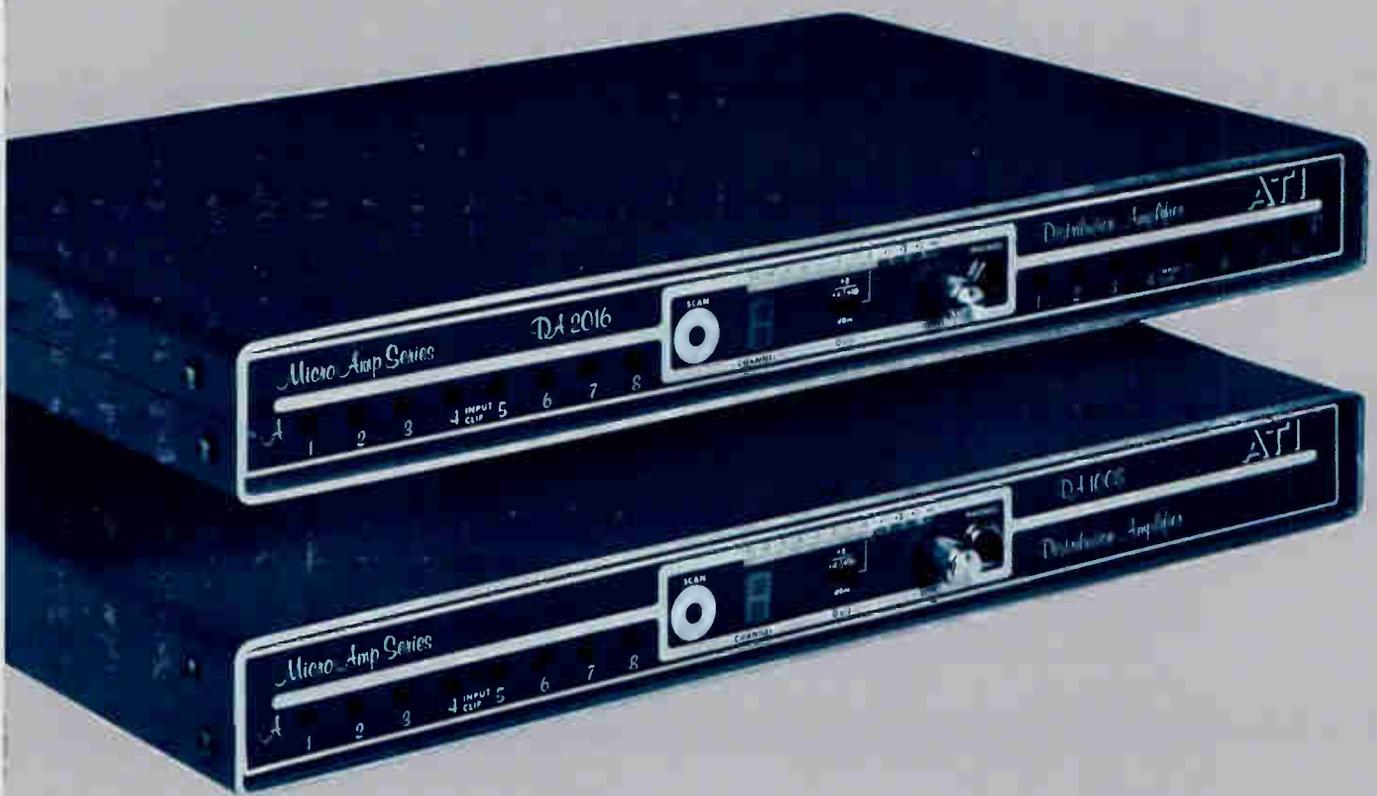
INPUT  
OVERDRIVE  
FLASHER

MONITOR  
SCAN  
BUTTON

CHANNEL  
READOUT

THREE COLOR  
LED VU METER

# Micro Amp Series



**DISTRIBUTION AMPLIFIERS**

**DA1008**

**DA2016**

**SINGLE 1 by 8**

**DUAL 1 by 8**



**AUDIO  
TECHNOLOGIES  
INCORPORATED**

Dedicated to sound engineering

# Specifications

DA-10000  
MODULAR  
DISTRIBUTION  
AMPLIFIER  
SYSTEM

Specifications reflect performance in a typical DA10000 System consisting of ten mixed Distribution Amplifier modules and two PS100 Power Supplies mounted together in a RM100 Rack Frame.

<b>Nominal Output Level at OVU Meter Indication</b>	+4dBm, Balanced, 600 ohms.	<b>Metering</b> MDA100, CDA100, MIDA100 only	Ten segment LED Bargraph. Range -21 to +6 VU at 3db/step, 0 VU adjustable 0 to +18dBm.
<b>Output Clipping Level</b> All 60 outputs driven.	+22dBm, 600 ohms	<b>Headphone Output</b>	10Vrms to 600 ohm headphones.
<b>Distortion at +20dBm output.</b>	.25% THD, 30 to 20,000 Hz. .10% IMD, SMPTE Measurement.	<b>Gain</b>	24 db nominal, 54 db for CDA 100.
<b>Crosstalk at 10Khz, adjacent modules.</b>	70 db below nominal output.	<b>CDA100 Compressor</b>	
<b>Output Hum and Noise</b> Any module position, 24 db gain, 20 Khz measurement bandwidth.	80 db below nominal output.	Input Threshold Level	-30 dBm, adjustable upward.
<b>Frequency Response</b>	+0, -25db, 30 to 20,000 Hz.	Attack Time	50 mSec
<b>Input Impedance</b>	10Kohm, balanced differential. Protection diodes and bypasses.	Release Time	5 Sec nominal, 2 to 20 Sec with component change. Input must drop 20 db below comp. threshold for longer than .25 Sec.
<b>Input Hum Rejection</b> Common Mode, 60 to 120 Hz.	80 db, factory adjusted.	Compression Hold Threshold	1mSec. Typical
<b>Signal Alarm Threshold</b>	Detects on signal dropouts of 30db below 0 VU, longer than 1/4 Sec.	Recovery Time, to release Compression Hold	
<b>Signal Alarm Output</b>	CMOS FET Switch to .025 posts with mating plug. May be paralleled to activate common alarm.	<b>Power Requirements</b>	115/230 VAC $\pm$ 10% 47-63 Hz.
<b>Power Failure Alarm</b>	N.C. Reed Relay contacts held open only if both power supply outputs are above 12 VDC. May be paralleled to activate a common alarm.	<b>Size</b>	
		Rack Frame	5 1/4"H by 19"W by 14 1/2"D
		Amplifier Modules	Eurocard format, 100 mm X 220mm. 1.2 inch panel width.
		Power Supply Module	Eurocard Format, Extruded Frame, 2.0 inch panel width.
		<b>Accessories</b>	
		BP100-1	Blank Panel, replaces missing 1.2 inch amplifier module.
		BP100-2	Blank Panel, replaces missing 2.0 inch Power Supply module.
		EX100	DA Extender Assembly
		Module Connector Assys, use for test fixtures, extra rack positions, etc.	PS100 Conn. 20181-501 DA Module 20179-501 Conn. DC Cable, 15" 20184-501 AC Line Cord 20185-501

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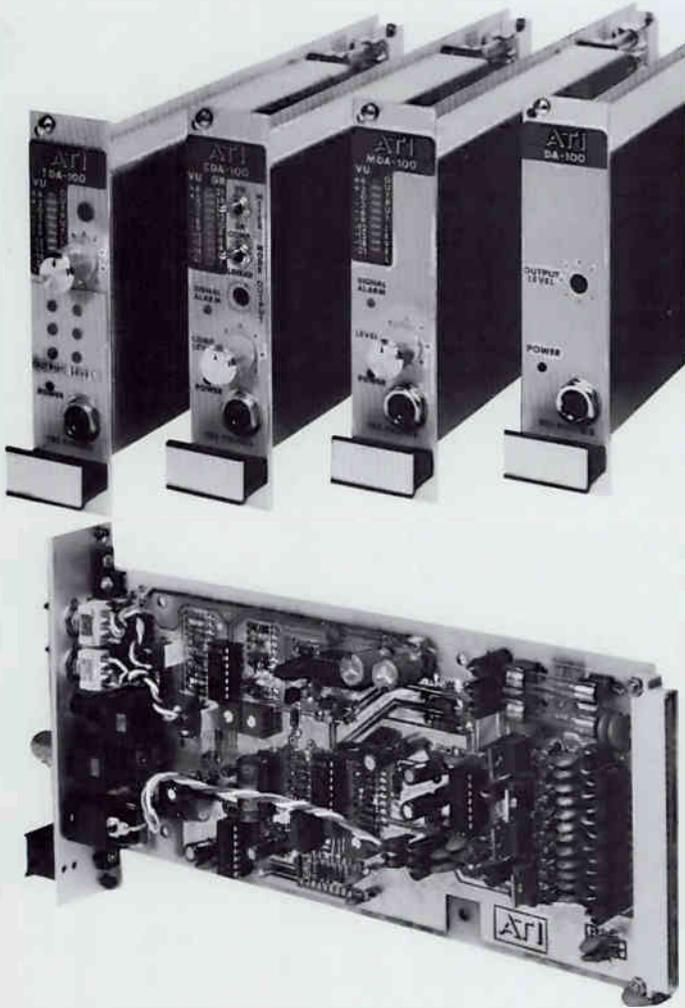
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# DA10000 Distribution Amplifiers



## DA100

### Basic One In, Six Out Distribution Amplifier.

Single power stage drives six active balanced outputs at +22dBm each. Split and by-passed build-out resistors give protection against shorts and RF. Balanced bridging input. Single panel level control sets all outputs. Headphone monitor jack.

## MDA100

### Metered One by Six Distribution Amplifier.

Adds a 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 One by Six Distribution Amplifier.

Adds a Gated Compressor to the MDA100. Controls 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 Six Output Distribution Amplifier.

Six Transformer (-1) or active Balanced (-2) outputs. Individual trimmers provided for each output along with a Master Level control. Headphone output.

## MIDA100

### Metered Independent Output Distribution Amplifier

Six Transformer (-1) or Active Balanced (-2) outputs with independent level controls. LED Bargraph meter switchable to all outputs.

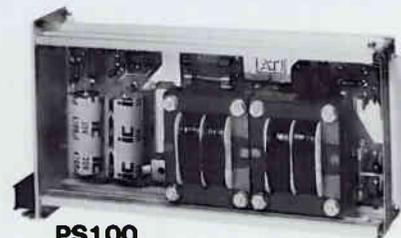
## Which is best in your system?

### 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 rack frame. Front panel LEDs indicate low voltage and blown fuses. Power Failure Alarm relay contacts close for any power loss and can activate external alarm. Dual power transformers in each module run cooler and generate minimal hum field. 115 and 230 VAC operation.

### RM100 Rack Frame

Mounts ten amplifier modules and two power modules in a 5 1/4" high by 19" wide Eurocard specification enclosure 14 1/2" deep. All modules plug in from the front, 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 air flow. The basic frame includes power bussing for all positions. Individual modules include mating connector assemblies which mount on the rear of the card frame and plug into the power bus. Connector assemblies provide barrier block connections with fanout strips for studio wiring, consult factory for alternate insulation displacement, mass termination connector systems which allow simple plug-on audio connections.



PS100



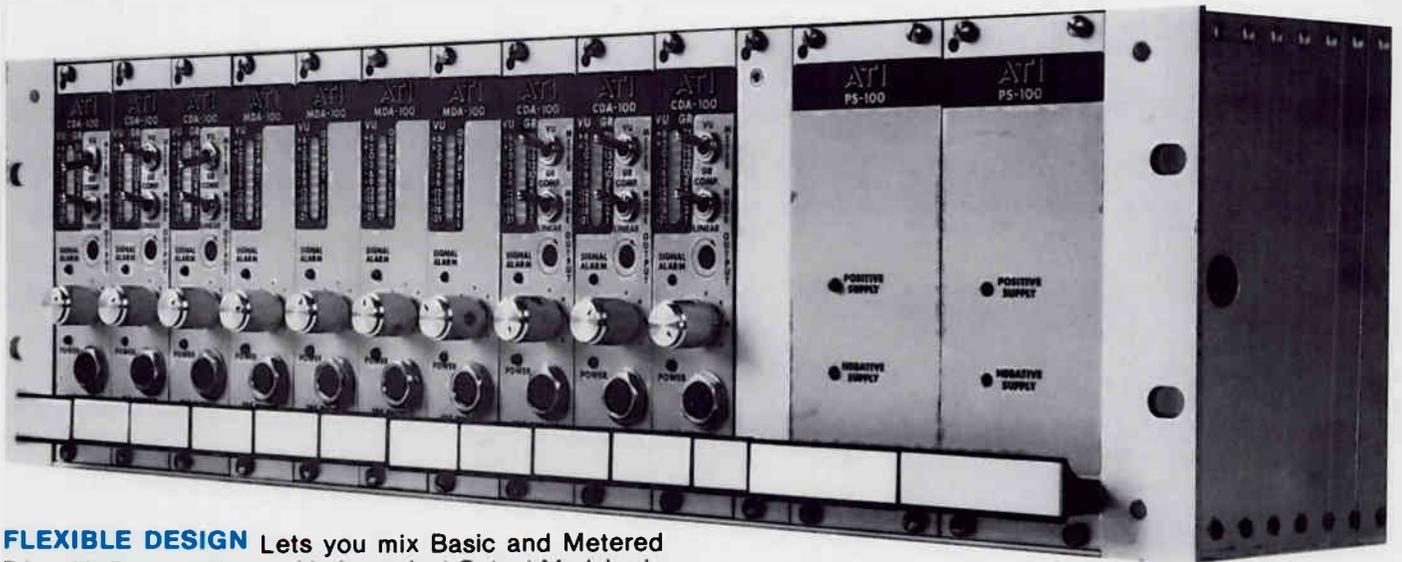
Barrier Block



Mass Termination Plug

Mating Connector Assemblies

# Sound reasons to specify ATI



**FLEXIBLE DESIGN** Lets you mix Basic and Metered DAs with Compressing and Independent Output Modules in the same enclosure to optimize your system performance.

**EFFICIENT PACKAGING** Ten Amplifier Modules and two Power Supplies plug into a Eurocard Spec enclosure. You can assemble up to a 10 in by 60 out Distribution System in only 5- $\frac{1}{4}$  inches.

**RF PROTECTED** All input, output and power lines are fully by-passed. Double ground plane PC board shielding with an additional top formed shield cover on each module protect low-level circuitry from direct pick-up. AC line filtering and nonconcentric wound transformers prevent power line transient and RF feedthrough.

**CLEAN AND QUIET** Extremely low distortion, high slew rate design eliminates the irritating harshness of TIM distortion. Typical 100 db dynamic range is ideal for distributing digital satellite feeds.

**RELIABLE BY DESIGN** Dual Power Supplies share the load and provide complete back-up in case of failure. Dual AC inputs allow redundant input power back-up from separately fused AC lines. Power Failure Alarm contacts and status LEDs warn of problems. Each plug-in module is separately fused, regulated and short protected.

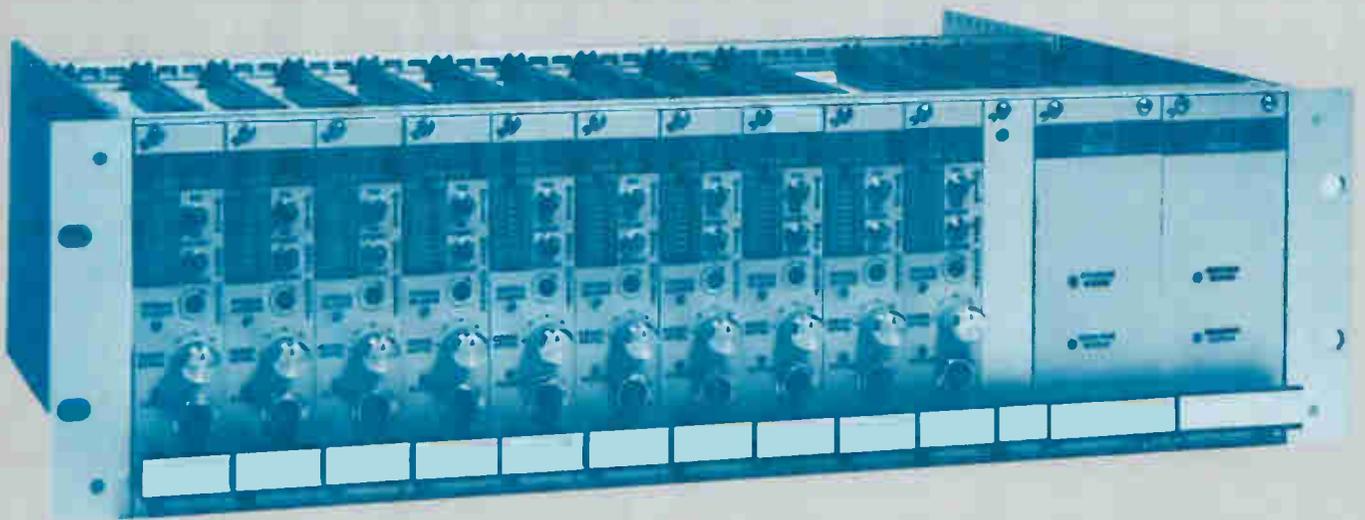
**COOL OPERATION** Distributed Power regulation on each amplifier module minimizes localized heat build-up in the power supplies. Module power components exposed for optimum convection cooling.

**ATTRACTIVE AND SAFE** Closed front panel design with reverse printed polycarbonate overlays looks great even after years of wear. Write-on label fits in module handle.



**EASY INSTALLATION** Barrier blocks with fanning strips for easy pre-wiring are standard. Also available with wire-wrap posts for AMP or PANDUIT insulation displacement plugs.

# Micro Amp Series<sup>TM</sup>



**DA-10000**

**MODULAR  
DISTRIBUTION  
AMPLIFIER  
SYSTEMS**



**AUDIO  
TECHNOLOGIES  
INCORPORATED**

Dedicated to sound engineering

# Vanguard Series™



**BC8DSR**

**\$2995.**

**BC8DSL**



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NEW PRODUCT ANNOUNCEMENT

Vanguard Series™

# BROADCAST AUDIO CONSOLES

**Performance, Value and Reliability  
through  
Innovative Technology**

- Raised, silent, tactile feedback, back lighted membrane switch control panel, digitally scanned and stored. Five color graphics are protected by a seamless rugged poly-carbonate overlay.
- 12 Stereo inputs to eight mixers with optional 5 x 2 input expander. Gain switched, high level Instrumentation Amplifier inputs accept +4, -10 or -20dBm nominal levels with excellent common mode hum and RF rejection.
- Two mono mic. preamps with internal pan pots are standard and may be wired to any input. Additional preamps (2) or full stereo preamps are optionally available.
- All Faders and level controls drive DC operated Voltage Controlled Amplifiers (VCA). Economical AB type J rotary faders and smooth operating linear faders standard, Penny and Giles faders optional.
- Dual, Stereo +22dBm program outputs with two switched analog VU meters or optional four channel, two color vacuum fluorescent bargraph output display.
- Five watt cue speaker and headphone amplifiers.
- Control Room and Studio muted monitor outputs for external optional power amplifiers.
- Modular amplifiers plug-in to mother board interconnection system.
- Easy installation using punch-block type insulation displacement connections. Panel hinges forward 180° for full access.
- Effective RF protection. External power module minimizes hum and isolates power line conducted RF pickup.
- Traditional ATI quality and performance.

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# Studio Metering Systems

## DESCRIPTION

Economically display all your important signal lines and check critical levels at a glance. Brilliant, three color, sixteen segment LED displays are visible even across brightly lit studios. Compare average and peak levels with simultaneous VU and PPM indications. Continuous VU bargraphs cover -20 to +5VU and bright moving dot PPM type indicators cover +1 to +8VU.

Balanced, RF bypassed, 40Kohm inputs bridge signal lines with no loading and are switchable in stereo pairs for nominal 0VU indications at -10, +4 or +8 dBu line levels.

One, two, three or four stereo pairs (up to eight channels) mount in a standard 19 inch EIA rack 3.5 inches high, 7 inches deep and weigh under ten pounds.

All input connections are through rear barrier strip terminals and are supplied with fanout strips for easy prewiring and quick change servicing.

Units operate from 115/230VAC, 47-63Hz and require only 25 VA.

---

## MODELS AVAILABLE

- VU200** One stereo pair, single centered mount
- VU400** Two stereo pairs, symmetrically mounted.
- VU600** Three stereo pairs, center and end mounted
- VU800** Four stereo pairs, symmetrically mounted.

---

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One year limited warranty

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# Studio Metering Systems

**VU200, VU400, VU600, VU800**

# Specifications

DA-10000  
MODULAR  
DISTRIBUTION  
AMPLIFIER  
SYSTEM

Specifications reflect performance in a typical DA10000 System consisting of ten mixed Distribution Amplifier modules and two PS100 Power Supplies mounted together in a RM100 Rack Frame.

<b>Nominal Output Level</b> at OVU Meter Indication	+4dBm, Balanced, 600 ohms.	<b>Metering</b> MDA100, CDA100, MIDA100 only	Ten segment LED Bargraph. Range -21 to +6 VU at 3db/step, 0 VU adjustable 0 to +18dBm.
<b>Output Clipping Level</b> All 60 outputs driven.	+22dBm, 600 ohms	<b>Headphone Output</b>	10Vrms to 600 ohm head- phones.
<b>Distortion</b> at +20dBm output.	.25% THD, 30 to 20,000 Hz. .10% IMD, SMPTE Measure- ment.	<b>Gain</b>	24 db nominal, 54 db for CDA 100.
<b>Crosstalk</b> at 10Khz, adjacent modules.	70 db below nominal output.	<b>CDA100 Compressor</b>	
<b>Output Hum and Noise</b> Any module position, 24 db gain, 20 KHz measurement bandwidth.	80 db below nominal output.	Input Threshold Level	-30 dBm, adjustable upward.
<b>Frequency Response</b>	+0, -25db, 30 to 20,000 Hz.	Attack Time	50 mSec
<b>Input Impedance</b>	10Kohm, balanced differen- tial. Protection diodes and bypasses.	Release Time	5 Sec nominal, 2 to 20 Sec with component change.
<b>Input Hum Rejection</b> Common Mode, 60 to 120 Hz.	80 db, factory adjusted.	Compression Hold Threshold	Input must drop 20 db below comp. threshold for longer than .25 Sec.
<b>Signal Alarm Threshold</b>	Detects on signal dropouts of 30db below 0 VU, longer than 1/4 Sec.	Recovery Time, to release Compression Hold	1mSec. Typical
<b>Signal Alarm Output</b>	CMOS FET Switch to .025 posts with mating plug. May be paralleled to activate common alarm.	<b>Power Requirements</b>	115/230 VAC $\pm$ 10% 47-63 Hz.
<b>Power Failure Alarm</b>	N.C. Reed Relay contacts held open only if both power supply outputs are above 12 VDC. May be paralleled to activate a common alarm.	<b>Size</b>	
		Rack Frame	5 1/4"H by 19"W by 14 1/2"D
		Amplifier Modules	Eurocard format, 100 mm X 220mm. 1.2 inch panel width.
		Power Supply Module	Eurocard Format, Extruded Frame, 2.0 inch panel width.
		<b>Accessories</b>	
		BP100-1	Blank Panel, replaces miss- ing 1.2 inch amplifier module.
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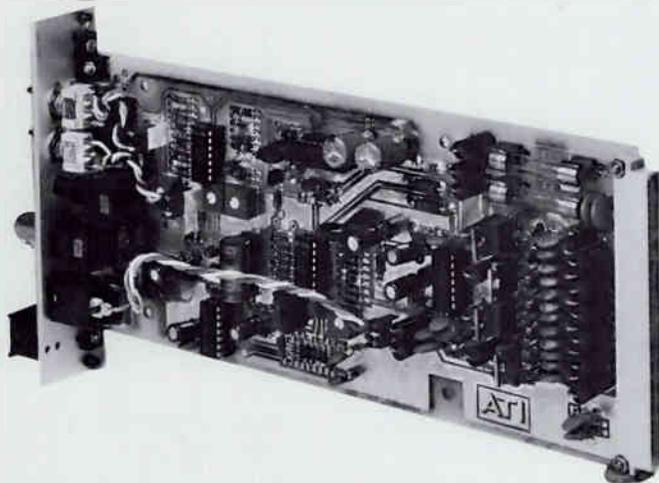
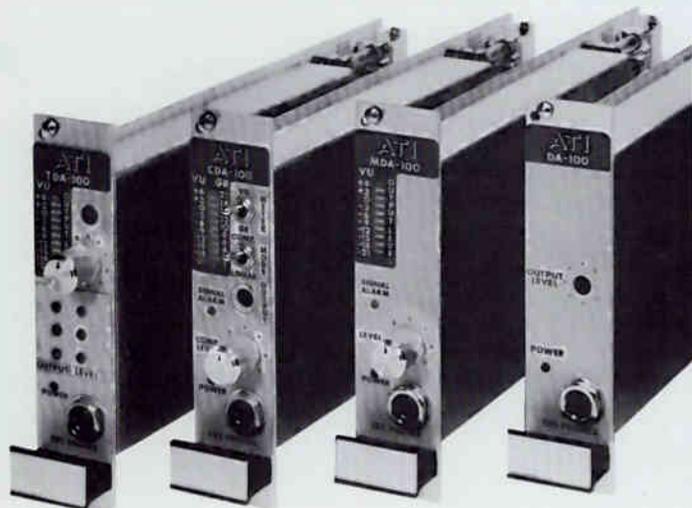
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# DA10000 Distribution Amplifiers



## DA100

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Single power stage drives six active balanced outputs at +22dBm each. Split and by-passed build-out resistors give protection against shorts and RF. Balanced bridging input. Single panel level control sets all outputs. Headphone monitor jack.

## MDA100

### Metered One by Six Distribution Amplifier.

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Six Transformer (-1) or active Balanced (-2) outputs. Individual trimmers provided for each output along with a Master Level control. Headphone output.

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## Which is best in your system?

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### RM100 Rack Frame

Mounts ten amplifier modules and two power modules in a 5¼" high by 19" wide Eurocard specification enclosure 14½" deep. All modules plug in from the front, 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 air flow. The basic frame includes power bussing for all positions. Individual modules include mating connector assemblies which mount on the rear of the card frame and plug into the power bus. Connector assemblies provide barrier block connections with fanout strips for studio wiring, consult factory for alternate insulation displacement, mass termination connector systems which allow simple plug-on audio connections.



PS100



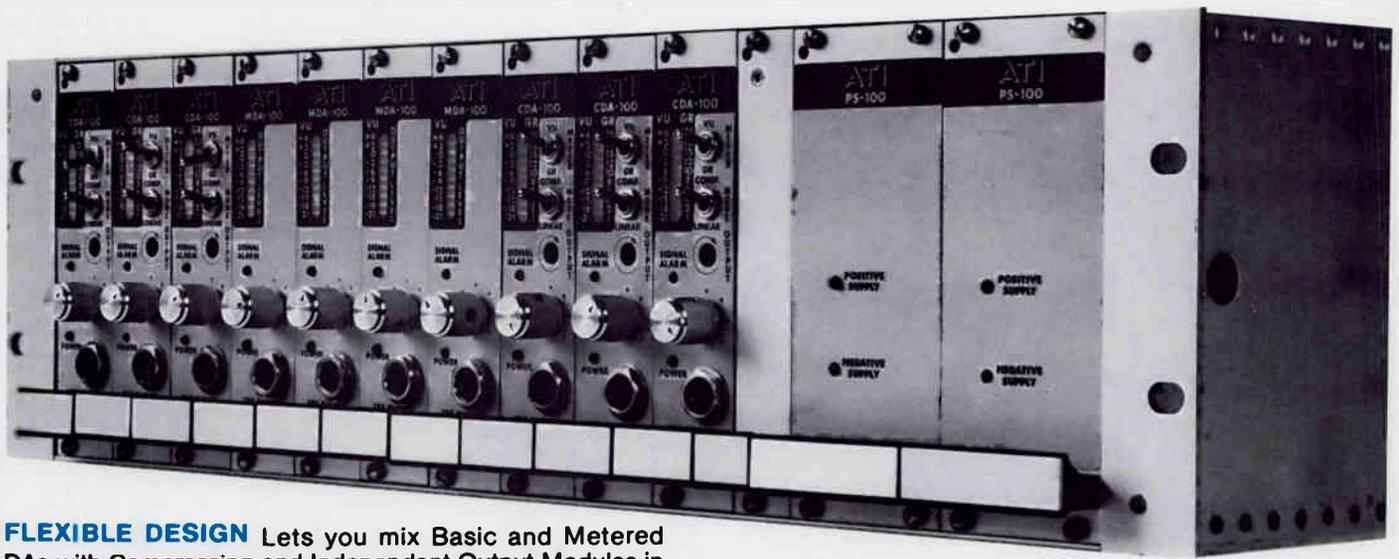
Barrier Block



Mass Termination Plug

Mating Connector Assemblies

# Sound reasons to specify ATI



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**RF PROTECTED** All input, output and power lines are fully by-passed. Double ground plane PC board shielding with an additional top formed shield cover on each module protect low-level circuitry from direct pick-up. AC line filtering and nonconcentric wound transformers prevent power line transient and RF feedthrough.

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**COOL OPERATION** Distributed Power regulation on each amplifier module minimizes localized heat build-up in the power supplies. Module power components exposed for optimum convection cooling.

**ATTRACTIVE AND SAFE** Closed front panel design with reverse printed polycarbonate overlays looks great even after years of wear. Write-on label fits in module handle.



**EASY INSTALLATION** Barrier blocks with fanning strips for easy pre-wiring are standard. Also available with wire-wrap posts for AMP or PANDUIT insulation displacement plugs.

# Micro Amp Series™



**DA-10000**

**MODULAR  
DISTRIBUTION  
AMPLIFIER  
SYSTEMS**



**AUDIO  
TECHNOLOGIES  
INCORPORATED**

Dedicated to sound engineering

## Specifications

**Mixers** Eight, rotary or linear faders, DC operated DBX VCAs, Digital output bus selection.

**Inputs** Twelve stereo hi-level inputs. Two mono microphone preamps with PAN pots are factory wired to the hi-level inputs of mixers 1 and 2. Additional pairs of microphone preamps available as MIC option to feed any other hi-level inputs. Muting available on all inputs with jumper plug programming. Input Expander option (EXP) increases input capacity to 20 stereo lines.

**Outputs** Six active balanced program outputs; Left, Right and Mono Sum for both PGM1 and PGM2 busses. Nominal output +4dBm at OVU, adjustable 0 to +8dBm.

**Meters** Two analog VU meters standard, switchable between PGM1 and PGM2 stereo outputs. Vacuum fluorescent display option (VFD) monitors both stereo program outputs continuously on dual, stereo, 14 segment, two color displays with peak storage.

**Monitor** Stereo, muted monitoring outputs at +4dBm or -10dBu (.25V) drive optional external control room and studio speaker power amplifiers (MON). DC controlled selection of PGM1, PGM2 or external OFF-AIR input. VCA level control.

**Phones** Stereo headphone amplifier drives +22dBm into 600 ohm phones. DC controlled selection of PGM1, PGM2 or CUE. VCA level control.

**Cue** A mono-sum, post-fader cue output is available from all mixers to drive a muted 6 Watt amplifier and internal cue speaker. VCA level control.

## Input Levels and Impedances

**Hi-Level Inputs:** 12 active balanced instrumentation amplifiers, balanced 20,000 ohm impedance, RF bypassed and jumper plug programmable for nominal input levels of +4, -10 or -20dBm. Clipping input +26dBm, overdrive causes only clean clipping with no hang-up or phase reversal. CMR adjustments for 60dB hum nulls. Equivalent Input Noise (EIN) is -92dBm for a 20kHz bandwidth.

**Microphone Inputs:** Two active balanced, low noise instrumentation amplifiers with servo loop operating point stabilization. Inputs are balanced 10,000 ohms, AC coupled and protected from transients and RF with diode clippers, ferrite suppressors and capacitive bypasses. The two 40dB mono preamplifiers each feed PAN pots for adjustable L/R split to following stereo hi-level inputs. Nominal input -50 or -60dBm, dependent on gain setting of hi-level input. Maximum input is -21dBm. EIN is -124dBm for a 150 ohm source resistance and a 20,000 Hz measurement bandwidth.

**Off-Air Monitor:** Unbalanced, 10,000 ohms, -10dBu (.25V) nominal.

**Gain MIC** input to PGM output, 98dB minimum. HI-LEVEL input to PGM output, 58dB minimum.

**Output Level and Distortion** MIC or HI-LEVEL inputs to PGM output at +18dBm. THD .15% maximum, 20 to 20,000Hz. IMD .15% maximum, SMPTE method. Clipping outputs, +26dBm Stereo PGM, +20dBm Mono PGM.

**Frequency Response** MIC or HI-LEVEL inputs to PGM, Monitor or Phones  $\pm .25$ dB, 20 to 20,000Hz.

**Signal to Noise Ratio** MIC to PGM, 74dB min. below nominal +14dBm output with -50dBm

available power input for typical proof measurements with 20,000Hz measurement bandwidth.

HI-LEVEL to PGM, 95dB min. below nominal +14dBm output with +4dBm line input and normal control settings.

**Crosstalk** -74dB into any PGM output when driving any other PGM output to +14dBm output at 10,000Hz. Gain set for +14dBm out with -50dBm MIC input.

**Power** 115/230 VAC,  $\pm 10\%$ , 50/60Hz, 250 VA maximum. External fused power module feeds console regulators.

## SIZE

**Console** 23½"W by 18¾"D by 8"H, 16½ lbs.  
**Power Module** 8½"L by 7"W by 3"H, 7 lbs. 8" keyhole mounting centers, 8 ft. interconnecting cable. Total shipping weight 35 lbs.

## Ordering Information

Model	Description
BC8DSR	Console, Dual Stereo, Eight Rotary Mixers
BC8DSL	Console, Dual Stereo, Eight Linear Mixers
-VFD	Option, Dual Vacuum Fluorescent Displays
-EXP	Option, Input Expander Switches, 10 by 2
-SSS	Option, Start and Stop Switches, 4 each.
-MIC	Option, Dual Mono MIC preamplifier board.
-RLY	Option, Dual Tally and Muting relay board.

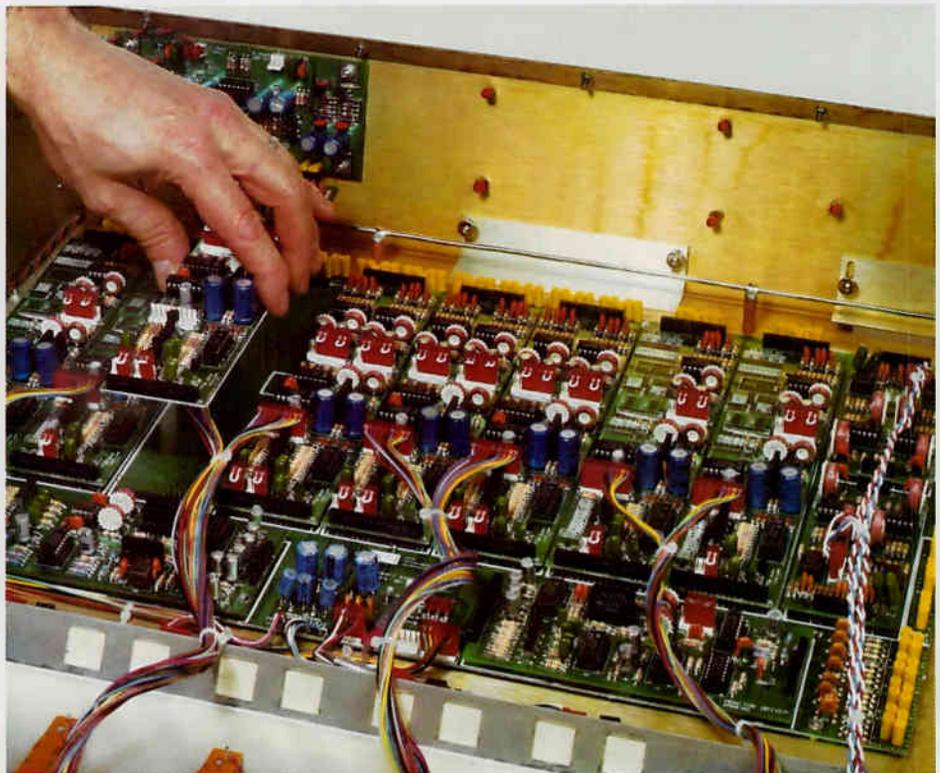
All Specifications subject to change at the discretion of the manufacturer.  
Equipment manufactured in U.S.A.  
One year limited warranty.



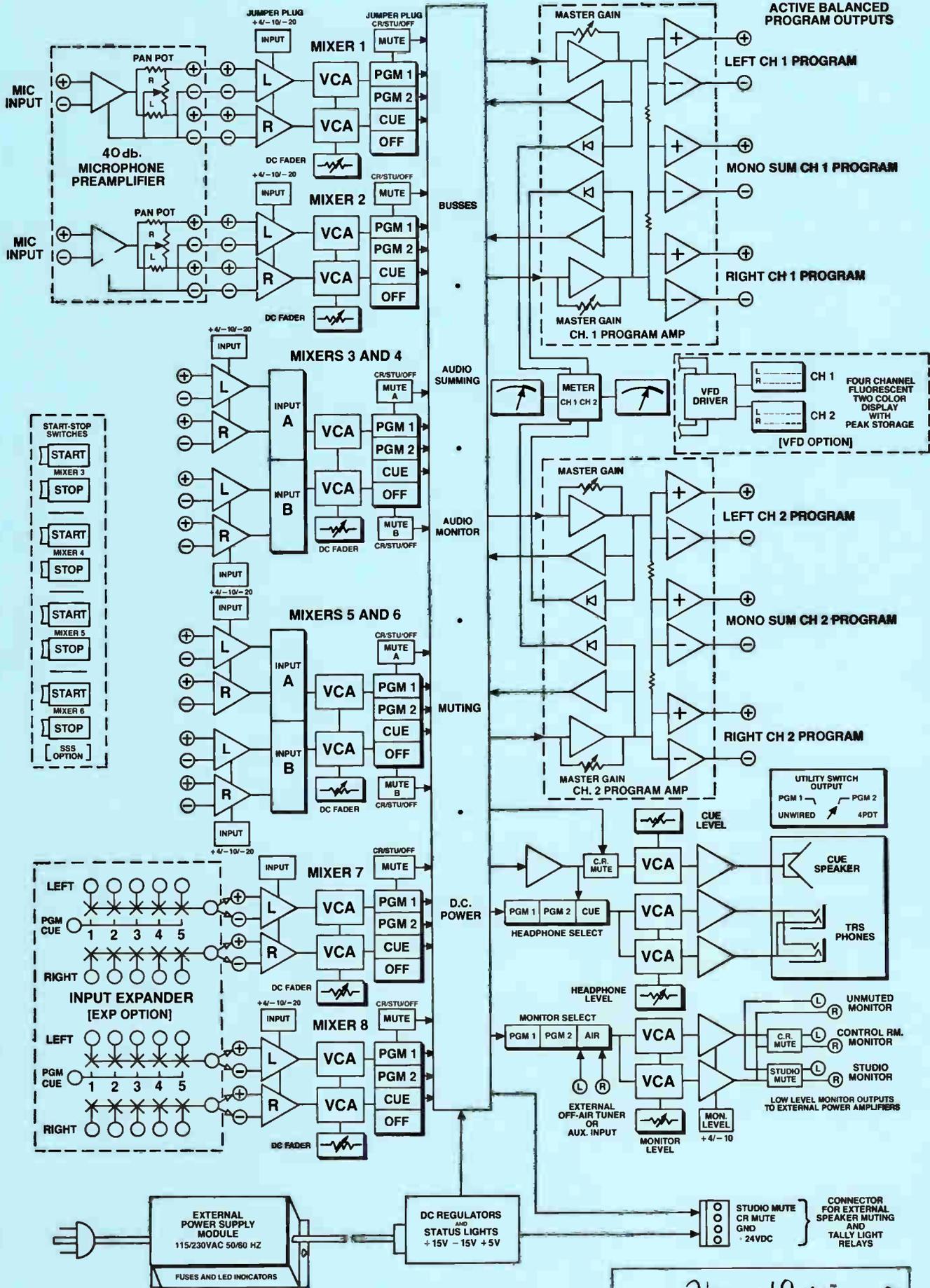
## AUDIO TECHNOLOGIES INCORPORATED

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Represented by:



Modular plug-in construction



Vanguard Series  
**FUNCTIONAL BLOCK DIAGRAM**



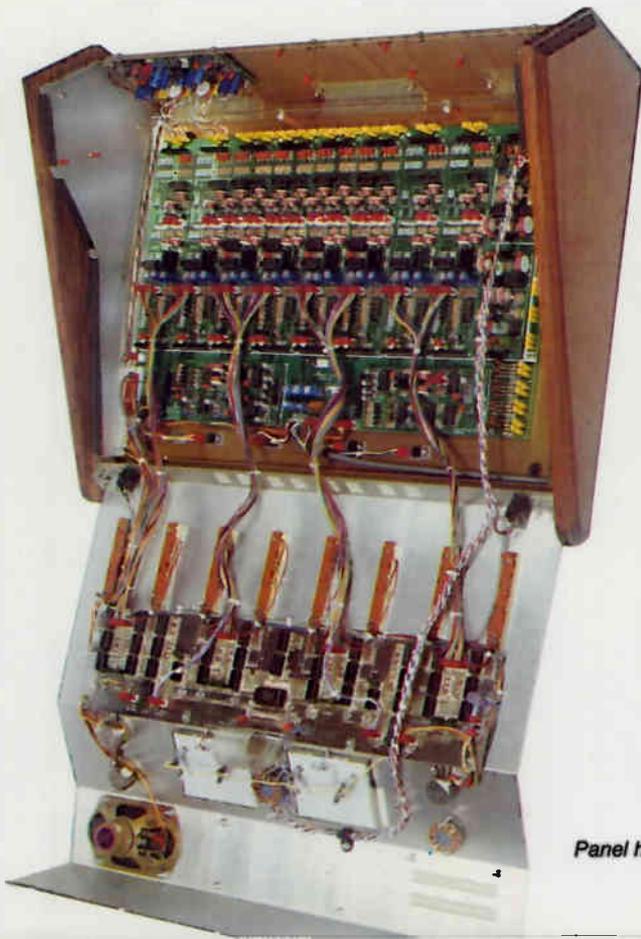
BC8DSR



BC8DSL

# Vanguard Series™

## Consoles from ATI



Panel hinges forward for maximum accessibility

Vanguard Series Consoles represent a unique value in broadcast boards. Starting with a clean slate, every aspect of the console design process has been rigorously evaluated to find better and more cost effective alternatives. A digitally scanned matrix of long life membrane switches replaces conventional trouble prone pushbutton and lever key switches for input selection and bus assignment. Logic controlled, current mode FETs switch all audio with no wearout, feedthru or noise. DC operated VCAs used for all level control functions eliminate the need for expensive audio faders.

Unique circuit designs provide superior audio performance and allow jumper plug gain programming for optimum matching of input and output levels to your particular requirements.

The elimination of all program audio from the panel improves RF immunity and allows a compact and simple console package unmatched for accessibility and economy. A four layer mother-daughter circuit package with alternate layers of ground plane shielding forms a fully modular and repairable shielded audio system with none of the labor intensive and failure prone hand wiring of traditional consoles.

All studio wiring is made directly to the motherboard with high reliability, easy to use punch down type connectors which require only a phillips screwdriver to assure correct wire insertion.

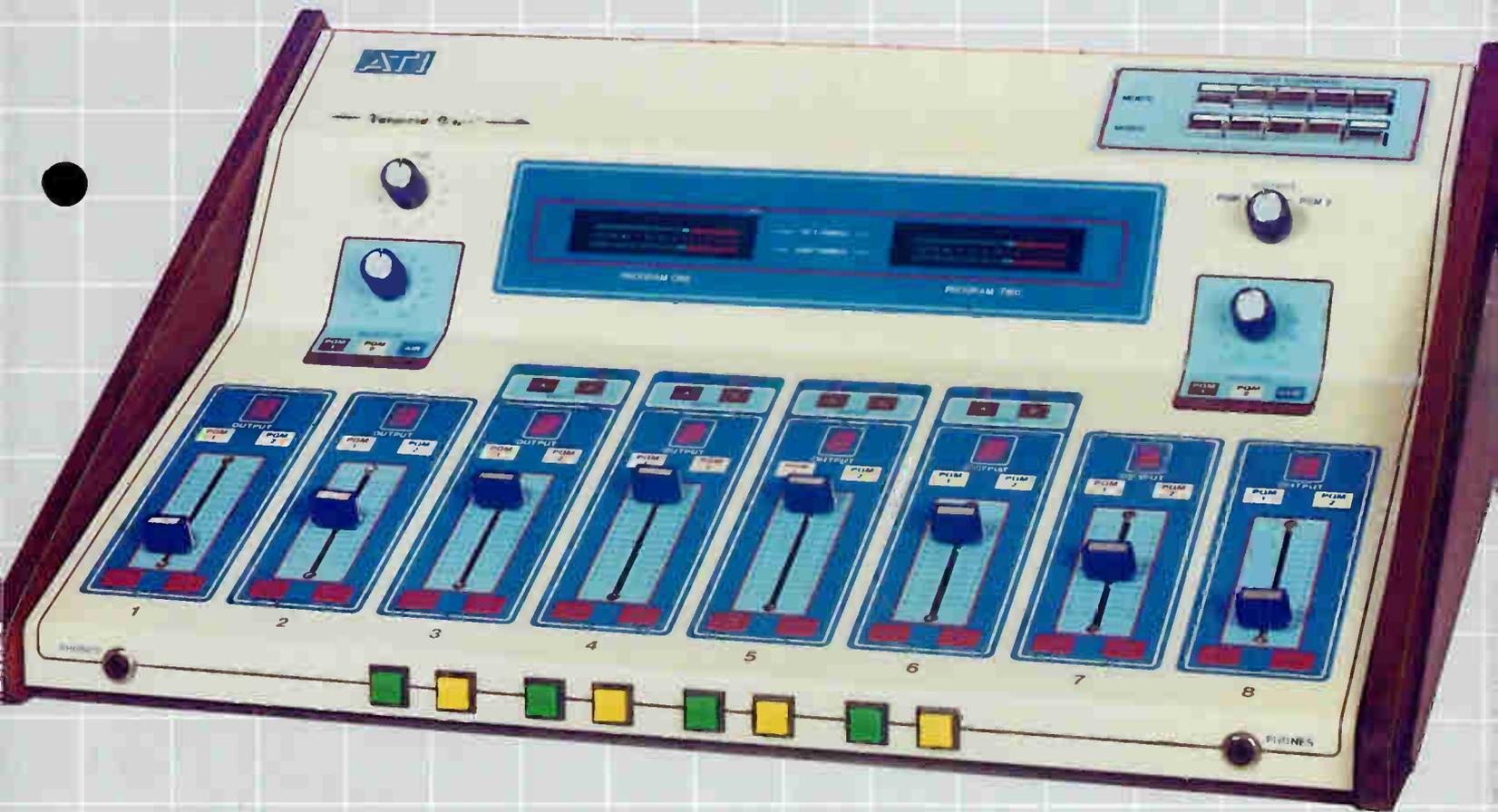
A Vanguard Series console will provide you with exceptional performance and a long trouble-free life in the most demanding control room or production applications.

- Eight mixers, Rotary or Linear Faders.
- Dual Stereo plus Dual Mono Program Outputs.
- 12 Stereo inputs to 8 mixers plus optional 5 by 2 expander.
- HI-Level instrumentation amplifiers accept  $-20$ ,  $-10$  or  $+4$ dBm inputs with excellent hum and RF rejection.
- Two mono microphone preamps with internal PAN pots standard. Low noise instrumentation amplifiers with DC servo stabilization. Additional preamps optional.
- Programmable muting for every input.
- Two switched analog VU meters standard. Optional four channel, two color vacuum fluorescent bar graphs.
- Three input monitor selector provides muted outputs for external optional power amplifiers.
- Three input headphone selector and amplifier.
- Built in cue amplifier and speaker.
- Membrane switch locations are raised by embossing to allow easy touch location in the dark. Stainless steel domes above each switch provide silent tactile feedback. Five color graphics are protected by a seamless, rugged polycarbonate overlay. LEDs indicate all operations.
- All faders and level controls drive DC operated VCAs. AB type J pots and smooth acting linear faders.
- Modular audio package of horizontal mother-daughter boards. Gold to gold AMP connectors. Three layer RF shielding.
- External unregulated power module isolates power line disturbances and blocks conducted RF. Power supply status indicators.

# Vanguard Series™

## Broadcast Consoles

Performance, Value and Reliability  
through Innovative Technology



**AUDIO  
TECHNOLOGIES  
INCORPORATED**  
Dedicated to sound engineering

# Matching

Level Matching Interface Systems / IHF to 600 Ohms

## Problem:

Consumer and semi-pro audio equipment can offer good performance and plenty of bells and whistles for the price. Unfortunately RF pickup, crosstalk, high frequency rolloff, hum loops and distortion often result from long cable runs or the direct connection of their low level, high impedance IHF phono jack inputs and outputs into 600 ohm studio and broadcast systems. Much of today's video equipment shares similar problems.

## Match-Maker

### MM100 Bi-Directional Stereo Interface

Use the MM100 for record-playback applications interfacing audio or video cassette recorders and also for input-output matching of Equalizers, NR units, Reverbs and Mixers. Jumper the IHF jacks to make a dual line amp, two output DA or a two input summing amp and stereo combiner. Rugged shielded enclosure, shelf mount brackets, accessory 1 3/4" rack panel mounts two, XLRs.



## Solution:

The Match-Maker and Disc-Patcher Interface Systems match all levels and impedances between unbalanced phono jacks and balanced 600/150 ohm systems. Equally important, they allow complete output ground isolation of consumer line operated equipment to avoid creating RF and hum inducing ground loops back through the power system. Only a true transformer coupled output can provide the required isolation to do the job and only ATI's unique drive circuitry does the job with none of a transformer's usual limitations.

## Disc-Patcher

### DP100 Uni-Directional Stereo Interface

The DP100 is designed to invisibly interface digital compact disc playback units with absolutely no reduction of the superb performance available from the digital system. Equally at home on a newsroom desk, use the Disc-Patcher to patch ENG cassette recorders into your system for dubbing. RF proof, shielded internal power supply, shelf or dual rack mount, XLR out.



Free detailed brochures with full specifications on each of the Problem Solvers are available direct from ATI or through your local ATI dealer. In a hurry? We will FAX them. Call ATI at (215)443-0330 with any questions.

## Represented by:

Distributed  
by...

### ELECTRONIC INDUSTRIES, INC.

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AUDIO TECHNOLOGIES INC.  
328 W. Maple Avenue, Horsham, PA 19044  
(215)443-0330 • FAX (215)443-0394



# Switching

## Micro Meter™

**VU1000**

**Eight Line Switcher,  
Meter and Monitor Amplifier**



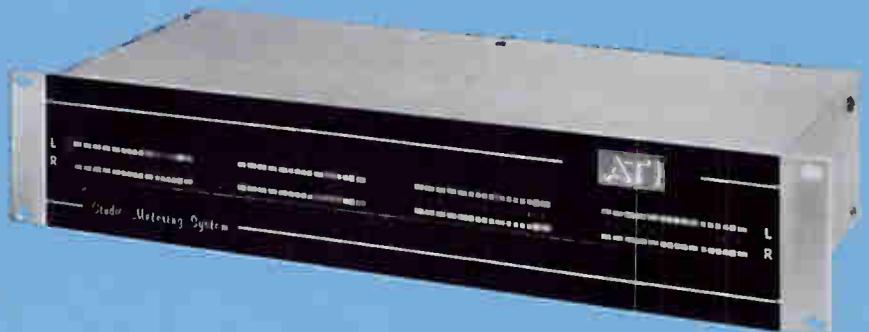
Capable of many functions, use the VU1000 as an input line selector to an audio or video recorder, a remote line selector into your console and for general metering and monitoring of critical signals. Eight balanced bridging inputs are panel and remotely selectable to feed a LED bargraph meter with both VU and PPM ballistics plus a balanced line output and a headphone jack. A range switch sets the reference line output and 0VU indications for five input levels from -10 to +18dBm. An optional built-in 6 Watt power amplifier drives external speakers. Interconnect two for slaved stereo switching. Desk and half rack mount.

# Metering

## Micro Amp Series™

**VU800, VU600,  
VU400, VU200**

**Studio Metering Systems  
Electronic Security Blanket**



Give yourself that warm, secure, all-is-well feeling by economically displaying all your important signal lines simultaneously. Know at a glance where your signals are (or are not). Display one, two, three or four stereo lines (eight channels) on bright, three color, sixteen segment, LED bargraphs with simultaneous VU and PPM indication. Balanced, bridging inputs are switchable for 0VU at -10, +4 and +8dBm line levels. Wide range, backlit scale, compact 3 1/2" rack mount.

# Matching

## Encore Series™

**MLA400, MLA 800  
Four or Eight Line Amplifiers  
MMA400, MMA800  
Four or Eight Mike Amplifiers**

**Multiple Amplifier Arrays**



Four or eight individual channels to boost either microphone or line level balanced inputs up to +24dBm, 600 ohm line levels with either active or transformer balanced outputs. Use as microphone, line buffer, IHF interface, audio distribution and level matching amplifiers. Drive headphones or interface phone lines. Combine channels with rear connector jumpers to form stereo summing networks, DAs, simple mixers or even a press box. Adjustable gain, up to 82dB mic and 42dB line. Low noise and distortion, ruler flat response. Barrier block terminals, 1-3/4" rack mount. Accessory XLR in-out panels available.

# Phono

## Micro Amp Series

### P1000 Stereo Turntable Amplifier

#### Golden Ears? Impress Them!

You will be amazed at how well a really effective subsonic filter can clean up the rest of your audio chain. Flat to 30 Hz, down 30 dB by 7 Hz, it blocks those high amplitude record warp and seismic signals that can saturate downstream transformers and cause intermod distortion in high level circuitry. Push button high boost and cut filters allow you to brighten a muddy recording or reduce stridency. DIP switch cartridge loading, precision 1/4dB equalization, low noise and more headroom than the physics of disk cutting will ever require make this preamp an exceptional performer. Desk, cabinet and rack mounting.



# Processing

## EmphA Sizer™

### EM1000 An Addictive Mike Processor

Make the Chairman of the Board sound like Lee Iacocca, call down fire and brimstone without feedback and make radio jocks sound as big as their egos with this powerful processor. A voice operated gate allows safe hands-free mike control and a gated compressor-limiter rides gain without annoying background noise buildup. Four sections of switchable full range parametric equalizers can be combined to notch out room resonances or turn your mild mannered telephone reporter into superman. Mike and line level in and out. Desk or half rack mount.



## Encore Series™

### P100 Stereo Turntable Amplifier

#### Your best choice for a tough RF environment.

No pretty paint or shiny pushbuttons but an economical, RF proof package wrapped around high performance circuitry makes this preamp our best seller. A subsonic warp filter, DIP switch R and C cartridge loading, precision 1/2dB equalizer, low noise front end and a line isolated active balanced output makes this preamp your best buy.



# Monitoring

## Micro Amp Series™

### MA1000 Stereo Power Amplifier

#### Our "Crowning" Glory

An honest 10 Watts per channel stereo or 25 Watts in mono bridged mode makes an economical headphone amp or monitor driver for small studios. Also makes a great balanced output distribution amplifier capable of driving over eighty 600 ohm loads at +24dBm. Front panel mono/stereo switch, level controls and a headphone jack, professional balanced bridging inputs and complete electronic output protection in a tiny but rugged half rack package. Mount four 10 Watt mono channels in only 1 3/4".



# Micro Amp Series

## DA10,000 Mix and Match Modular Distribution System

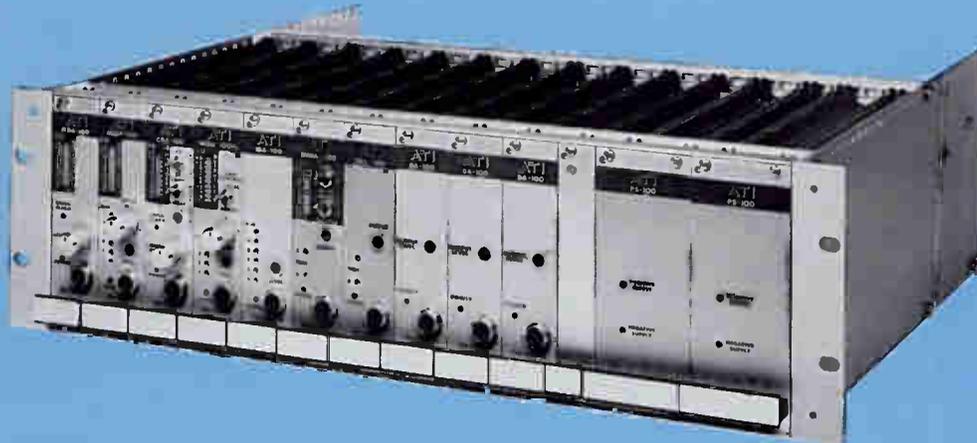
### Ten Amplifiers plus Dual Power Modules

Mix our interchangeable DA modules to precisely match your system requirements. From low cost 1X6 active balanced, power splitting types you can easily upgrade to metered outputs, remote level controls and wide range compressors for critical lines.

Stereo 2X8 modules feature a trimmable ganged level control, switch selection of L, R or L+R summed outputs plus optional L, R and L+R bargraph metering of inputs and outputs.

Transformer output 1X6 models with optional input and output metering allow trimming of each output to meet your particular level matching needs and provide complete ground isolation for driving long lines.

Headphone jacks on all modules allow a quick signal check. Backup, alarmed, load sharing power supply modules with separate fusing and regulation in each amplifier module minimize localized heat buildup and yield the highest system reliability. Barrier blocks with pre-wirable fanning strips or punch block type rear connectors make installation a snap!



### System Components

DA100	1X6 Power Splitting DA, Low Cost, High Output.
MDA100	1X6 Power Splitting DA, Bargraph Output Meter.
CDA100	1X6 Power Splitting DA, Gated Recovery Compressor.
SDA200	2X8 Power Splitting DA, Stereo, L, R or L+R Outputs.
SMDA200	2X8 Power Splitting DA, Metered L, R or L+R Outputs.
IDA100-1	1X6 Transformer Output DA, Independent Adjustments.
MIDA100-1	1X6 Transformer Output DA, Switchable Bargraph Meter.
MIDA100-1RC	1X4 Transformer Output DA, Remote VCA Level Control.
PS100	Power Supply, Diode Isolated Outputs, Failure Alarm.
RM100	Rack Mount, Holds Ten Amplifiers and Two Power Modules.



# Distribution

## Audio Distribution Amplifiers

For every application and every budget. Avoid RF and hum pick-up problems from noisy, lossy splitters. Prevent hard-to-find shorts from multiple taps on critical lines. Boost low console outputs. Drive long lines. Eliminate rolloffs and distortion from mismatched load impedances. All ATI DAs are rack mounting and use reliable barrier block connectors with fanout strips for easy prewiring and quick change servicing.

### Micro Amp Series™

DA1000 — 1 X 8

DA2008 — Dual 1 X 4

#### Premium Performance — High Output

A single, high output, active balanced driver per channel is resistively split into 4 or 8 outputs each, all driven at precisely the same level. Up to +24dBm balanced in and out. Features output clipping LEDs and a headphone/metering jack in a half rack package that you can mount singly or side-by-side in only 1-3/4".

DA1008 — 1 X 8

DA2016 — Dual 1 X 8

#### An Industry Standard

Easily match differing line level requirements with these high output DAs with 8 or 16 individually adjustable outputs. Active and transformer balanced outputs at +22 or +30dBm. A LED meter with three selectable 0VU settings allows you to set nominal line levels and monitor peak headroom. Includes input clipping LEDs and a boosted headphone output. Our top-of-the-line unit for your most demanding applications. Rack mounts in only 1-3/4".

### Encore Series™

DA208 — Dual 1 X 4

DA416 — Quad 1 X 4

#### Minimum Cost, Maximum Versatility

A small price to pay for real protection. Two or four inputs, each driving four individually adjustable, active balanced outputs gives you twice the performance for the price — twice the performance in most applications. Need more outputs? Just parallel inputs for up to 1X16 operation. Drive everything from balanced 600 ohm lines to Hi-Z IHF phono jack inputs without matching pads or noise compromises. Transparent performance, RF protected. Our best seller — your best buy.



# Mike

## Ultimike™

### M100

#### Microphone Amplifier

##### *Clean up your act!*

Eliminate dimmer noise, RF pickup and hum loops in long low-level cable runs by mounting this small, rugged, full featured preamp close to the audio source. The unusually quiet, direct balanced, instrumentation amplifier input has impressive hum and RF rejection and a 0dBu maximum mike input level prevents overload. Features switchable and remotely trimmable gain, limiter, lo-cut filter, 48 volt phantom power and a phase reversing switch. A unique output driver provides the many advantages of true transformer isolation with no performance compromises. XLR in and out. Rack mount one or two side-by-side with accessory panel.



## Micro Amp Series™

### M1000

#### Dual Microphone Amplifier

##### *Just the Ticket!*

To expand or upgrade a noisy console by replacing mike input and program amps. Eliminate pickup on long low level mike lines. Extremely low noise, 74 dB gain and plenty of headroom. XLR in and out, optional 48VDC phantom power. Single and dual rack mounts.



# Line

## Micro Amp Series™

### L1000

#### Precision Dual Line Amplifier

##### *A Versatile Tool*

Use it to upgrade a low output console, drive phone lines, boost inputs, cancel hum, interface Hi-Z outputs to balanced lines, compensate for line loss, sum L + R, check phase, drive meters and headphones. Balanced, bridging inputs, transformer or active balanced outputs, +22dBm in and out, 34dB gain. Half rack, mounts one or two across. Barrier block terminals, XLRs optional.



# Mixing

## Micro Amp Series™

### ML1000

#### Mike and Line Amplifier / Mixer



##### *Synergistic!*

One high gain mike channel, one medium gain line amplifier. Use it as a flexible two channel utility amplifier or flip a switch for a great mini-mixer for desk top newsroom production. XLR connectors in and out. Rack mounts singly or two side-by-side.

# Your Problem Solvers are:

## ■ Versatile

From Consoles to Preamplifiers, a growing collection of audio function blocks designed to quickly and easily solve your day-to-day studio, interface and installation problems.

## ■ Easy to Use

With balanced bridging inputs, active or transformer balanced inputs, wide dynamic range circuitry, excellent RF pickup protection, simple and quick installation, easy termination.

## ■ Transparent

Flatter frequency response with quiet, high slew rate circuitry for lowest noise and distortion, fully shielded power supplies, inaudible crosstalk and output isolation.

## ■ Rugged

Built tough for carry-around use, textured polyurethane finishes and polycarbonate panel overlays stay looking good for years rack and cabinet mounting adapters.

## ■ Serviceable

Socketed ICs and connectorized modular construction make short work of down time.



BC12DSL



BC8DSL



BC8DSR

## Vanguard Series™

# Broadcast Consoles

### Performance, Value and Reliability through Innovative Technology.

- The end result of a rigorous re-evaluation of traditional on-air console design, Vanguard Series Consoles offer superior performance and long term reliability with low initial cost and minimum maintenance.
- A lighted, quiet, snap-action panel switch array, sealed from all contaminants, digitally selects all mixer inputs, outputs and monitoring functions.
- DC operated VCAs used on all level controls totally eliminate fader noise and tracking errors and reduce the need for costly premium audio faders.
- Effective RF protection, punchblock type connections and jumper plug gain matching of input and output levels makes for quick, easy and foolproof installation.
- Modular, plug-in circuit cards allow fast board substitution troubleshooting by non-technical personnel.

### Dual Stereo Plus Dual Mono Outputs

BC8DSL — 8 Linear Faders, 12 Stereo Inputs

BC8DSR — 8 Rotary Faders, 12 Stereo Inputs

BC12DSL — 12 Linear Faders, 24 Stereo Inputs

- Four Input Headphone Amps
- Four Input Monitor Drivers
- Cue Amplifier and Speaker
- Two Microphone Preamps
- Balanced, Bridging Inputs
- Active Balanced Outputs
- Modular, Plug-in Boards
- External Power Module
- Compact — 24" or 32" Wide
- Effective RF Protection

### Optional Features

- P & G Faders
- Tally Light Relays
- Start-Stop Switching
- Dual, Five Input Expanders
- Additional Mike Preamplifiers
- Dual, Stereo LED Bargraph Meters

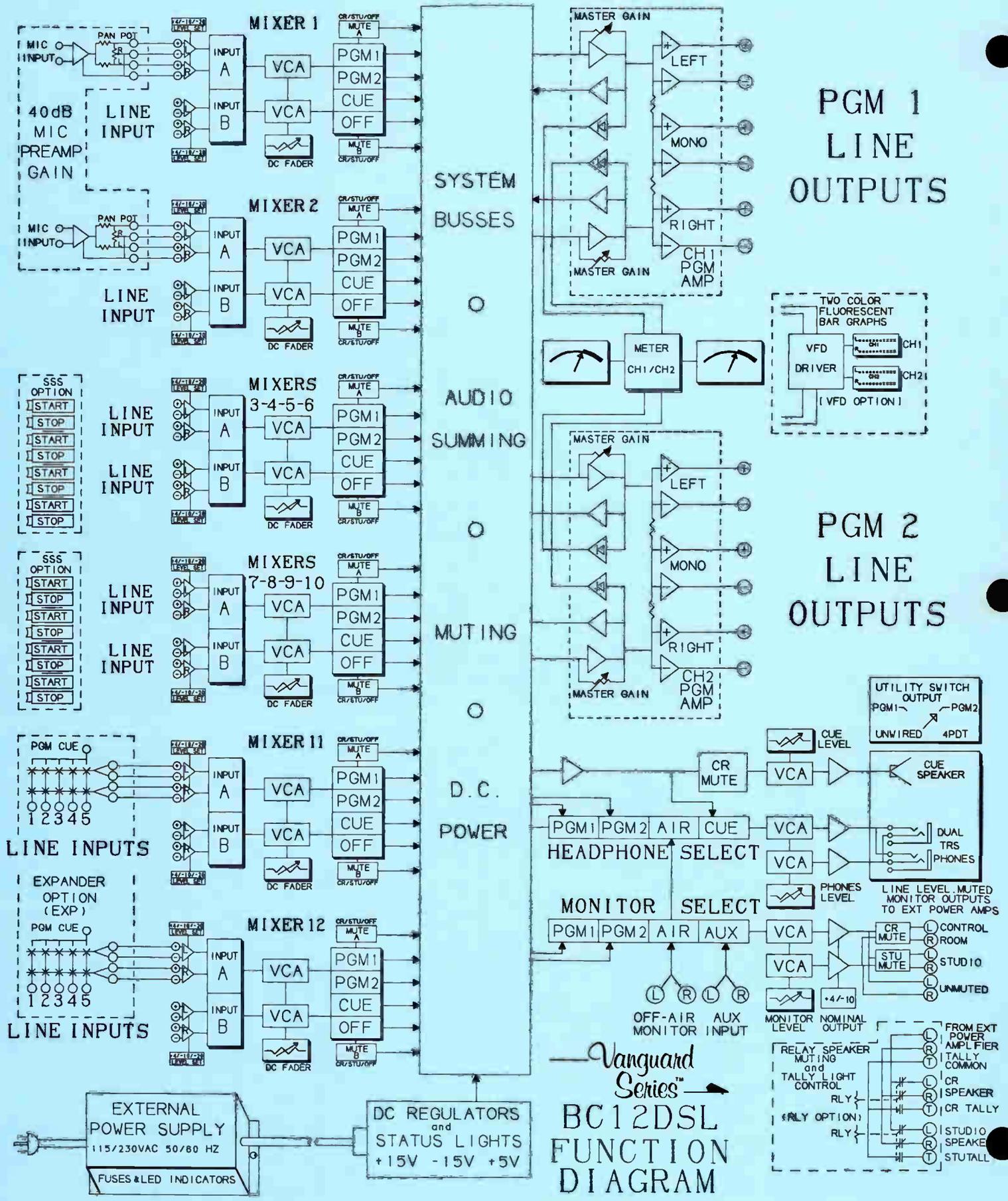
# Your Problem Solver from ATI

- Mixing
- Monitoring
- Processing
- Distribution



AUDIO TECHNOLOGIES INC.  
Dedicated to sound engineering  
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PGM 1  
LINE  
OUTPUTS

PGM 2  
LINE  
OUTPUTS

Vanguard  
Series  
BC12DSL  
FUNCTION  
DIAGRAM

# Vanguard Series™



## BC12DSL

12 MIXERS

24 STEREO INPUTS

DUAL STEREO *PLUS* DUAL MONO PROGRAM OUTPUTS

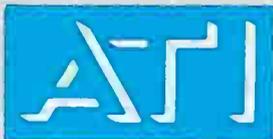
- 4 INPUT HEADPHONE AMPLIFIER
- 2 MICROPHONE PREAMPS
- VCA LEVEL CONTROLS
- MODULAR
- SERVICEABLE

- 4 INPUT MUTED MONITOR DRIVERS
- CUE AMPLIFIER AND SPEAKER
- ELECTRONIC AUDIO SWITCHING
- RF PROOF
- ONLY 32 INCHES WIDE

*BUILDS UPON THE EXCELLENT PERFORMANCE, SPECS AND CONSTRUCTION OF THE FIELD PROVEN VANGUARD SERIES BC8 CONSOLES.*

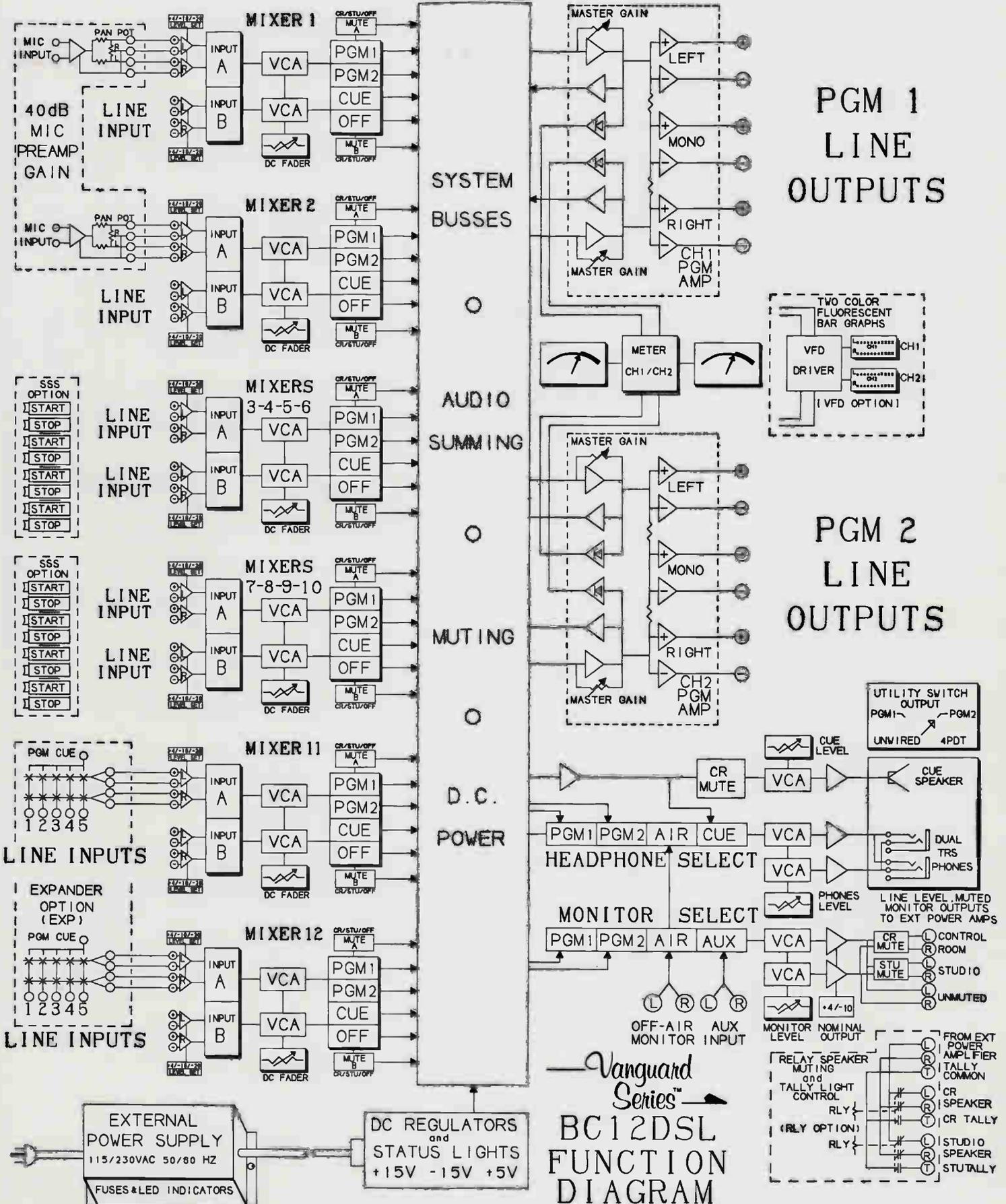
### Available Options

- Dual 5 Input Expanders for 32 Total Stereo Inputs
- Start-Stop Switching
- Relay Muting
- Dual, Stereo Fluorescent Meters
- P & G Faders
- Additional Microphone Preamps

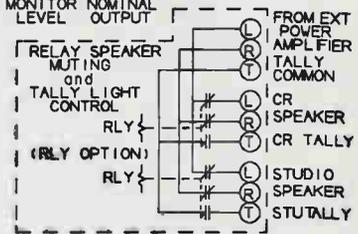


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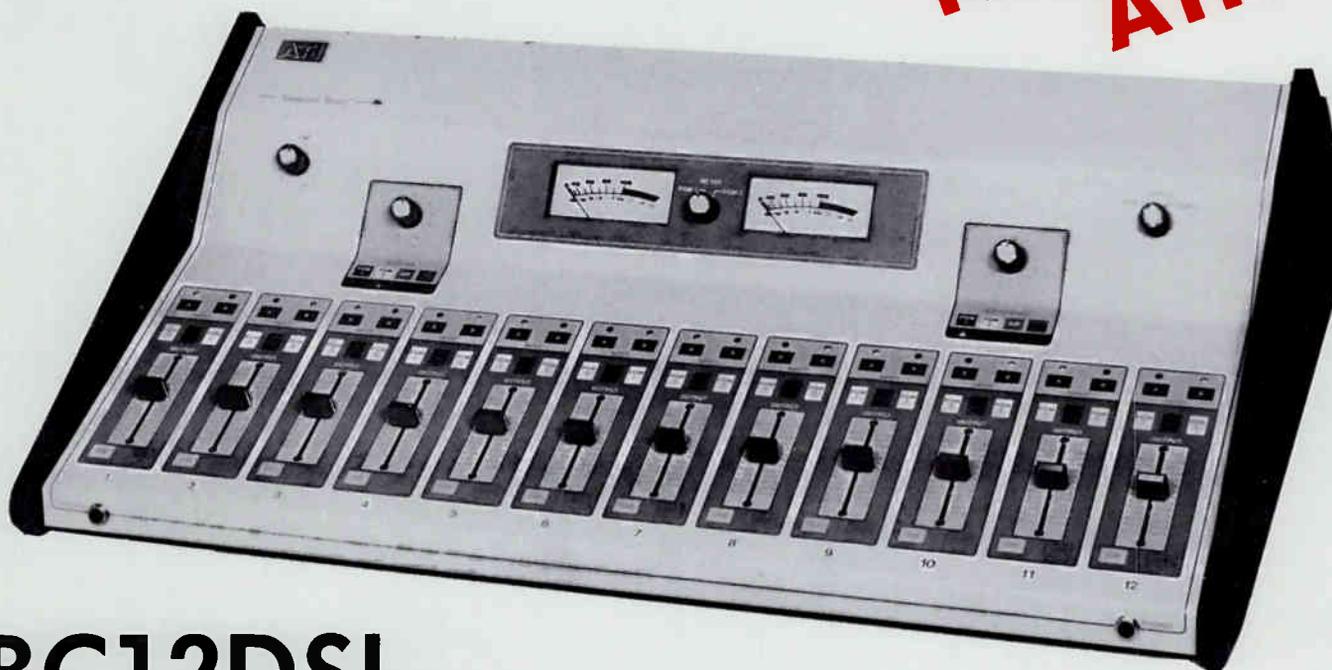


Vanguard Series™  
**BC12DSL**  
 FUNCTION DIAGRAM



# Vanguard Series™

**NEW FROM  
ATI!**



## BC12DSL

- 12 MIXERS
- 24 STEREO INPUTS
- DUAL STEREO and DUAL MONO PROGRAM OUTPUTS
- 4 INPUT HEADPHONE AMPLIFIER
- 4 INPUT MUTED MONITOR DRIVERS
- 2 MICROPHONE PREAMPS
- CUE AMPLIFIER and SPEAKER
- VCA LEVEL CONTROLS
- ELECTRONIC AUDIO SWITCHING
- MODULAR
- SERVICEABLE
- RF PROOF
- ONLY 32 INCHES WIDE

**INTRODUCTORY PRICE \$4995**

### *Available Options:*

- 10 Input Expander for 32 total inputs
- Start-Stop Switching
- Dual, Stereo Fluorescent Meters
- Penny and Giles Faders

**AUDIO  
TECHNOLOGIES  
INCORPORATED**



328 Maple Avenue, Horsham, PA 19044 • (215) 443-0330

# Sound Specifications

## Output Clipping Level

All channels simultaneously driven to full output.

DA2016 - 1, 2  
DA1008 - 1, 2  
DA1008 - 3, 4

+22 dBm, 600/150 ohms  
+22 dBm, 600/150 ohms  
+30 dBm, 600/150 ohms

## Distortion

Rated output and input levels to  
+24 dBm bridging

.25% maximum THD, 30 to 20,000 Hz

## Frequency Response

+/- .25 db 30 to 20,000 Hz

## Output Noise

20 KHz measurement bandwidth  
600 ohm source impedance, full gain

-70 dBm maximum

## Hum Rejection

Common mode, 60 to 120 Hz

80 db

## Input Overload

+24 dBm bridging, 600 ohms

## Input Impedance

Balanced differential inputs  
30,000 ohm bridging

## Gain

24 db, front panel screwdriver adjustable

## Power

115/230 VAC +/- 10%, 47-63 Hz.

## Size

17" W, 1 3/4" H, 10 1/2" D, 10 lbs.

## Metering

Electronic SCAN switching, 12 segments, 3 color, peak reading LED  
VU indicator, 0 VU selectable to +4, +8, or +18 dBm by front panel switch.  
LED channel indicator.

## Headphone Output

20 volt p-p output to 600 ohm phones, 30 mW output to low impedance phones

## Mounting

Suction feet for non-slip desk mounting and brushed aluminum extrusion rack mount brackets supplied.

## Input/Output Connections

High density screw terminal barrier blocks. Fanning strips supplied for easy installation.

## Models

DA1008-1	1 in x 8 out,	Transformer coupled outputs,	+22 dBm output
DA1008-2	1 in x 8 out,	Balanced differential outputs,	+22 dBm output
DA1008-3	1 in x 8 out,	Transformer coupled outputs,	+30 dBm output
DA1008-4	1 in x 8 out,	Balanced differential outputs,	+30 dBm output
DA2016-1	2 in x 16 out,	Transformer coupled outputs,	+22 dBm output
DA2016-2	2 in x 16 out,	Balanced differential outputs,	+22 dBm output
DA2016-3	2 in x 16 out,	Transformer coupled outputs,	+30 dBm output
DA2016-4	2 in x 16 out,	Balanced differential outputs,	+30 dBm output

Represented by:



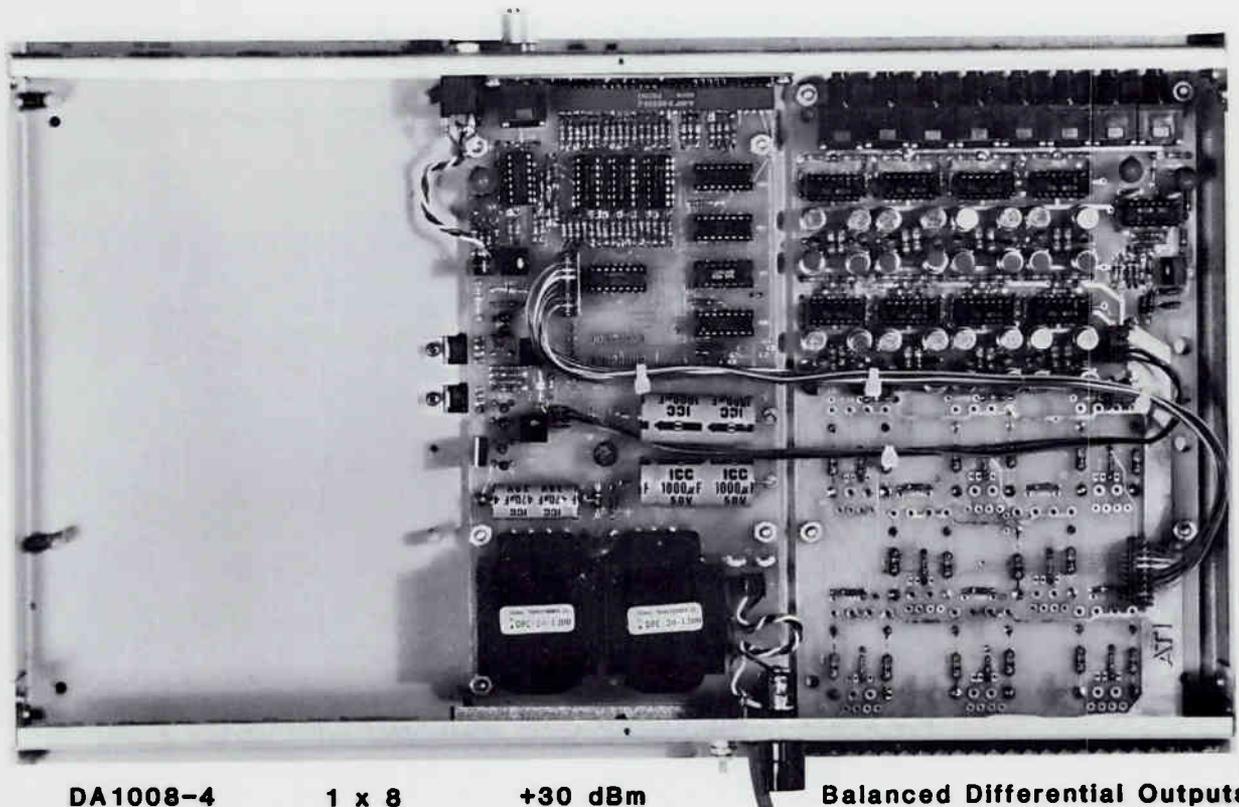
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TECHNOLOGIES  
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3 year limited warranty.

Technical specifications are subject to change at the discretion of the manufacturer.

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DA1008-4

1 x 8

+30 dBm

Balanced Differential Outputs

## Sound Engineering

- MicroAmps have been designed by a team with a 25-year history of successful broadcast and studio equipment design.
- MicroAmps eliminate by design the most common problems in DA usage with RF protected inputs and outputs and extremely high input and output clipping levels.
- MicroAmps exclusively utilize the newest premium integrated amplifiers designed specifically for professional audio applications rather than lower performance, lower cost instrumentation grade operational amplifiers.
- MicroAmp Distribution Amplifiers are available with individual transformer outputs for high RF environments; Balanced differential outputs to provide maximum output with lowest distortion and lowest cost; +30 dBm models for critical headroom applications and network use.

## Sound Features

- MicroAmps provide individual adjustment for each output. Audio taper, hot molded, sealed, premium level controls eliminate noise and erratic operation.
- MicroAmps have exclusive SCAN monitoring and metering. SCAN pressure sensor switch is fully protected behind the panel. Touching SCAN marking on the panel scans the monitor circuit across all 16 outputs at two steps per second. LED digital read-out indicates channel being monitored.
- MicroAmp DAs provide a high resolution, three color LED VU meter display. Front panel calibration switch selects +4, +8, or +18 dBm outputs at 0 VU.
- MicroAmp headphone monitor provides two channel monaural drive for stereo headphones with front panel level control and phone jack.
- MicroAmp Input Overload Indicators flash to indicate input signals which exceed the rated +24 dBm maximum input level.

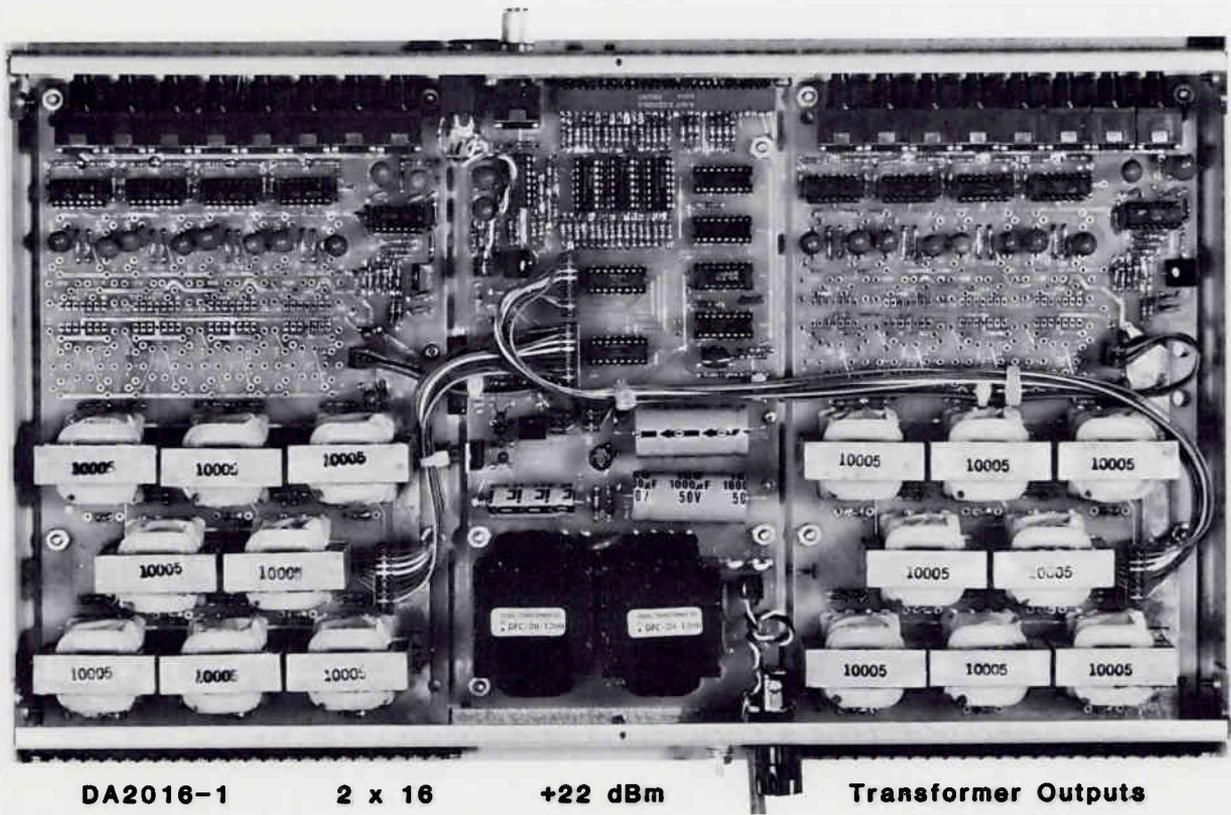


VU METER CALIBRATION

PHONE LEVEL

HEADPHONE JACK TRS

INDIVIDUAL OUTPUT LEVEL CONTROLS



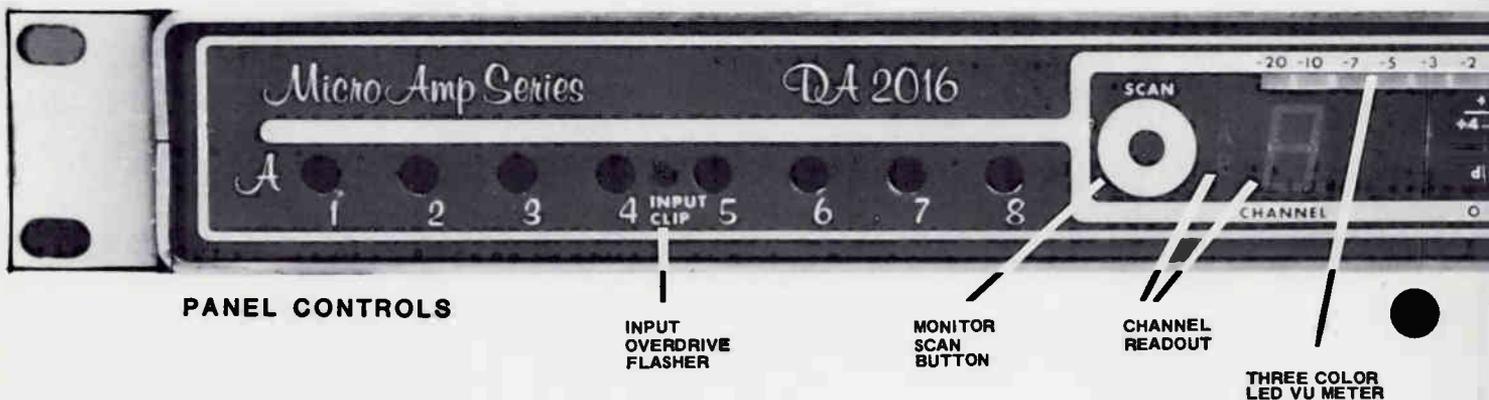
# Sound reasons to specify ATI

## Sound Packaging

- Handsome, reverse printed polycarbonate panels and textured polyurethane paint will resist years of wear and abuse.
- MicroAmps are rackable and stackable, only 1 3/4 in. high (one rack unit). Rack mount brackets are removable for desk-top use and non-slip suction feet keep them where you put them.
- MicroAmps are fully RF protected with shielded cases, double ground plane PC boards and interwinding transformer shielding.
- MicroAmps are complete even to input-output terminal block fanning strips.

## Sound Performance

- MicroAmps provide +22 dBm at clipping (all channels driven). +30 dBm models available for critical headroom requirements.
- MicroAmps are quiet, total output noise below -60 dBm at full gain.
- MicroAmps are transparent, a 13 V/microsecond slew rate eliminates the irritating harshness of Transient Intermodulation Distortion (TIM). Exclusive use of the 5533 audio IC provides 100 db open loop gain with a 50 MHz gain-bandwidth product to hold typical circuit distortion below .005%, even at 30 KHz.



# Micro Amp Series



**DISTRIBUTION AMPLIFIERS**

**DA1008**

**DA2016**

**SINGLE 1 by 8**

**DUAL 1 by 8**



**AUDIO  
TECHNOLOGIES  
INCORPORATED**

Dedicated to sound engineering

# Encore Series™ from ATI...

## SPECIFICATIONS

- **OUTPUT LEVEL:** +24dBm into 600 ohm loads. 15Vrms into high impedance loads.
- **DISTORTION:** .25% maximum THD, 30 to 20,000Hz at +22dBm out.
- **FREQUENCY RESPONSE:**  $\pm$ .25dB, 20 to 20,000Hz. -3dB at 3Hz and 40kHz typical. Square wave rise time 6uSec.
- **NOISE:** MMA400/MMA800; E.I.N. = -120dBm maximum with 150 ohm source resistance. MLA400/MLA800; E.I.N. = -92dBm with 600 ohm source resistance. Both measured with 20kHz equivalent square bandwidth. All hum components are at least 10dB below white noise.
- **GAIN:** MMA400/MMA800; 64, 74 or 84 dB. MLA400/MLA800; 22, 32 or 42dB. Each channels gain is dependent on output gain jumper plug position.
- **HUM REJECTION:** 60dB at 60Hz.
- **CROSSTALK:** -70dB maximum at 10kHz.
- **OUTPUTS:** MMA/MLA -1; Transformer Balanced, 60 ohm source Z. MLA/MMA -2; Active balanced, 300 ohm source Z, protected and RF bypassed.
- **INPUTS:** MMA400/MMA800; RF bypassed, balanced 40dB gain Instrumentation Amplifier,  $Z_{in} = 20Kohm$ . Maximum input is -20dBu. Gain can be reduced to 0dB to accept line level sources up to +22dBu by removing a jumper. MLA400/MLA800; RF bypassed, balanced, -2dB Differential Amplifier,  $Z_{in} = 30Kohm$ , +22dBu maximum input.
- **POWER:** 115/230 VAC  $\pm$  10%, 47-63Hz., 20VA.
- **SIZE:** 19"W  $\times$  1 3/4"H  $\times$  7 1/2"D, 10 lbs.
- **TERMINALS:** Rear barrier blocks for all input, output and summing jumpers. Fanning strips with solder terminals provided for easy prewiring and quick change servicing.

## MODELS AVAILABLE

- MMA400-1 Four Microphone to Line Amplifiers, Transformer Balanced Outputs.
- MMA400-2 Four Microphone to Line Amplifiers, Active Balanced Outputs.
- MMA800-1 Eight Microphone to Line Amplifiers, Transformer Balanced Outputs.
- MMA800-2 Eight Microphone to Line Amplifiers, Active Balanced Outputs.
- MLA400-1 Four Line to Line Amplifiers, Transformer Balanced Outputs.
- MLA400-2 Four Line to Line Amplifiers, Active Balanced Outputs.
- MLA800-1 Eight Line to Line Amplifiers, Transformer Balanced Outputs.
- MLA800-2 Eight Line to Line Amplifiers, Active Balanced Outputs.

Other configurations are possible, consult factory for unusual requirements.

Represented by:

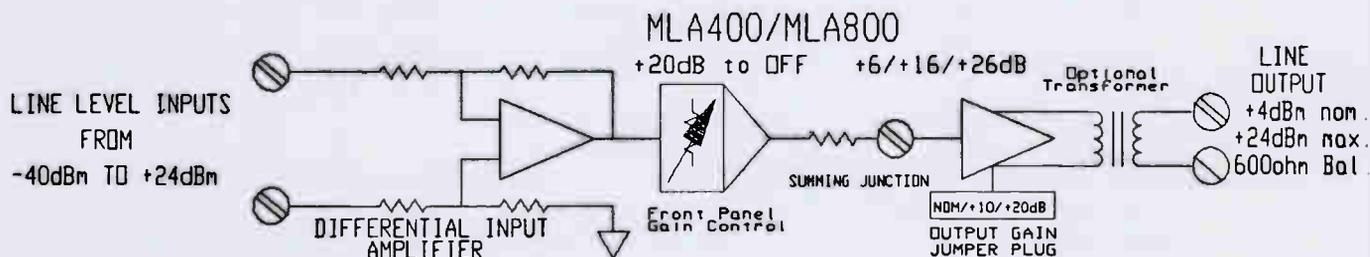
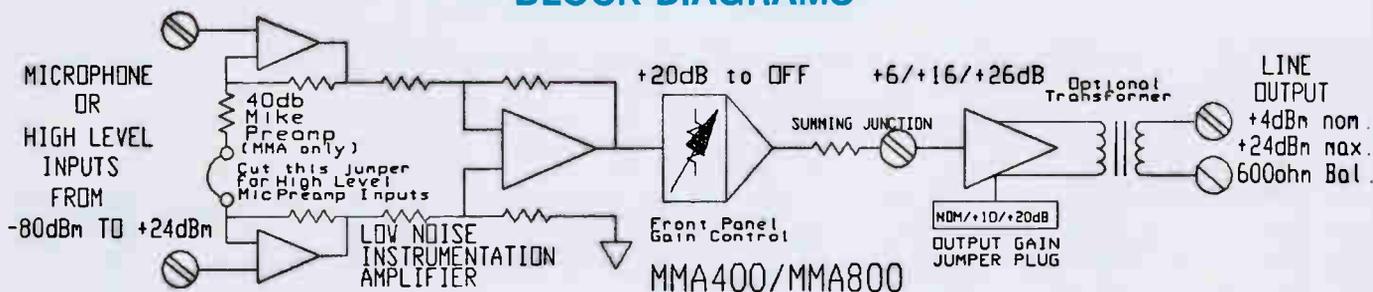


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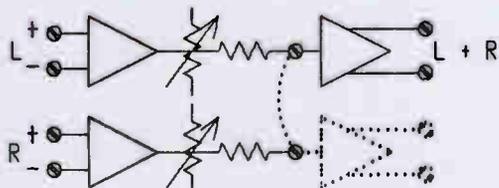
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FAX (215) 443-0394

## BLOCK DIAGRAMS



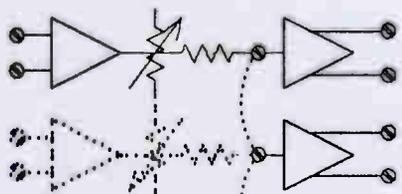
TYPICAL SINGLE CHANNELS SHOWN OF FOUR OR EIGHT PER SYSTEM

## MULTIPLE AMPLIFIER ARRAY APPLICATIONS



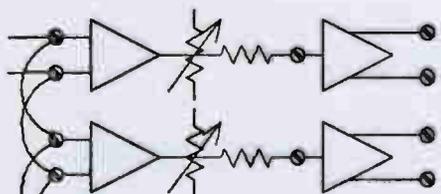
INPUT SUM or DIFFERENCE NETWORK

Reverse polarity of one input for Difference.



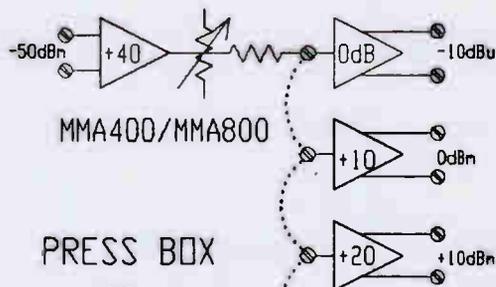
1 X N DISTRIBUTION AMPLIFIER

All outputs are driven at the same level

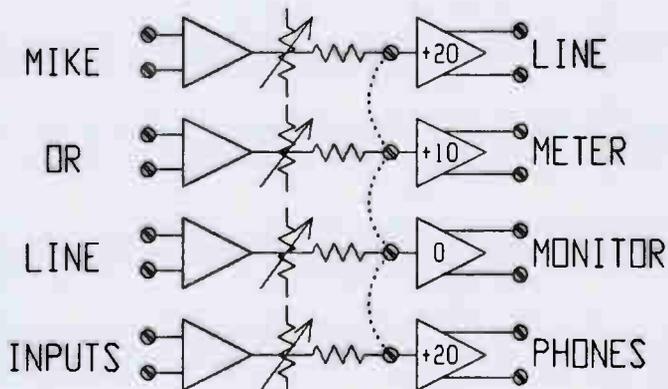


1 X N DISTRIBUTION AMPLIFIER

Each output is individually adjustable

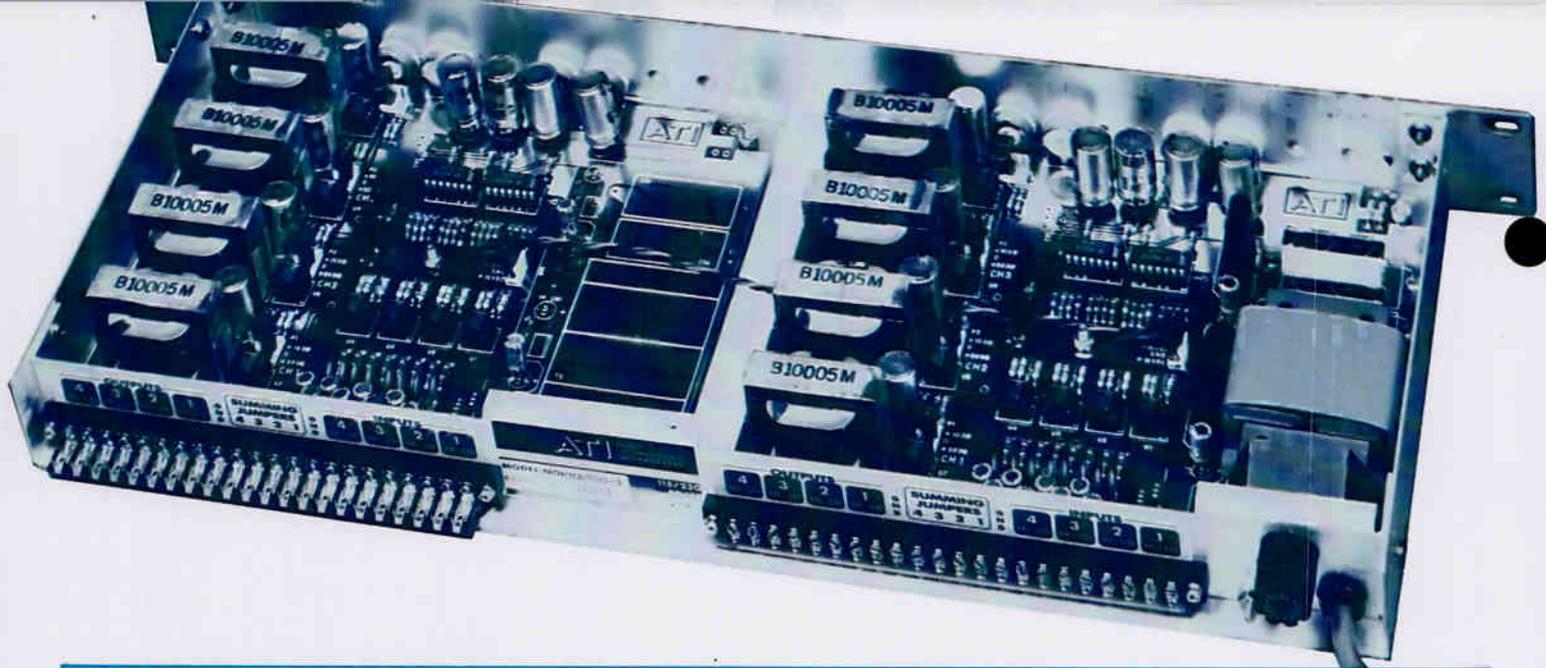


PRESS BOX  
or  
MICROPHONE DISTRIBUTION AMPLIFIER



Use MMA400/800 for Microphone or Line Inputs  
Use MLA400/800 to mix only Line Level Inputs.

SIMPLE MIXER



## HAVE THEM YOUR WAY!

Four or eight, high or low gain audio channels for YOU to easily setup as multiple Microphone or Line Amplifiers.

Rear panel jumpers let YOU add channels to make combinations of audio Distribution Amplifiers, Monaural Summing Networks or adjustable Sum and Difference Networks for matrix recording and stereo enhancement.

YOU can drive multiple outputs at different gain settings from a single or even several microphones to make an effective Press Box or Microphone Distribution Amplifier.

Combine YOUR high and low gain microphone inputs into many outputs as a simple rack mounted mixer with outputs to drive a balanced line, a VU meter output, a monitor amplifier feed and a headphone driver.

Drive all YOUR headphones from high power active outputs.

Interface YOUR CD Players, Cassette Machines, Equalizers and other consumer IHF level equipment into 600 ohm balanced systems.

Normalize incoming telephone lines and drive YOUR outgoing feeds with a Multiple Line Amplifier array.

## SYSTEM DESCRIPTION

Multiple Amplifier Arrays provide four or eight identical channels per the block diagrams at the top of the facing page. The upper diagram is a typical channel from a MMA Multiple Microphone Amplifier and the lower is one channel of the MLA Multiple Line Amplifier.

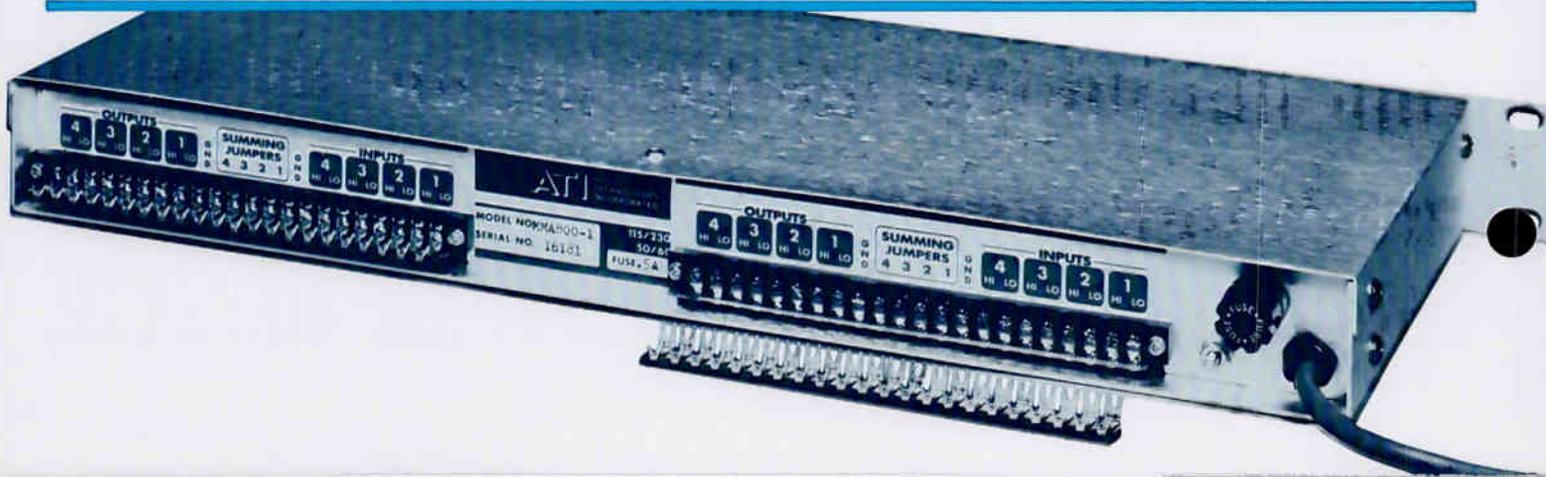
The MMA includes a direct input, low noise, 40dB microphone preamplifier placed ahead of the balanced differential line input stage of the MLA. This preamplifier provides plenty of gain for low output microphones and will even accept full high level line inputs just by opening a wire jumper in the desired channel. The differential input stage gives good rejection of common mode hum picked up on the input lines of both the MMA and MLA arrays. RC bypasses on all inputs minimize RF pickup.

A variable gain stage provides smooth, wide range log taper level adjustment for each channel. Gain is adjustable

over a range of +20dB at maximum to full off at minimum. The screwdriver adjustment controls can be converted to fingertip adjustments with an easily installed accessory shaft kit.

A resistively isolated summing junction is brought out to rear terminals for each channel. Interconnected channels will sum all the inputs to the interconnected outputs. Unused inputs can be disabled by setting their pots to minimum.

Each output stage can be set to an optimum gain of +6, +16 or +26dB with a jumper plug. Balanced outputs, either active direct or transformer coupled will drive up to +26dBm typically at clipping. Active outputs are resistively isolated and are bypassed for RF protection. Transformer outputs isolate long 600 ohm lines, can drive either balanced or unbalanced loads and provide smooth, wide response even when unterminated.



# Encore Series™



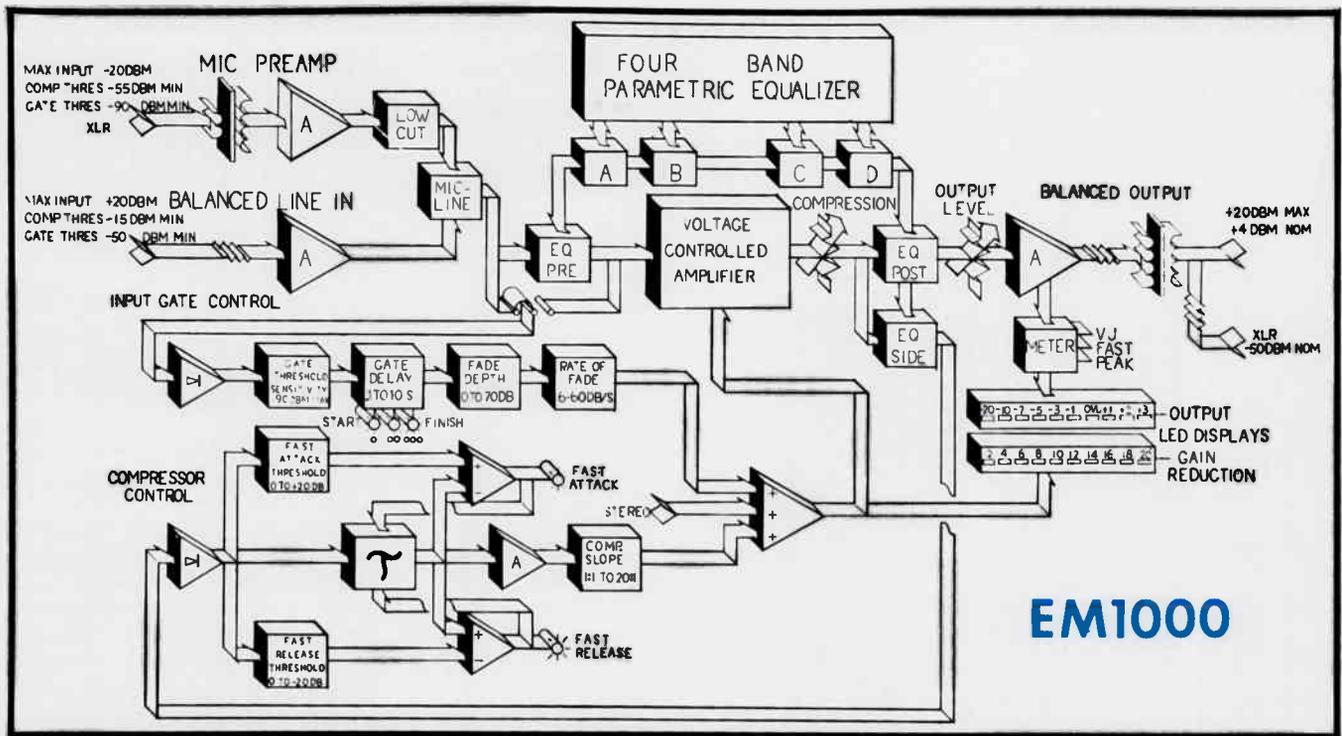
## MULTIPLE AMPLIFIER ARRAYS

MLA400, MMA400—FOUR CHANNEL LINE and MICROPHONE AMPLIFIERS

MLA800, MMA800—EIGHT CHANNEL LINE and MICROPHONE AMPLIFIERS



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**EM1000**

## Emph'a Sizer Applications

### BROADCAST

**DJ MIKE PROCESSOR** Switchable preset equalizers tailor the EMPH'a SIZER for each announcer...create the special production effects that give your station its own unique sound.

**REMOTES** Take it to the ballgame as a crowd noise ducker, compressor, line limiter and equalizer.

**STUDIO & TELEPHONE TALK SHOWS** Compressor rides gain, gate controls unused inputs and the equalizers add punch to your program.

### RECORDING STUDIOS

**MASTERING** Control H.F. energy in cassette and disc mastering...sibilance control.

**RECORDING** Create unusual effects on both vocal and instrumental tracks.

### SOUND REINFORCEMENT

**MICROPHONE CONTROL** Automatic level control and gating prevent overloads. Equalizers notch out critical room and speaker resonances. Side chain equalization controls energy at feedback frequencies to allow higher overall levels.

## Emph'a Sizer Specifications

- MIC. INPUT**.....Transformer coupled, female XLR, 40 db gain, -20 dBm maximum level, -124 dBm E.I.N. in 20 kHz band. 150 Hz switchable high pass filter.
- LINE INPUT**.....10 Kohm active balanced, dual banana jacks. Unity gain, +20 dBm maximum level, -110 dBm E.I.N. in 20 kHz band.
- LINE OUTPUT**.....Transformer (EM1000-1) or active balanced (EM1000-2) 0 VU is +4 dBm (adjustable 0 to +8 dBm) Clipping... +24 dBm, Dual banana jacks.
- MIC. OUTPUT**.....Attenuated Line Output, Male XLR -50 dBm nominal level, balanced, 150 ohms.

- SYSTEM RESPONSE**.....EQ out, 30 to 20000 Hz, ± .25 db.
- SYSTEM NOISE**.....EQ out, 80 db S/N ratio min at 10 db gain reduction.
- DISTORTION**.....+ 22 dBm output, 30 to 20000 Hz T.H.D. .2% maximum.
- STEREO MATCHING**.....± 1 db over 20 db gain reduction.
- POWER**.....110/220 Vac ± 10%, 50/60 Hz.
- SIZE**.....3½"H by 8½"W by 10¾"D
- MOUNTING**.....Free standing desk mounting Standard Single rack mount (centered) P/N 20104-501 Dual side by side mount P/N 20105-501

3 year limited warranty. Technical specifications are subject to change at the discretion of the manufacturer.

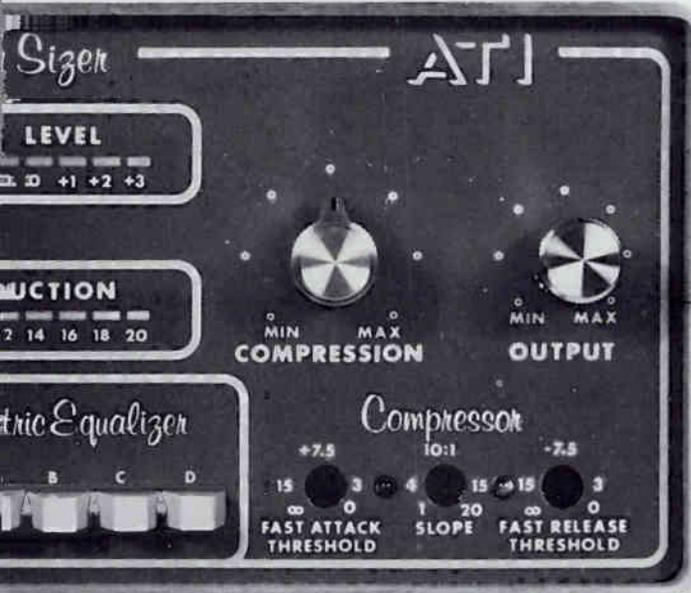


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Represented by:

# a Sizer



## a unique low distortion compressor-limiter

The Emph' a Sizer COMPRESSOR is designed around a pro-audio, monolithic, 100 db range, low noise VCA. High headroom capability allows the VCA to handle maximum inputs without input attenuation and thereby achieve maximum signal to noise performance on low level inputs.

The COMPRESSOR normally operates in a relatively slow acting, minimum distortion mode. Fast rising or decaying signals independently trigger either FAST ATTACK or FAST RELEASE operation only when the signal excursions exceed adjustable dynamic thresholds set around the operating level. The fast time constant networks are immediately switched off as soon as the output signal is brought within the allowable pre-set dynamic range. This unique approach to compressor-limiter design gives tight control of peaks while minimizing the distortion generation due to LF signal modulation which is characteristic of all fast acting AGC systems.

## band tronic equalizer

PRE position allows spectral modification of the signal while maintaining tight control of overall level in the compressor.

POST is used to brighten or add presence to the compressed signal. This is particularly useful in mike processing when the compressor is functioning primarily as an automatic level control and extremely tight control of peak level is not a major requirement.

SIDE chain equalization creates a frequency sensitive compressor particularly useful for de-essing and for controlling HF energy content in cassette mastering, disc cutting and FM broadcast use. Notching out a frequency band in the SIDE chain reduces its effect on the compressor and can eliminate modulation effects or compressor pumping from LF signals such as bass guitar or drums.

## controls

COMPRESSION threshold is adjustable upward from minimum inputs of -55 dBm (mike) or -15 dBm (line).

OUTPUT level is adjustable. LED bargraphs display OUTPUT and GAIN REDUCTION levels. 0 VU is internally set from 0 to +8 dBm. Peak, fast or VU ballistics with internal switching. Typical output clipping +24 dBm.

FAST ATTACK and FAST RELEASE THRESHOLDS are calibrated in db above and below the operating compression level. They set the switching points for actuation of the fast 1 mSec attack network or the 100 mSec recovery time constant. Normal compressor time constants are 100 mSec attack and 2.0 Sec release. Fast modes are indicated by LEDs and are inhibited at full CCW pot rotation.

SLOPE of the compressor is continuously adjustable from 1:1 (no compression) through low ratios which preserve a reasonable dynamic range to high ratios of 10 or 20:1 which maintain tight control of program levels.

## ording and sound reinforcement

## a program controlled input signal gate

The INPUT GATE reduces undesirable background or crowd noise, microphone crossfeed and reverberation pickup by reducing the Emph' a Sizer gain during pauses in the program. When input signal levels drop below a threshold point set by the SENSITIVITY control, the GATE starts a PRE-FADE DELAY interval. If input does not return before the DELAY times out, a controlled fade is initiated, at a pre-adjusted RATE to a pre-set DEPTH.

Upon return of normal input levels, the GATE restores control of the Emph' a Sizer gain to the compressor, returning directly to the previous operating compression level in less than 10 mSec.

Gate input is provided by either an active balanced, unity gain line input or a transformer coupled, low noise mike preamp. Rear panel input switching, a switched low cut mike filter, XLR mike and three way line input connectors are included.

## controls

SENSITIVITY is adjustable upward from minimum inputs of -90 dBm (mike) or -55 dBm (line in). The GATE is latched open or closed at the control limits.

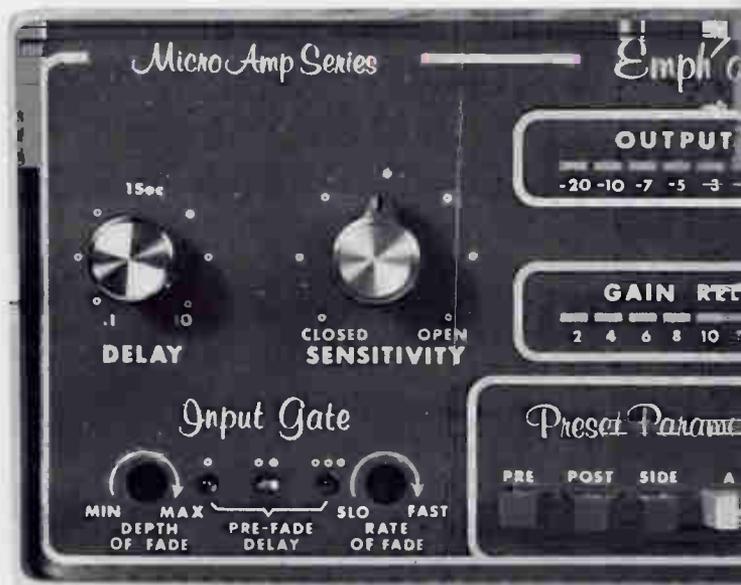
DELAY time before the fade begins may be set from .1 to 10 seconds. The longer DELAY settings allow effective use of higher input drop-out thresholds (low SENSITIVITY settings).

LEDs indicate program drop-out (•), the progression of the pre-fade DELAY (••) and the start of FADE (•••).

DEPTH OF FADE may be screwdriver or thumbnail adjusted to just duck the background by a few db or to completely cut off the channel by more than 80 db.

RATE OF FADE is easily set for an unobtrusive 6 db/sec slow fade or an instantaneous chop at more than 60 db/sec.

# Emph' a



## a four preset parameters

The Emph' a Sizer incorporates a powerful PARAMETRIC EQUALIZER system along with the facilities to position the equalizers ahead of (PRE), following (POST) or into the COMPRESSOR feedback path (SIDE).

The four separate equalizer sections may be used individually or in any combination. Each equalizer has readily accessible (but adequately protected) internal adjustments for FREQUENCY (50 to 1500 Hz and 500 to 15000 Hz in two bands), BANDWIDTH (.16 to 2 octaves) and up to 20 db of BOOST or CUT. The equalizers are designed with a slight interaction between the BANDWIDTH and the BOOST/CUT controls to compensate for the perceived increase in loudness as filter bandwidth increases.

## a powerful tool for broadcast, recording

# Micro Amp Series



## The Emph'a Sizer

EM1000



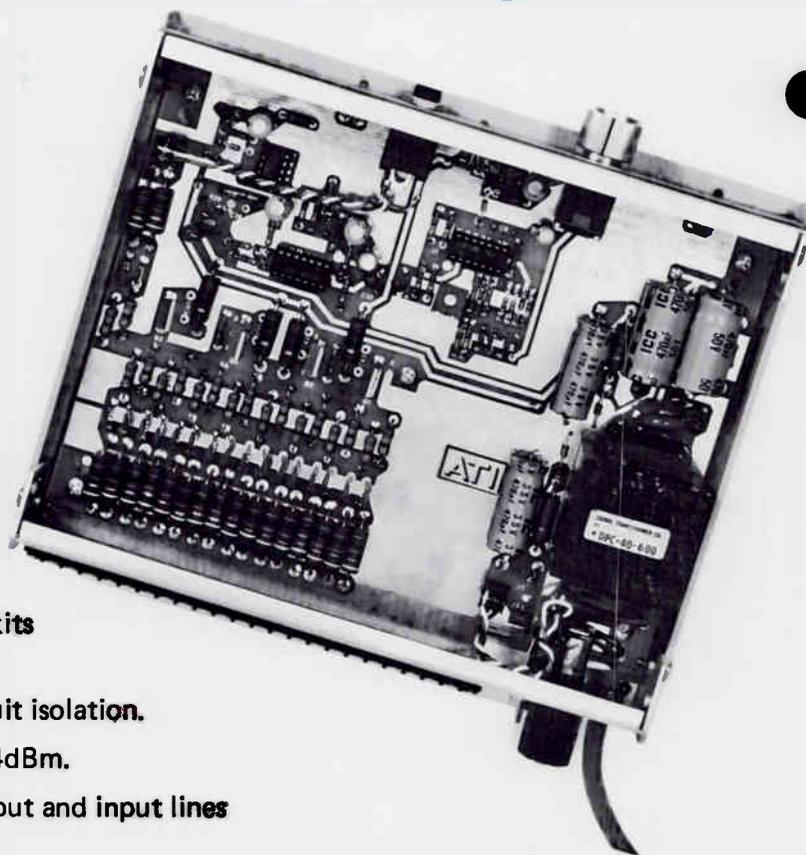
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Dedicated to sound engineering

# Sound reasons to specify ATI

DA1000  
DA2008

Micro DA



- Output clipping indicator
- Signal present indicator (DA1000)
- Front phone jack for headphones, metering or auxiliary ninth output
- Single or dual side by side rack mounting kits
- Eight active balanced outputs provide +24 dBm each with full short circuit isolation.
- Active balanced bridging inputs accept +24dBm.
- Heavy common mode bypassing of all output and input lines for superior RF protection.
- High slew rate power boosted NE5533 design provides totally transparent operation.

## Sound Specifications

**Output Clipping Level** ... +24dBm/600 ohms  
All channels fully loaded.

**Distortion** ..... 0.2% maximum THD  
20 to 20,000 Hz  
Rated output and  
inputs to +24dBm bridging

**Frequency Response** .....  $\pm 0.25$ db,  
-3db at 100 KHz 20 to 20,000 Hz

**Output Noise** ..... -70dBm maximum  
20 KHz measurement bandwidth  
600 ohm source impedance, full gain

**Output Isolation** ..... 70 db min. at 1 KHz  
Unit will tolerate up to 2 shorted outputs  
with no reduction of headroom.

**Gain** ..... +26db.  
Front panel level control

**Inputs** ..... 30 Kohm balanced  
bridging, +24 dBm max.  
80db hum CMR

**Power** ..... 115/230 VAC  $\pm 10\%$   
47-63 Hz.

**Size** ..... 8½"Wx1¼"Hx7" D, 4 lbs.

**Terminals** ..... Rear Barrier Block  
Fanning Strip Supplied.

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# Micro Amp Series



## Micro DA

**DA1000**

**SINGLE 1 by 8**

**DA2008**

**DUAL 1 by 4**



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# Specifications

## M1000 Series

### Precision Dual Microphone Amplifiers

**M1000-1** Dual, Transformer Outputs

**M1000-2** Dual, Balanced Differential Outputs

**M1000-3** Dual, Single Ended (Unbalanced) Outputs

#### Output Clipping Level

+ 22dBm/600 ohms (M1000-1,3)

+ 26dBm/600 ohms (M1000-2)

#### Distortion

+ 20dBm output and input levels from -52 to -18dBm

.2% maximum THD 30 to 20,000Hz

#### Frequency Response

± .25dB 50 to 20,000Hz

- 1dB at 20Hz

#### Equivalent Input Noise

20kHz measurement bandwidth, -124dBm

150 ohm source impedance

#### Input Overload

125mVrms minimum

#### Input Impedance

5000 ohms minimum, transformer coupled

#### Gain

72dB, front panel adjustable

#### Power

115/230VAC ± 10%, 47-63Hz

#### Size

8½" W x 1¼" H x 7" D, 2½ lbs.

#### Mounting

Suction feet for non slip desk mounting. Rack Mount Kit 20021-501 mounts single MicroAmp, Rack Mount Kit 20024-501 mounts two MicroAmps side by side.

## L1000 Series

### Precision Dual Line Amplifiers

**L1000-1** Dual, Transformer Outputs

**L1000-2** Dual, Balanced Differential Outputs

**L1000-3** Dual, Single Ended (Unbalanced) Outputs

#### Output Clipping Level

+ 22dBm/600 ohms (L1000-1,3)

+ 26dBm/600 ohms (L1000-2)

#### Distortion

+ 20dBm output and input levels to + 24dBm

.2% maximum THD, 30 to 20,000Hz

#### Frequency Response

± .25dB, 50 to 20,000Hz

- 1dB at 20Hz

#### Equivalent Input Noise

20kHz measurement bandwidth, 3.5 Microvolts

600 ohm source impedance

#### Hum Rejection

80dB for common mode hum

#### Input Overload

+ 24dBm bridging, 600 ohms

#### Gain

34dB, front panel adjustable

#### Power

115/230VAC ± 10%, 47-63Hz

#### Size

8½" W x 1¼" H x 7" D, 2½ lbs.

#### Mounting

Suction feet for non slip desk mounting, Rack Mount Kit 20021-501 mounts single MicroAmp, Rack Mount Kit 20024-501 mounts two MicroAmps side by side.

## P1000 Series

### Precision Stereo Phono Amplifiers

**P1000-1** Dual/Stereo Transformer Outputs

**P1000-2** Dual/Stereo Balanced Differential Outputs

**P1000-3** Dual/Stereo Single Ended (Unbalanced) Outputs

#### Output Clipping Level

+ 22dBm/600 ohms (P1000-1,3)

+ 26dBm/600 ohms (P1000-2)

#### Distortion

@ + 20dBm output

P1000-1 .2%, 30Hz to 20,000Hz

P1000-2,3 .05%, 20Hz to 20,000Hz

#### Equivalent Input Noise

Shorted input, .5 microvolts rms.

Cartridge input (1000 ohms + .5 Hy) .8 microvolts rms.

#### Signal to Noise Ratio

Unweighted, ref. 10mVrms 1kHz input 80dB

20 kHz bandwidth

#### Frequency Response

RIAA Curve ± .25dB, 30 to 20,000Hz

#### Input Sensitivity

Adjustable, 1.0mVrms at 1kHz for

+ 8dBm output

#### Input Overload

320mVrms at 1kHz

#### Input Impedance

47k ohms and 220pf

#### Subsonic Warp & Arm Resonance Filter

- 3dB max @ 20Hz

- 18dB @ 10Hz

#### Hi Cut Switch

- 3dB @ 10kHz

#### System Slew Rate

13V/Microsecond

#### Hi Boost Switch

+ 3dB @ 10kHz

#### Power Requirements

115/230VAC ± 10%

47-63Hz

#### Size

8½" W x 1¼" H x 7" D, 2½ lbs.

#### Mounting

Brackets supplied for internal turntable cabinet or desk top mounting. Single and dual rack mount kits available.

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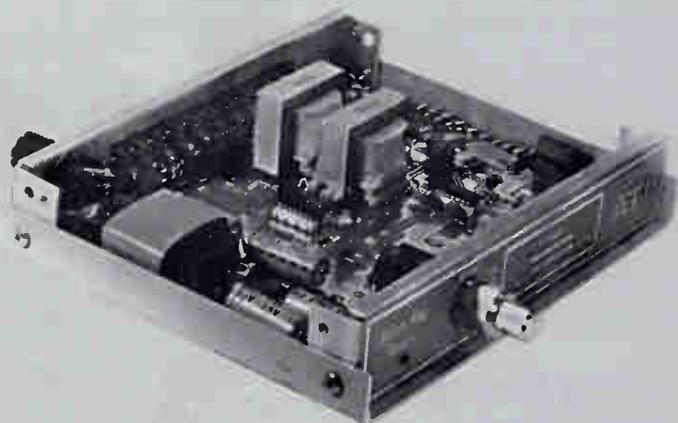
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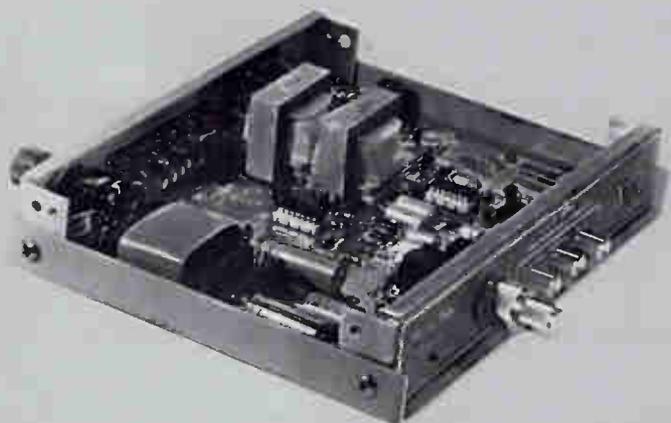


## L1000 Series

### Precision Dual Line Amplifiers

- L1000-1** Dual, Transformer Outputs
- L1000-2** Dual, Balanced Differential Outputs
- L1000-3** Dual, Single Ended (Unbalanced) Outputs

- Balanced differential inputs: 30,000 ohm bridging, fully transient protected and RF suppressed.
- 80dB common mode hum rejection.
- High input overload capability: + 24dBm bridging.
- Low noise: - 107dBm equivalent input noise (20kHz bandwidth).
- Low distortion: .2% maximum (transformer output), .05% maximum (direct outputs).
- Flat response:  $\pm .25$ dB, 50 to 20,000Hz.
- 34dB voltage gain: Front panel adjustable.



## P1000 Series

### Precision Stereo Phono Amplifiers

- P1000-1** Dual/Stereo Transformer Outputs
- P1000-2** Dual/Stereo Balanced Differential Outputs
- P1000-3** Dual/Stereo Single Ended (Unbalanced) Outputs

- High gain: 1mVrms @ 1kHz for + 8dBm output. Front panel adjustable, accepts any cartridge.
- High input overload: 320mVrms @ 1kHz, cannot be overloaded even by direct and digitally mastered disks driving high output cartridges.
- Lowest noise: 80dB S/N referred to 10mVrms @ 1kHz, cartridge source impedance.
- Flat response: RIAA curve  $\pm .25$ dB.
- Hi boost switch: Brightens dull or worn recordings.
- Hi cut switch: Cuts strident, scratched or distorted recordings.
- Rumble filter: Active feedback 2 pole high pass filter blocks rumble, record warp and seismic pickup without loss of audio, only 3dB down at 20Hz but 18dB to 26dB rejection in the 10 to 7Hz tone arm resonance range.
- Low distortion: .2% max (Transformer output). .05% max (direct outputs)
- Mounting: Brackets supplied for internal turntable cabinet mounting.

# Sound reasons to specify ATI

## Sound Packaging

- MicroAmps are handsome: Their reverse printed polycarbonate panels and textured polyurethane paint will resist years of wear and abuse.
- MicroAmps are micro-sized: Only 1¼" H x 8½" W x 7" D (44 mm x 216 mm x 178 mm).
- MicroAmps are rackable: Singly or two side-by-side in only one rack unit (1¼" H).
- MicroAmps are stackable: Non-slip suction cup feet keep them where you put them.
- MicroAmps are designed for your world: They're completely coffee proof.
- MicroAmps are versatile: Dual concentric gain controls allow use in dual mono or stereo modes with low cross talk.
- MicroAmps are fully RF protected: With shielded cases, double ground plane shielded PC board and interwinding shields in input, output and power transformers.

## Sound Performance

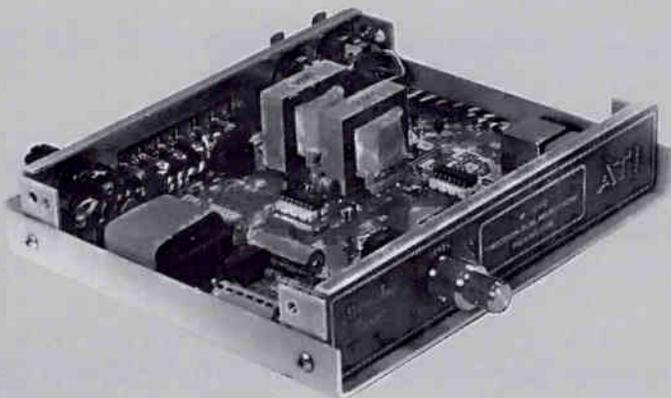
- MicroAmps provide +22dBm at clipping for transformer and single ended outputs, +26dBm for balanced differential outputs.
- MicroAmps are quiet: Total amplifier noise is typically within one dB of the thermal noise of source impedance.
- MicroAmps are transparent: A 13V/microsecond slew rate minimizes the irritating harshness of TIM distortion. 100dB open loop gain per stage and 50MHz gain bandwidth product hold typical circuit harmonic distortion below .005% even at 20kHz.



MicroAmps in side-by-side mount

## Sound Engineering

- MicroAmps have been designed by a team with a 25-year history of successful broadcast and studio equipment design.
- MicroAmps eliminate by design the most common problem areas in utility amplifier application with RF protected inputs and outputs, extremely high input overload capabilities and high output clipping levels.
- MicroAmps exclusively utilize the newest premium integrated amplifiers designed specifically for professional audio applications, rather than lower cost, lower performance instrumentation-grade operational amplifiers.
- MicroAmps fully meet the high slew rate criteria necessary to minimize Transient Intermodulation Distortion (TIM).
- MicroAmps provide individual, self-contained shunt regulated shielded power supplies with designed-in transient protection for 115/230VAC, 50/60Hz operation.
- MicroAmps are available in 3 models: Transformer outputs for high RF environments. Balanced differential outputs for maximum output with lowest distortion and widest response. Single ended outputs for lowest cost.



## M1000 Series

### Precision Dual Microphone Amplifiers

- M1000-1** Dual, Transformer Outputs
- M1000-2** Dual, Balanced Differential Outputs
- M1000-3** Dual, Single Ended (Unbalanced) Outputs

- Transformer coupled inputs and outputs incorporate full electrostatic and magnetic shielding.
- XLR type input connectors.
- Low noise: -124dBm equivalent input noise (20kHz bandwidth).
- High input overload: 125mVrms minimum.
- High gain: 72dB, front panel adjustable.
- Low distortion: .2% maximum with input levels up to 100mVrms.
- Flat response: ±.25dB, 50 to 20,000Hz.

# Micro Amp Series



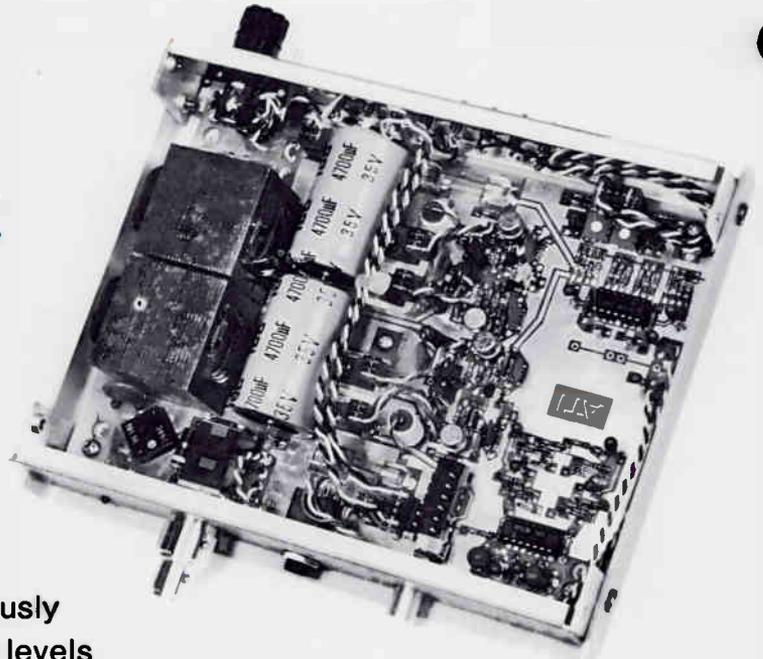
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# Sound reasons to specify ATI

## MA1000

### Micro Monitor



- 10Watts per channel – Stereo
- 25 Watts – mono bridged
- Balanced bridging inputs
- Front level control and headphone jack rear speaker terminals
- Electronic output protection instantaneously limits output voltage and current to safe levels
- Mode control switches both inputs and outputs for mono bridged operation
- Ideal headphone booster or monitor amplifier for low output consoles. Balanced differential inputs allow internal console connection without causing ground loops

## Sound Specifications

**Power Output**..... 10 Wrms/ch Stereo  
20 - 20,000 Hz      25 Wrms Mono  
Both channels driven

**Rated Loads**..... 8/4 ohms Stereo  
16/8 ohms Mono

**Distortion THD, 20-20,000**..... 0.1% max.  
10W/8 ohms IMD (SMPTE) ... 0.003% max.

**Slew Rate 1Vin, 10Wout**..... 20V/usec.

**Response 30 to 20,000 Hz** ..... ±.1db

**Voltage Gain** ..... 34 db

**Input Impedance** ..... 30,000 ohms  
Balanced differential input,  
transient protected and RF suppressed

**Input Overload** ..... +20dBm

**Total Output Noise** ..... 3mVrms  
Full gain, 20 to 20,000 Hz bandwidth

**Power**..... 115/230 VAC ±10%  
47/63 Hz , 50 VA max.

**Size** ..... 8½" Wx1¾" Hx7" D, 4 lbs.

Represented by:



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# Micro Amp Series



## Micro Monitor

MA1000



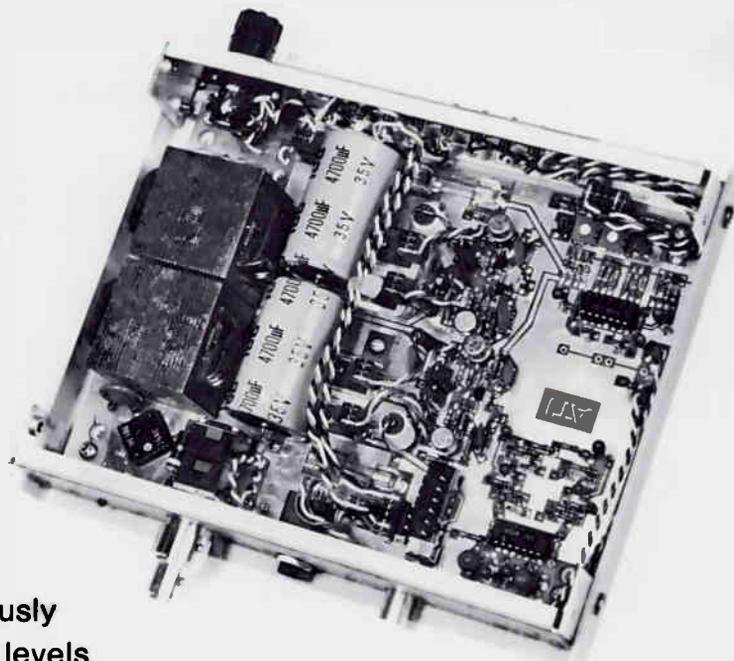
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Dedicated to sound engineering

# Sound reasons to specify ATI

## MA1000

### Micro Monitor



- 10Watts per channel – Stereo
- 25 Watts – mono bridged
- Balanced bridging inputs
- Front level control and headphone jack rear speaker terminals
- Electronic output protection instantaneously limits output voltage and current to safe levels
- Mode control switches both inputs and outputs for mono bridged operation
- Ideal headphone booster or monitor amplifier for low output consoles. Balanced differential inputs allow internal console connection without causing ground loops

## Sound Specifications

**Power Output**..... 10 Wrms/ch Stereo  
20 - 20,000 Hz        25 Wrms Mono  
Both channels driven

**Rated Loads**..... 8/4 ohms Stereo  
16/8 ohms Mono

**Distortion THD, 20-20,000**..... 0.1% max.  
10W/8 ohms IMD (SMPTE) .... 0.003% max.

**Slew Rate 1Vin, 10Wout**..... 20V/usec.

**Response 30 to 20,000 Hz**.....  $\pm 1$ db

**Voltage Gain** ..... 34 db

**Input Impedance** ..... 30,000 ohms  
Balanced differential input,  
transient protected and RF suppressed

**Input Overload** ..... +20dBm

**Total Output Noise** ..... 3mVrms  
Full gain, 20 to 20,000 Hz bandwidth

**Power**..... 115/230 VAC  $\pm 10\%$   
47/63 Hz, 50 VA max.

**Size** ..... 8½" Wx1¼" Hx7" D, 4 lbs.

Represented by:



**AUDIO  
TECHNOLOGIES  
INCORPORATED**

Dedicated to sound engineering  
328 W. Maple Avenue  
Horsham, PA 19044  
(215) 443-0330

3 year limited warranty.

Technical specifications are subject to change at the discretion of the manufacturer.

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# Micro Amp Series



## Micro Monitor

MA1000



**AUDIO  
TECHNOLOGIES  
INCORPORATED**

Dedicated to sound engineering

# Micro Amp Series <sup>TM</sup>

(continued)

## Ultimike <sup>TM</sup> Microphone Amplifier

M100	Servo stabilized low noise instrumentation amplifier input, +22dBm transformer output. 48VDC phantom power, switchable gain and limiting.	\$329.00	B
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## Micro-Meters Studio Metering System

Balanced, bridging inputs drive bright sixteen segment, three color LED bargraphs with simultaneous VU and PPM peak display. 0 VU level is switchable for -10, +4 or +8 dBm stereo inputs to each meter.

VU200	One Stereo Display	\$499.00	B
VU400	Two Stereo Displays	\$749.00	B
VU600	Three Stereo Displays	\$999.00	B
VU800	Four Stereo Displays	\$1,249.00	B

## DA10000 Modular Distribution Amplifier Systems

### System Components

RM100	Rack Frame Assembly, 5¼ inch by 19 inch EIA Mounting. Mounts up to ten amplifier modules with up to two PS100 Power Supplies.	\$299	A
PS100	Power Supply, 115/230VAC IN, + and -18VDC OUT. Diode isolated outputs for redundant operation. Power Failure Alarm Output and Indicators.	\$299	A

### Mass Feed, Power Splitting Distribution Amplifier Modules

CDA100	Compressor/Distribution Amplifier, 1 input to 6 active balanced outputs at +22 dBm. 47 db gain, 24 db compression range. Signal gated compressor recovery, Loss-of-Signal Alarm, LED Bargraph metering of output and gain reduction.	\$385	A
MDA100	Metered Distribution Amplifier, 1 input to 6 active balanced outputs at +22 dBm. Loss-of-Signal Alarm and Indicator, LED Bargraph metering of output level.	\$385	A
DA100	Distribution Amplifier Module, 1 input to 6 active balanced outputs at +22 dBm.	\$250	A
SMDA200	Stereo 1x4 Metered Audio DA. Two Inputs to Eight Active Balanced Outputs at +22dBm. Bargraph PPM Meter is switchable to Input / Output and Left / Right / L+R. Dip Switch selection of normal Stereo / Sum or Difference / Left only or Right only Outputs.	\$399	A
SDA200	Stereo 1x4 Audio DA. Two Inputs to Eight Active Balanced Outputs at +22dBm. Stereo Master Level Control plus L and R trimmers. Dip Switch selection of normal Stereo / Sum or Difference / Left only or Right only Outputs.	\$299	A

### Individual Output Distribution Amplifier Modules with Independent Level Adjustments

MIDA100-1RC	Metered Remote Control Distribution Amplifier. 1 input to 4 independent transformer balanced outputs at +22 dBm. Remote/Local VCA Master Gain Control. LED Bargraph meter.	\$485	A
MIDA100-1	Metered Distribution Amplifier. 1 input to 6 independent transformer balanced outputs at +22 dBm. LED Bargraph meter.	\$482	A
IDA100-1	Distribution Amplifier Module. 1 input to 6 independent transformer balanced outputs at +22 dBm.	\$385	A

### Accessories

BP100-1	Blank, 1.2 inch panel to replace missing Amplifier Module	\$25	A
BP100-2	Blank, 2.0 inch panel replaces Power Supply Module	\$30	A
EX100-1	Distribution Amplifier Extender Assembly	\$150	A
P/N20181-501	Spare PS100 Mating Connector Assembly	\$56	A
P/N20179-501	Spare Amplifier Module Connector Assembly	\$49	A
P/N20448-501	Spare Stereo Amplifier Module Connector Assembly	\$49	A
P/N20184-501	DC Interconnect Cable Assembly	\$5	A
P/N20185-501	AC Line Cord	\$8	A

**PRICE LIST EFFECTIVE APRIL 1, 1990 FOB OUR PLANT**

# Micro Amp Series <sup>TM</sup>

## Microamp Dual Microphone Amplifiers

M1000-1	Transformer Outputs	425.00	B
M1000-2	Balanced Differential Outputs	395.00	B
M1000-1P	Transformer Outputs with switchable 48Vdc Phantom Power	455.00	B
M1000-2P	Balanced Differential Outputs with switchable 48Vdc Phantom Power	425.00	B

## Microamp Dual Line Amplifiers

L1000-1	Transformer Outputs	375.00	B
L1000-2	Balanced Differential Outputs	355.00	B

## Microamp Microphone & Line Amplifiers/Mixer

ML1000-1	Transformer Outputs	425.00	B
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## Microamp Stereo Phono Amplifiers

P1000-1	Transformer Outputs	395.00	B
P1000-2	Balanced Differential Outputs	375.00	B

## Microamp Stereo Headphone Power Amplifier

MA1000-1	Stereo 10W/Mono Bridged 25W	399.00	B
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## Microamp Mass Feed Distribution Amplifiers

DA1000-1	1 input to 8 Balanced Differential Outputs	355.00	B
DA2008-1	DUAL Section, 1 by 4 each	375.00	B

## Microamp Line Switcher, Meter and Monitor Amplifier

Eight Balanced Inputs to One Balanced Line Output, 5 Range LED Meter and Monitor.

VU1000-1	Drives 600 ohm Phones or ext. Power Amp such as MA1000	645.00	C
VU1000-2	Includes 6W Power Amp for Lo-Z Phones or ext. Speaker	745.00	C
P/N 20209-501	Stereo Interconnect Cable	15.00	A
P/N 20214-501	Remote Control Scan Cable	12.00	A

## Rack Mount Kits for Above

P/N 20021-501	Single Unit, Centered Mount	20.00	A
P/N 20024-501	Double, Side by Side Mount	25.00	A

## Microamp Distribution Amplifiers

One Balanced Bridging Input to Eight Balanced Outputs with Individual Level Controls. LED Bargraph Output Meter has OVU selectable to +4, +8 or +18dBm. Headphone Amplifier. Rack mount.

DA1008-1	+ 22 dBm, Transformer Outputs	895.00	C
DA1008-2	+ 22 dBm, Balanced Differential Outputs	795.00	C
DA1008-3	+ 30 dBm, Transformer Outputs	1145.00	C
DA1008-4	+ 30 dBm, Balanced Differential Outputs	1035.00	C

Dual 1 by 8, Two Balanced Bridging Inputs to Sixteen Balanced Outputs with Individual Level Controls. LED Bargraph Output Meter has OVU at +4, +8 or +18dBm. Headphone Amplifier. Rack Mount.

DA2016-1	+ 22 dBm, Transformer Outputs	1295.00	C
DA2016-2	+ 22 dBm, Balanced Differential Outputs	1045.00	C
DA2016-3	+ 30 dBm, Transformer Outputs	1745.00	C
DA2016-4	+ 30 dBm, Balanced Differential Outputs	1525.00	C

## Emph'a sizer™ Audio Processor

Includes an Input Signal Gate, 4 Switchable Parametric Equalizers, a Wide Range Compressor-Limiter and both Microphone and Line Level Inputs and Outputs.

EM1000-1	Transformer Output	1395.00	C
EM1000-2	Balanced Differential Outputs	1395.00	C
P/N 20104-501	Single [centered] Rack Mount	30.00	A
P/N 20105-501	Dual Side by Side Rack Mount	45.00	A

## Encore Series™ Turntable Amplifiers

P100S	+ 18 dBm, Active balanced, Stereo	279.00	B
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## Encore Series™ Distribution Amplifiers

Independent + 18 dBm active balanced outputs with individual controls. Output clipping indicators. Rack mounting.

DA208	Dual 1 by 4	339.00	B
DA416	Quad 1 by 4	489.00	B

## IHF↔Pro Level and Impedance Converters

Interface semi-pro, unbalanced, -10 db IHF equipment into 600 ohm balanced systems.

MM100 Match-Maker™	Bi-Directional, Stereo, Transformer Outputs For Cassette or Reel Recorders, Mixers, VCRs and Graphic Equalizers.	269.00	B
DP100 Disc-Patcher™	Uni-Directional, Stereo, Transformer Outputs For Compact Digital Disc Players, ENG Cassettes, VCR Playback, Off-Air Tuners and Audition Outputs.	219.00	B
P/N 20273-501	Rack Panel Mounts one or two MM100s or DP100s in 1¼".	25.00	A

# Vanguard Series™

## Broadcast Audio Consoles

<b>BC8DSR</b>	Eight mixers, Twelve balanced inputs. Two mono mic. preamps with PAN pots. Dual Stereo program outputs plus two Mono Mix program outputs. AB type J rotary faders control DBX™ VCAs.	<b>\$3,395.00</b>	<b>A</b>
<b>BC8DSL</b>	Eight mixers, Twelve balanced inputs. Two mono mic. preamps with PAN pots. Dual Stereo program outputs plus two Mono Mix program outputs. Sixty mm. Linear faders control DBX™ VCAs.	<b>3,395.00</b>	<b>A</b>
<b>BC12DSL</b>	Twelve mixers, Twenty-four balanced inputs. Two mono mic. preamps with PAN pots. Dual Stereo program outputs plus two Mono Mix program outputs. Sixty mm. Linear faders control DBX™ VCAs.	<b>4,995.00</b>	<b>A</b>

### Optional Features

<b>BGD</b>	<b>Bargraph Display</b> Two stereo, three color, sixteen segment LED bar-graphs with simultaneous VU and PPM peak display. Replaces conventional VU meters and allows continuous metering of both stereo program outputs.	<b>350.00</b>	<b>A</b>
<b>EXP</b>	<b>Input Expander</b> Increases console input capability with two banks of five self-indicating input switches wired to any two mixer inputs. Remote program cue capability.	<b>275.00</b>	<b>A</b>
<b>SSS</b>	<b>Stop/Start Switches</b> Eight momentary lighted pushbutton switches with terminal board for remote start-stop control of four Tape Decks, cart machines or turntables. Mounted into lower front panel between phone jacks and aligned with center mixers. (Lamps not included). Two SSS options may be used with BC12DSL to control eight machines.	<b>125.00</b>	<b>A</b>
<b>MIC</b>	<b>Dual Microphone Preamplifier</b> Additional pair of 40dB microphone preamplifiers each with an on-board PAN pot. Drive two stereo hi-level inputs with mono or use as a stereo pair feeding a single mixer.	<b>150.00</b>	<b>A</b>
<b>RLY</b>	<b>Speaker Muting and Tally Light Relay</b> A two relay module board provides relay operated speaker muting and tally light control for the control room and one studio.	<b>125.00</b>	<b>A</b>
<b>PLF</b>	<b>Premium Linear Faders</b> Eight Penny and Giles Model 3010 65MM Travel Twelve Penny and Giles Model 3010 65MM Travel	<b>600.00</b> <b>900.00</b>	<b>A</b> <b>A</b>

### Maintenance Kits

<b>SCK</b>	<b>Semiconductor Kit</b> Spare integrated circuits, transistors, diodes, LEDs, regulators and bridge rectifiers useful for local repair.	<b>125.00</b>	<b>A</b>
<b>FDR-8</b>	<b>Replacement Rotary Fader Kit for BC8DSR - Quantity - Eight</b>	<b>80.00</b>	<b>A</b>
	<b>Replacement Linear Fader Kits for:</b>		
<b>FDL-8</b>	BC8DSL - Quantity eight	<b>50.00</b>	<b>A</b>
<b>FDL-12</b>	BC12DSL - Quantity twelve	<b>75.00</b>	<b>A</b>

**Note:** Prices shown for options are for factory installation at time of console manufacture.

## Multiple Amplifier Arrays

Four or eight channels of Microphone to Line (up to 82dB) or Line to Line (up to 42dB) amplification. Applications include gain blocks, audio distribution and level matching, telephone line interface and headphone drivers. Channels can be interconnected as sum and difference networks or as a simple mixer or press box. . . by just changing jumpers. Rack mounts in only 1 3/4 inches.

<b>MMA400-1</b>	Four Microphone Amplifiers, +24 dBm, Transformer Balanced Outputs	<b>\$525.00</b>	<b>B</b>
<b>MMA400-2</b>	Four Microphone Amplifiers, +24 dBm, Active Balanced Outputs	<b>\$399.00</b>	<b>B</b>
<b>MMA800-1</b>	Eight Microphone Amplifiers, +24 dBm, Transformer Balanced Outputs	<b>\$795.00</b>	<b>B</b>
<b>MMA800-2</b>	Eight Microphone Amplifiers, +24 dBm, Active Balanced Outputs	<b>\$599.00</b>	<b>B</b>
<b>MLA400-1</b>	Four Line Amplifiers, +24 dBm, Transformer Balanced Outputs	<b>\$475.00</b>	<b>B</b>
<b>MLA400-2</b>	Four Line Amplifiers, +24 dBm, Active Balanced Outputs	<b>\$349.00</b>	<b>B</b>
<b>MLA800-1</b>	Eight Line Amplifiers, +24 dBm, Transformer Balanced Outputs	<b>\$725.00</b>	<b>B</b>
<b>MLA800-2</b>	Eight Line Amplifiers, +24 dBm, Active Balanced Outputs	<b>\$549.00</b>	<b>B</b>
<b>SE8</b>	Shaft Extenders (8) for fingertip adjustment (user installed)	<b>\$ 5.00</b>	<b>A</b>

Broadcast Consoles

# Price List

Phono Preamplifiers

Dual Mike, Line, & Power Amplifiers

IHF/600 Ohms Interface Amplifiers

Distribution Amplifiers

Modular Distribution Amplifiers

Low Cost Distribution Amplifiers

Audio Processors

Mike & Line Amplifier/Mixer

Micro Meter Studio Metering & Monitor System

Single Mike Amplifiers

Studio Metering System

*All equipment rack mountable single or dual*



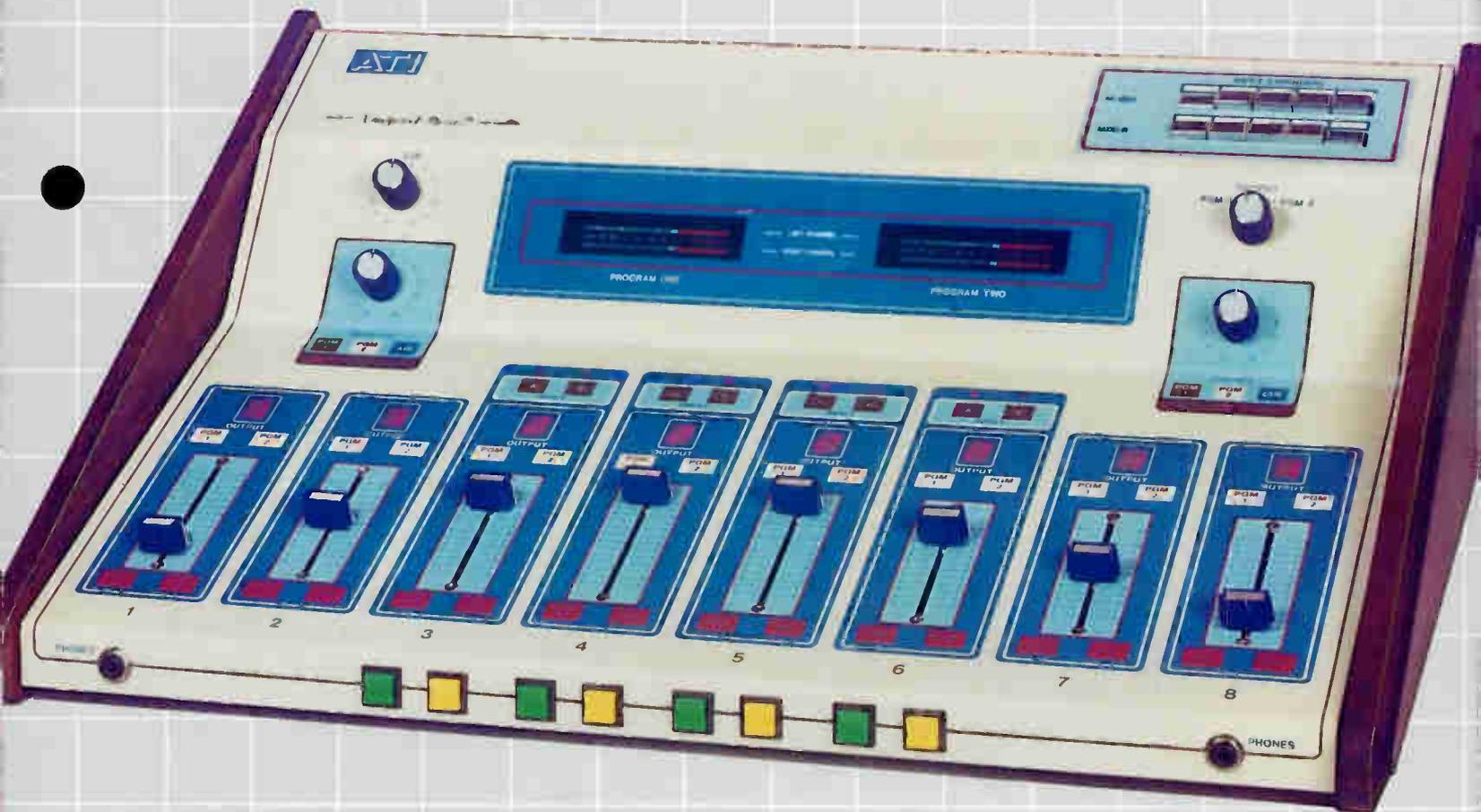
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*Dedicated to Sound Engineering*



# Vanguard Series™

## Broadcast Consoles

Performance, Value and Reliability  
through Innovative Technology



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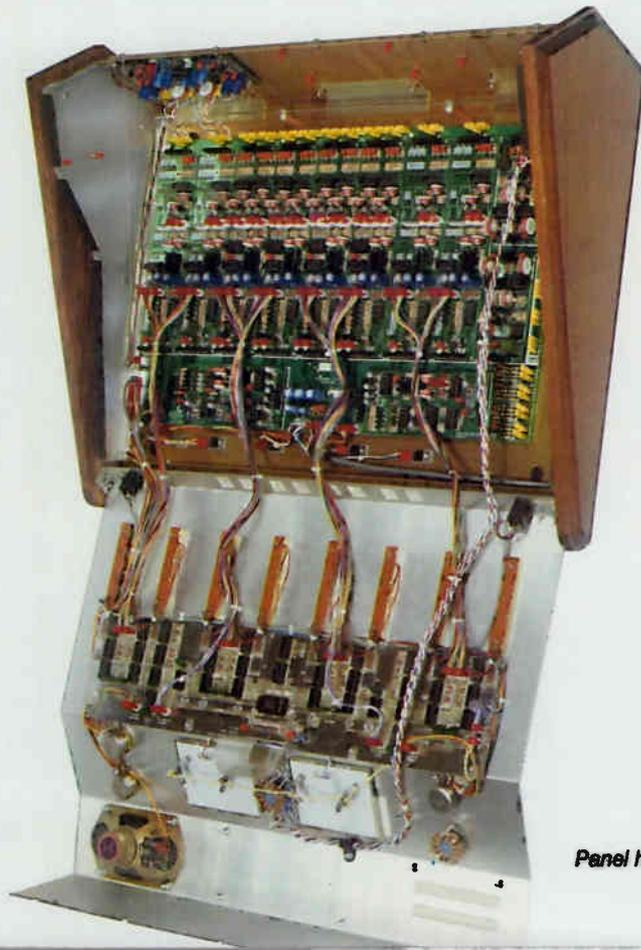
BC8DSR



BC8DSL

# Vanguard Series™

## Consoles from ATI



Panel hinges forward for maximum accessibility

Vanguard Series Consoles represent a unique value in broadcast boards. Starting with a clean slate, every aspect of the console design process has been rigorously evaluated to find better and more cost effective alternatives. A digitally scanned matrix of long life membrane switches replaces conventional trouble prone pushbutton and lever key switches for input selection and bus assignment. Logic controlled, current mode FETs switch all audio with no wearout, feedthru or noise. DC operated VCAs used for all level control functions eliminate the need for expensive audio faders.

Unique circuit designs provide superior audio performance and allow jumper plug gain programming for optimum matching of input and output levels to your particular requirements.

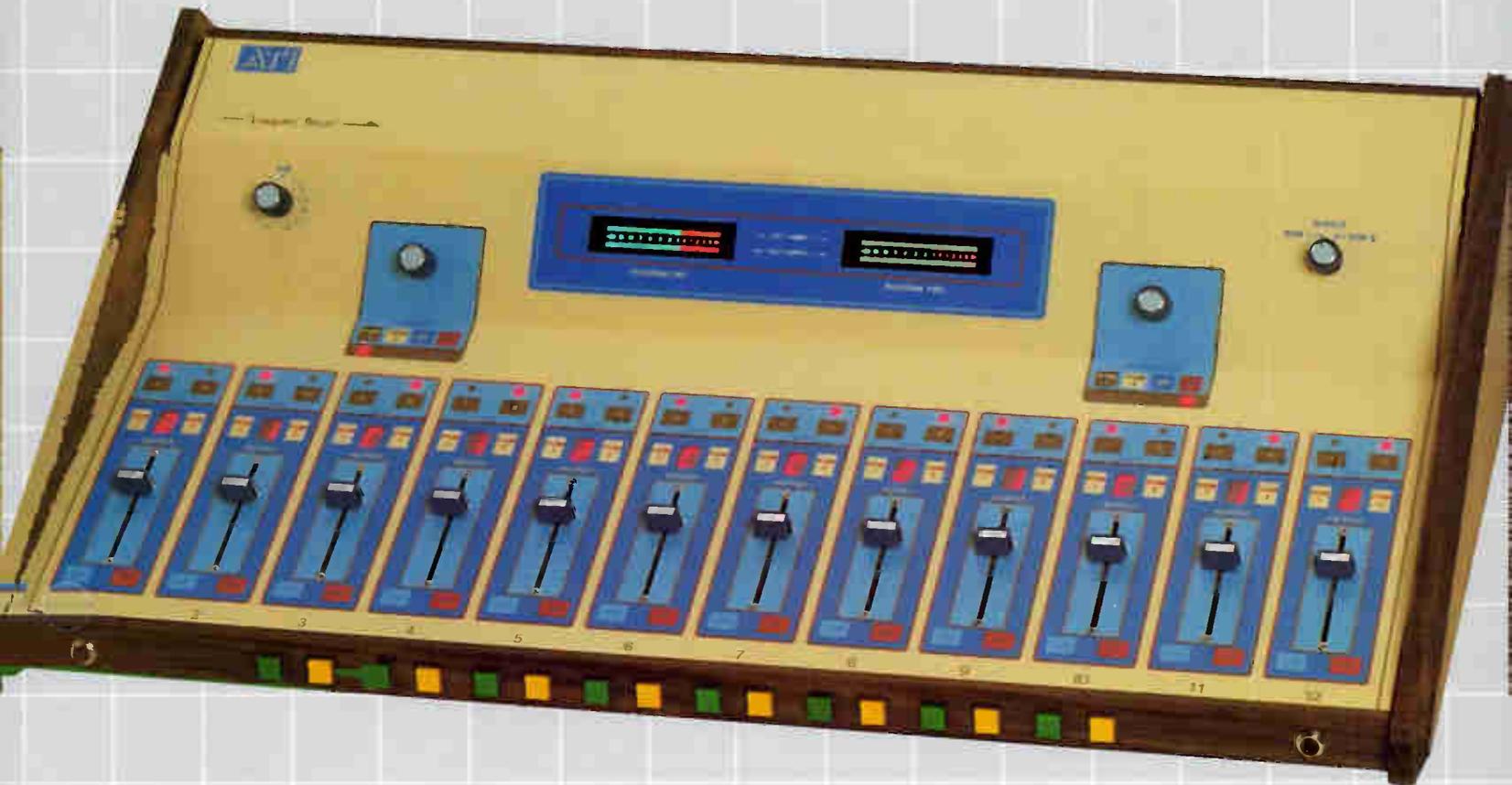
The elimination of all program audio from the panel improves RF immunity and allows a compact and simple console package unmatched for accessibility and economy. A four layer mother-daughter circuit package with alternate layers of ground plane shielding forms a fully modular and repairable shielded audio system with none of the labor intensive and failure prone hand wiring of traditional consoles.

All studio wiring is made directly to the motherboard with high reliability, easy to use punch down type connectors which require only a phillips screwdriver to assure correct wire insertion.

A Vanguard Series console will provide you with exceptional performance and a long trouble-free life in the most demanding control room or production applications.

- Eight mixers, Rotary or Linear Faders.
- Dual Stereo plus Dual Mono Program Outputs.
- 12 Stereo inputs to 8 mixers plus optional 5 by 2 expander.
- HI-Level instrumentation amplifiers accept -20, -10 or +4dBm Inputs with excellent hum and RF rejection.
- Two mono microphone preamps with internal PAN pots standard. Low noise instrumentation amplifiers with DC servo stabilization. Additional preamps optional.
- Programmable muting for every input.
- Two switched analog VU meters standard. Optional four channel, two color vacuum fluorescent bar graphs.
- Three input monitor selector provides muted outputs for external optional power amplifiers.
- Three input headphone selector and amplifier.
- Built in cue amplifier and speaker.
- Membrane switch locations are raised by embossing to allow easy touch location in the dark. Stainless steel domes above each switch provide silent tactile feedback. Five color graphics are protected by a seamless, rugged polycarbonate overlay. LEDs indicate all operations.
- All faders and level controls drive DC operated VCAs. AB type J pots and smooth acting linear faders.
- Modular audio package of horizontal mother-daughter boards. Gold to gold AMP connectors. Three layer RF shielding.
- External unregulated power module isolates power line disturbances and blocks conducted RF. Power supply status indicators.

# Vanguard Series™



## BC12DSL

12 MIXERS

24 STEREO INPUTS

DUAL STEREO PLUS DUAL MONO PROGRAM OUTPUTS

- 4 INPUT HEADPHONE AMPLIFIER
- 2 MICROPHONE PREAMPS
- VCA LEVEL CONTROLS
- MODULAR
- SERVICEABLE

- 4 INPUT MUTED MONITOR DRIVERS
- CUE AMPLIFIER AND SPEAKER
- ELECTRONIC AUDIO SWITCHING
- RF PROOF
- ONLY 32 INCHES WIDE

*BUILDS UPON THE EXCELLENT PERFORMANCE, SPECS AND CONSTRUCTION OF THE FIELD PROVEN VANGUARD SERIES BC8 CONSOLES.*

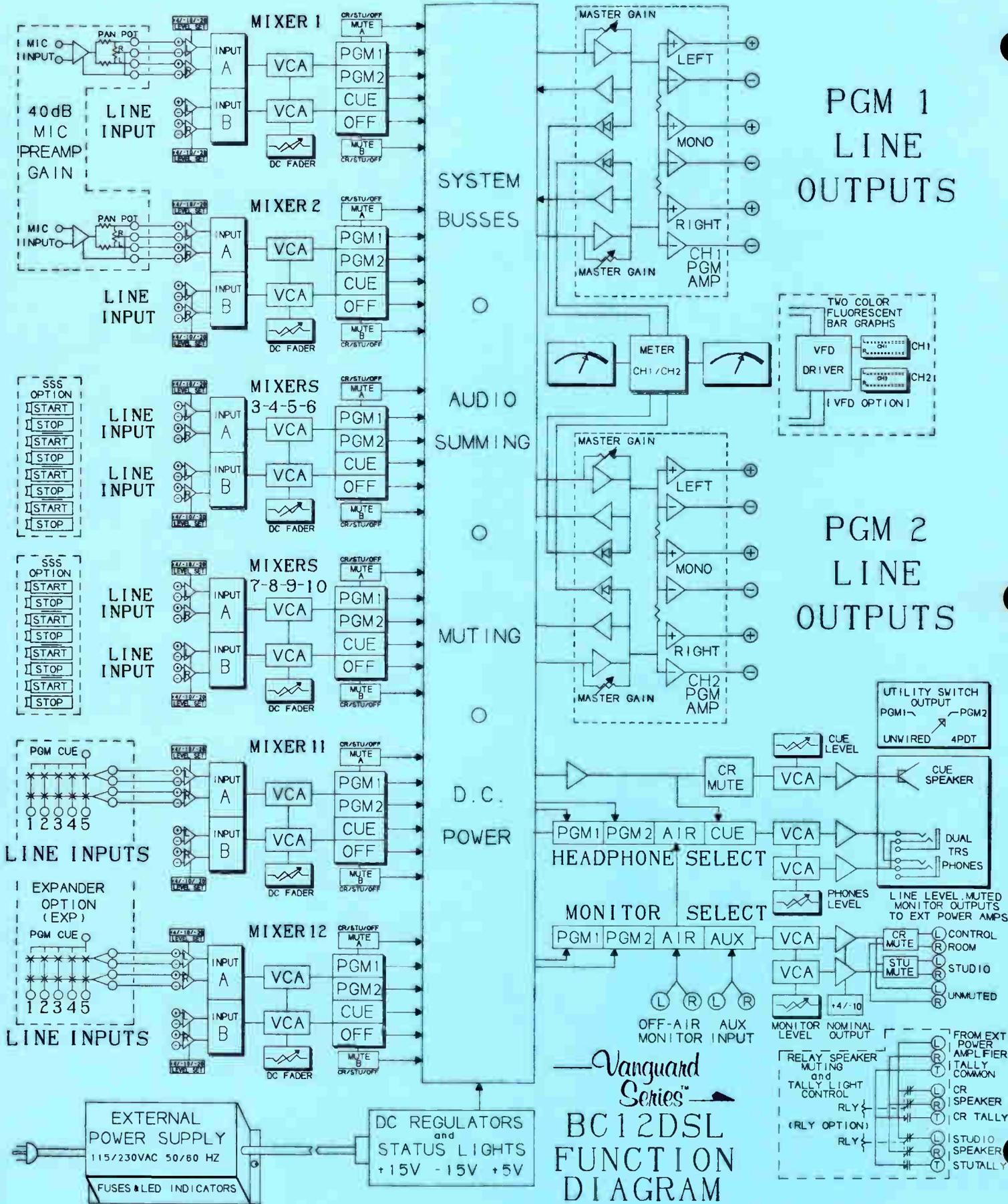
### Available Options

- Dual 5 Input Expanders for 32 Total Stereo Inputs
- Start-Stop Switching
- Relay Muting
- Dual, Stereo Fluorescent Meters
- P & G Faders
- Additional Microphone Preamps



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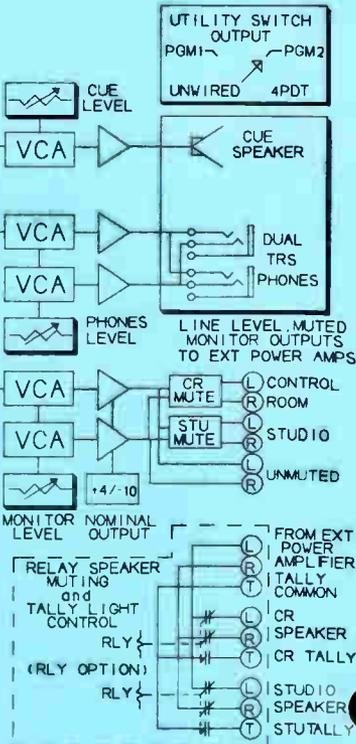
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PGM 1  
LINE  
OUTPUTS

PGM 2  
LINE  
OUTPUTS

Vanguard  
Series  
BC12DSL  
FUNCTION  
DIAGRAM





## Specifications

**Mixers** Eight, rotary or linear faders, DC operated DBX VCAs, Digital output bus selection.

**Inputs** Twelve stereo hi-level inputs. Two mono microphone preamps with PAN pots are factory wired to the hi-level inputs of mixers 1 and 2. Additional pairs of microphone preamps available as MIC option to feed any other hi-level inputs. Muting available on all inputs with jumper plug programming. Input Expander option (EXP) increases input capacity to 20 stereo lines.

**Outputs** Six active balanced program outputs; Left, Right and Mono Sum for both PGM1 and PGM2 busses. Nominal output +4dBm at OVU, adjustable 0 to +8dBm.

**Meters** Two analog VU meters standard, switchable between PGM1 and PGM2 stereo outputs. Vacuum fluorescent display option (VFD) monitors both stereo program outputs continuously on dual, stereo, 14 segment, two color displays with peak storage.

**Monitor** Stereo, muted monitoring outputs at +4dBm or -10dBu (.25V) drive optional external control room and studio speaker power amplifiers (MON). DC controlled selection of PGM1, PGM2 or external OFF-AIR input. VCA level control.

**Phones** Stereo headphone amplifier drives +22dBm into 600 ohm phones. DC controlled selection of PGM1, PGM2 or CUE. VCA level control.

**Cue** A mono-sum, post-fader cue output is available from all mixers to drive a muted 6 Watt amplifier and internal cue speaker. VCA level control.

### Input Levels and Impedances

**Hi-Level Inputs:** 12 active balanced instrumentation amplifiers, balanced 20,000 ohm impedance, RF bypassed and jumper plug programmable for nominal input levels of +4, -10 or -20dBm. Clipping input +26dBm, overdrive causes only clean clipping with no hang-up or phase reversal. CMR adjustments for 60dB hum nulls. Equivalent Input Noise (EIN) is -92dBm for a 20kHz bandwidth.

**Microphone inputs:** Two active balanced, low noise instrumentation amplifiers with servo loop operating point stabilization. Inputs are balanced 10,000 ohms, AC coupled and protected from transients and RF with diode clippers, ferrite suppressors and capacitive bypasses. The two 40dB mono preamplifiers each feed PAN pots for adjustable L/R split to following stereo hi-level inputs. Nominal input -50 or -60dBm, dependent on gain setting of hi-level input. Maximum input is -21dBm. EIN is -124dBm for a 150 ohm source resistance and a 20,000 Hz measurement bandwidth.

**Off-Air Monitor:** Unbalanced, 10,000 ohms, -10dBu (.25V) nominal.

**Gain** MIC input to PGM output, 98dB minimum. HI-LEVEL input to PGM output, 58dB minimum.

**Output Level and Distortion** MIC or HI-LEVEL inputs to PGM output at +18dBm. THD .15% maximum, 20 to 20,000Hz. IMD .15% maximum, SMPTE method. Clipping outputs, +26dBm Stereo PGM, +20dBm Mono PGM.

**Frequency Response** MIC or HI-LEVEL inputs to PGM, Monitor or Phones  $\pm .25$ dB, 20 to 20,000Hz.

**Signal to Noise Ratio** MIC to PGM, 74dB min. below nominal +14dBm output with -50dBm

available power input for typical proof measurements with 20,000Hz measurement bandwidth.

**HI-LEVEL** to PGM, 95dB min. below nominal +14dBm output with +4dBm line input and normal control settings.

**Crosstalk** -74dB into any PGM output when driving any other PGM output to +14dBm output at 10,000Hz. Gain set for +14dBm out with -50dBm MIC input.

**Power** 115/230 VAC,  $\pm 10\%$ , 50/60Hz, 250 VA maximum. External fused power module feeds console regulators.

### SIZE

**Console** 23½"W by 18¾"D by 8"H, 16½ lbs.  
**Power Module** 8½"L by 7"W by 3"H, 7 lbs. 8" keyhole mounting centers, 8 ft. interconnecting cable. Total shipping weight 35 lbs.

## Ordering Information

Model	Description
BC8DSR	Console, Dual Stereo, Eight Rotary Mixers
BC8DSL	Console, Dual Stereo, Eight Linear Mixers
-VFD	Option, Dual Vacuum Fluorescent Displays
-EXP	Option, Input Expander Switches, 10 by 2
-SSS	Option, Start and Stop Switches, 4 each.
-MIC	Option, Dual Mono MIC preamplifier board.
-RLY	Option, Dual Tally and Muting relay board.

All Specifications subject to change at the discretion of the manufacturer.  
Equipment manufactured in U.S.A.  
One year limited warranty.

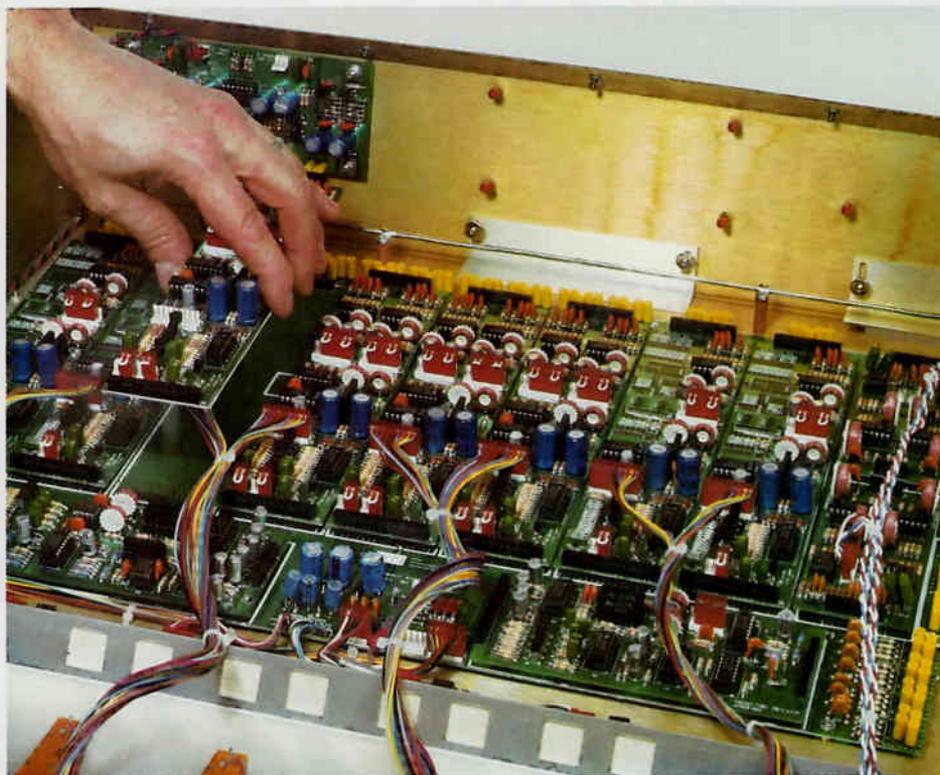


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Modular plug-in construction