

# AT 44 Series

4 Channel Advanced Integrator Amplifiers

Ariatechnik

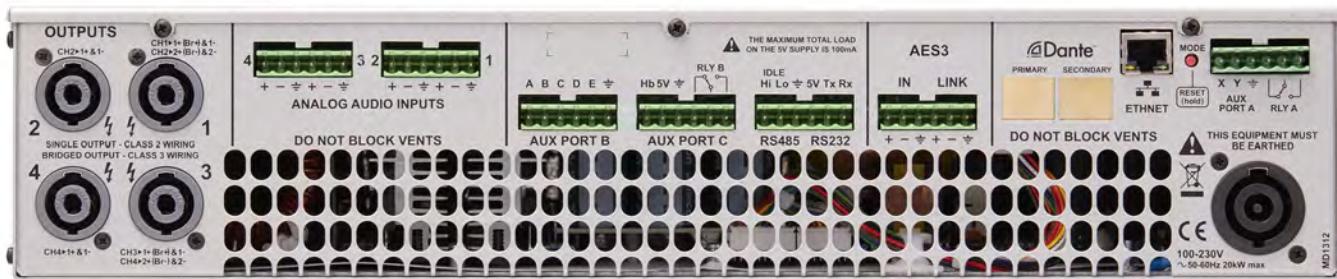
at 44 6k

at 44 10k

at 44 20k

Ariatechnik's 4 channel amplifiers present a unique combination of power and audio performance combining state of the art DSP and network control with many integrator friendly features. Our Amplifiers offer next generation technologies that result in sound quality and value without peer. Available in models developing between 1,500 Watts and 5,000 Watts per channel (or 10,000 Watts for a bridged pair). Uniquely each channel can be optimised to deliver its power into 2, 4 or 8 Ohm nominal loads as well as 25V, 70V & 100V constant Voltage (CV) lines. This offers designers and integrators unparalleled flexibility and costeffectiveness. Using state of the art components and a finely optimized design results in generous power reserves that ensure pristine sound quality is maintained even under the most extreme conditions.





## FEATURES

- ▲ Four channels of sonically pure Class D amplification
- ▲ Unique, precise, 96kHz digital signal processing
- ▲ Over-designed switch mode power supply
- ▲ Tamper-proof front panel
- ▲ Integrator friendly connectors
- ▲ Contact closure control ports and relay status outputs
- ▲ Ethernet, RS232 and RS485 for system control and monitoring
- ▲ Analogue, AES3 and Dante™ audio inputs
- ▲ Powerful grouping and multi-layer EQ

## POWER PER CHANNEL, ALL CHANNELS DRIVEN

Model	AT44 20k	AT44 10k	AT44 6k
2 Ohm	5,000	2,500	1,500
4 Ohm	3,000	2,500	1,500
8 Ohm	1,500	1,500	1,500

At Ariatechnik you will find a company which is committed to designing and producing the finest audio equipment in the world. Research and development work is led by Darrin Kavanagh who has a distinguished 25-year history in product development and manufacturing. We have successfully supplied thousands of products to all corners of the globe via OEM technical partners.

Ariatechnik products are now available under our own brand from a team of distribution partners who share a passion for and commitment to high-end audio engineering.

When you choose Ariatechnik you will be working with people who design the products and people who use the products and above all, people who know audio and are passionate about performance and quality.

## GENERAL SPECIFICATIONS

Number of output channels	Four
Total power output, all channels driven	20,000, 10,000 and 6,000 Watts RMS
Audio inputs	4x Analogue, 2x AES3 and 4x Dante™ (factory fitted option)
Digital Signal Processing	High performance 96kHz DSP on all inputs and outputs
Control, monitoring and system status alarms	Ethernet network, RS232 & RS485
Power-save modes	Volt-free relay and contact closure ports. Heartbeat system health output Standby after user defined time with fast wake up on audio Deep ECO sleep after user defined time with wake up on command
System standby and wakeup	Network command, audio detection & contact closure

## POWER OUTPUT

Model	AT44 20k	AT44 10k	AT44 6k
Power specification			
Crest Factor of 4 (12dB), 2 Ohm nominal load	5,000W	2,500W	1,500W
Crest Factor of 2.8 (9dB), 4 Ohm nominal load	3,000W	2,500W	1,500W
Crest Factor of 2 (6dB), 8 Ohm nominal load	1,500W	1,500W	1,500W
Bridged, per channel pair, 4 Ohm load	10,000W	5,000W	3,000W
25V line (CV) operation, Crest Factor 4 (12dB)	1250W	885W	685W
70V line (CV) operation, Crest Factor 4 (12dB)	3500W	2,500W	1,500W
100V line (CV) operation, Crest Factor 4 (12dB)	5,000W	2,500W	1,500W

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## AUDIO PERFORMANCE

Amplifier topology	Ariatechnik high performance Class D
Amplifier modulation scheme	Low feedback, multiple loop, with feed-forward error correction
Dynamic range	Analogue input, better than 113dBA typical
Measured relative to the amplifier output	AES / Dante™ input, better than 114dBA typical
Gain (with all the DSP level controls set to 0dB)	32dB
Frequency response, 4 Ohm load	<7Hz to >30kHz, 4 Ohms, -2.5dB points
Total harmonic distortion, THD	<0.05% typical, 1kHz signal, AES17 filter, 4 Ohm load
Inter-channel crosstalk, worst case combination	better than -85dB at 1kHz and -75dB at 10kHz
Slew rate	>60V per microsecond typical
Damping factor (Ref 8 Ohms)	>800 at amplifier output
Maximum analogue input level	+20dBu
Analogue input sensitivity range for full output	0dBu to +20dBu, continuously adjustable
Analogue input (four channels)	Input 20k Ohm, electronically balanced, link directly connected to input
Analogue ground scheme	AES48 standard compliant
AES3 input (two audio channels)	Transformer isolated with unique active cable equalisation for extended range
AES3 link (two audio channels)	Active AES3 signal regeneration. Automatic direct bypass to the AES3 input ensuring the audio signal will still flow even when the amplifier is powered down
AES3 supported sampling rates	24kHz to 192kHz (auto locking)

## DIGITAL SIGNAL PROCESSING

Resolution	40 bit, Ariatechnik proprietary algorithms
Sample rate	96kHz throughout
Physical inputs to DSP drive modules	4x analogue, 2x AES & 4x Dante™ inputs can be routed to four DSP drive modules
Drive module input processing	Input signal routing, delay, gain, HPF, Phase, Mute
Drive module output processing	EQ: 2x low shelf, 6x PEQ / band pass and FIR shelving filters Source, delay, gain, Phase, Mute, crossover filters, VX limiters
Preset management	EQ: low shelf, 8x PEQ / band pass and shelving filters 10 snapshots for device wide setup, 50 presets for loudspeaker settings Presets can be recalled to sets of outputs or individual outputs as required

## Unique high performance processing

Overlays	Twelve additional independent overlays of EQ, Delay and Gain
Class leading VX limiters	Flexible grouping for effective control of many amplifier channels in large systems
Hardman crossover filters	See the 'speaker protection systems' section
PLC crossover filters	Better out of band rejection than Linkwitz-Riley Unique Linear Phase alignments without the compromises of FIR filters

## POWER SUPPLY

Topology (main power supply)	Ariatechnik's high performance Series Resonant
Topology (auxiliary and standby supplies)	Low quiescent Eco-Flyback
Internally stored energy	>600 Joules
Nominal mains input voltage range	85V to 240V, Power supply automatically detects voltage and configures accordingly
Mains input frequency range	47Hz to 63Hz
Mains inrush current (max for <10ms)	6A at 115V, 12A at 230V

### PROTECTIONS SYSTEMS

Under all circumstances the control and protection systems will endeavour to deliver the maximum power possible for a given set of conditions, applying limiters only in extreme circumstances. Muting will only occur when a dangerous situation is detected, normal operation automatically resuming when the condition clears.

#### System protection

Excessive power supply current or amplifier output current  
Excessive temperature per sub system: PSU, amplifier and DSP  
Mains voltage within acceptable limits  
Internal power rails producing correct output  
Fans operating at correct speed

#### Speaker protection

Sustained clipping prevention  
DC offset protection  
Excessive HF energy (VHF) limiter

#### VX audio output limiters

Vx provides a linear phase virtual crossover and two limiter paths on each output. This unique system delivers effective protection for systems that incorporate passive crossovers.  
Vx Limit Multiband peak limiter, two per output  
Vx Max Multiband overshoot limiter, two per output

X-Max Driver excursion limiter

T-Max Driver thermal limiter (long term power limiter)

#### Monitoring, device statistics and counters

Number of power cycles counted  
Number of mains brownout events counted  
Fan speeds continuously monitored  
Fan under-speed events counted  
Various protection mute events counted  
Driver Impedance continuously monitored

#### Power distribution protection systems

Mains inrush current limiting for soft start and anti-surge

Mains average current limiting for mains breaker management

Randomised initialisation when remotely powered up

#### Monitoring, measurements recorded against time

Supply current

Supply voltage

Thermal Capacity

Each driver current

Each driver impedance

Protection limiting for each output

An inbuilt notification system is provided that indicates problems to remote devices either via the network or the Volt-free changeover relay contacts accessible on the rear panel.

### Physical

Cooling  
Analogue IN and LINK  
AES3 IN and LINK  
Amplifier output  
Mains input connector  
Dante Primary and Secondary  
Ethernet network  
RS232 and RS485  
Relay, 'heartbeat' outputs  
Contact closure inputs  
Front panel LED indicators  
Enclosure, all models  
Net Weight

Dual vari-speed fans, front to back airflow. Washable, tool-less change filter media.  
Phoenix™ pluggable terminal block (mating plug supplied)  
Phoenix™ pluggable terminal block (mating plug supplied)  
Neutrik Speakon™ NL4 connectors  
Neutrik 32A Powercon™  
2x Shielded RJ45  
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Phoenix™ pluggable terminal block (mating plug supplied)  
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Phoenix™ pluggable terminal block (mating plug supplied)  
Per channel - Input level, output level & status  
Standard 19" 2U (88mm), 357mm (14") deep with handles and optional rear support  
12.5kg (27.5 pounds).