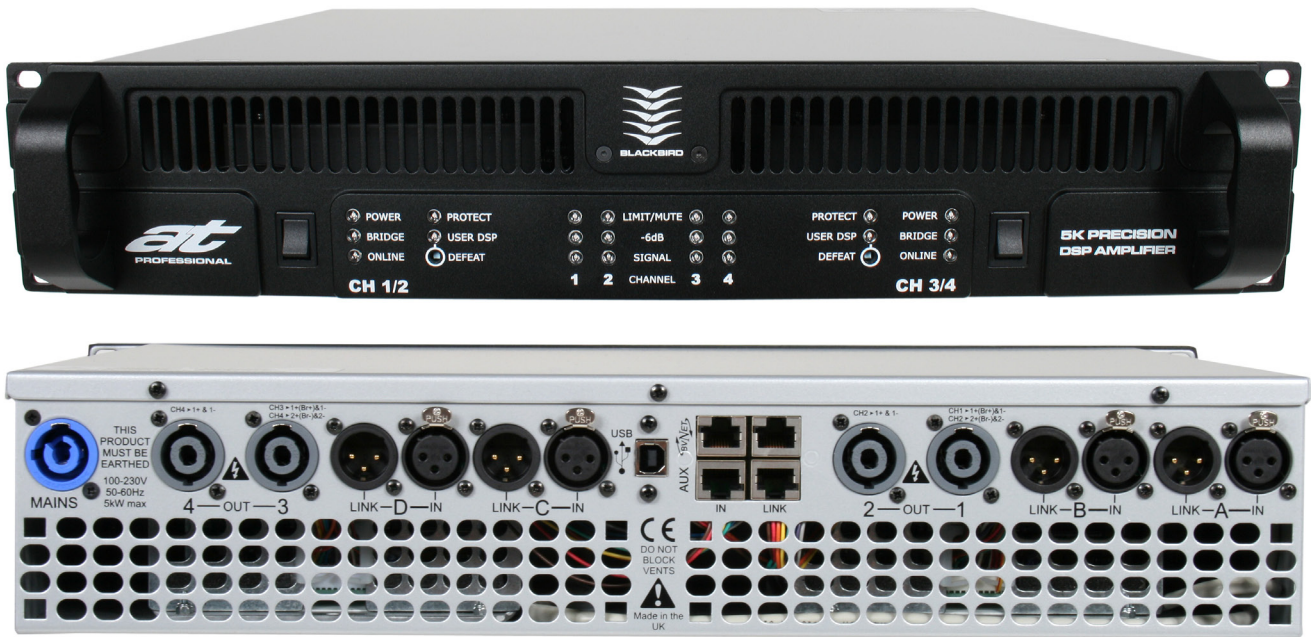# 5K
PRECISION DSP AMPLIFIER

The Blackbird 5K Precision DSP Amplifier integrates four channels of highly efficient Class D Amplification complete with comprehensive DSP, light weight Switch Mode Power Supplies and a fully featured network addressed control system to provide an economical 2RU power amplifier with unparalleled flexibility and output power.

Each of the four Class D amplifiers develop in excess of 1250 Watts RMS of sonically transparent amplification and are capable of driving 2 Ohm or 70/100 Volt Line loads. Amplifier pairs can be bridged to provide 2500 Watts RMS. The amplifier provides comprehensive protection for Over Current and Over Temperature operating conditions. The amplifier's performance data is logged for the last 92 hours of operation and can be viewed via the PODWARE control software.

The Blackbird 5K utilises two totally independent Switch Mode Power Supplies designed to meet the specific requirements of the amplifier modules, eliminating many of the potential sources of noise and distortion. The power supplies feature intelligent mains voltage detection allowing global operation without reconfiguration. The amplifiers and power supplies are cooled by variable speed fans.

Each pair of the Blackbird 5K channels contains a fully featured 96kHz 24 Bit digital loudspeaker management and amplifier control system. A full complement of DSP capabilities are provided including crossover functions, equalisation, time delay and limiting. All DSP control parameters and amplifier status monitors are instantly accessible using a personal computer and the PODWARE control software which communicates with the amplifier via USB or the BvNET Interface. Networking multiple amplifiers and other devices which communicate via BvNET allows an entire audio system to be operated, optimised and monitored in real time from a centralised control location. In addition to remote monitoring, the Blackbird 5K front panel features multiple colour coded LED indicators for signal, status and protection functions.

The Blackbird 5K is a 19" 2RU chassis weighing only 9Kg, making it the ideal choice for all touring applications. The amplifier is eminently suited for use in permanently installed sound reinforcement systems due to the unsurpassed power, flexibility, control and system monitoring capabilities.

Key Features

- ▶ Sonically Transparent Class D Amplifiers
- ▶ Four 1250 Watts RMS Channels
- ▶ 2 Ohm and 70V / 100V Line Capability
- ▶ 96kHz 24 Bit DSP with Real-Time Monitoring
- ▶ Comprehensive Protection with Data Logging
- ▶ BvNET and USB for Amplifier Control and Status Monitoring

Overview

- ▶ Power Output   450W into 8 Ohms
  per channel   800W into 4 Ohms
                    1250W into 2 Ohms
- ▶ Power Supply: Switch Mode Power Supply
- ▶ Dimensions: 482mm x 88mm x 395mm
                   (W x H x D) Including handles
- ▶ Weight: 9Kg

Suggested Applications

- ▶ Touring Systems
- ▶ Live Music Production
- ▶ Performance Theatre Systems
- ▶ Corporate Audiovisual
- ▶ Stadium and Arena Systems
- ▶ Dance Club Systems

Amplification

Audio

Input Impedance	10k balanced
Max Input Level	+20dBu
Frequency Response	20Hz - 20kHz+/-0.5dB into 4 Ohms
Output Noise	-106dB A weighted
Distortion	<0.05% (1kHz, -3dB output. 22kHz BW)

Protection Systems

Output Over Current	Initially gain is reduced to maintain control. Persistent overcurrent causes shutdown.
Over Temperature	Limiters applied
Mains Brownout	Automatic protection & recovery
Switch on Surge	Soft-start current inrush limiting
DC on Output	Immediate shutdown. Cycle power to restart.

Amplifiers

Type	High efficiency Class D
Number of Channels	Four
Output Power	RMS program, 20Hz-20kHz all channels driven
Per Channel	1250W into 2 Ohms
	800W into 4 Ohms
	450W into 8 Ohms
Per Bridged Pair	2500W into 4 Ohms
	1600W into 8 Ohms
	900 into 16 Ohms
Slew Rate	>80V/u s
Damping Factor	120 ref 8 Ohms
Efficiency	>90% typical
70V/100V Line Capability	

Physical

Dimensions	482mm x 88mm x 395mm (W x H x D) Including handles
Weight	9 Kgs

Operating temperature range 0 to +40°C

Relative humidity range 0 to 80% (non-condensing)

Power Supplies

Type	High Current Switchmode
Number	Two, fully independent
Efficiency	>90% typical
Input Voltage	115V / 230V nominal +/- 10%
Input Voltage Selection	Automatic
Mains Frequency Range	45Hz - 65Hz
Other Features	Automatic soft-start
	Automatic brownout recovery
	Remote shutdown
	Automatic over voltage protection

Accessories

Airflow filtering kit
Rear rack support kit
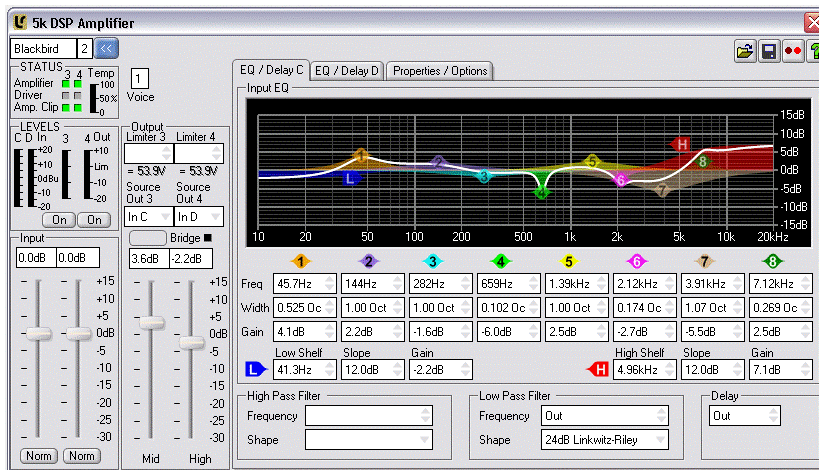BvNET Interface
PODWARE Control Software

Thermal

One variable speed fan per pair of channels and an additional variable speed fan per amplifier.
Airflow is from the rear to the front.

Indicators and Controls

Per Channel	Signal, -6dB, Limit/ Mute
Per Channel Pair	Power, Protect, Bridge, Network, User DSP active
Controls per Channel Pair	
Front Panel	User DSP Defeat
	Power Switch
Rear Panel	Two Contact Closure Inputs
	Shutdown Input
Monitoring Facilities	Input Signal Level
	Output Signal Level
	Output Current Level
	Temperature
	Limiter Operation
	Protection System Operation
	Driver Impedance

Connections

Mains	Neutrik Powercon®
Audio Input	3 Pin Female XLR
Audio Link	3 Pin Male XLR
Output	Neutrik NL4 Speakon®
USB	Type B
Network (Input & Link)	2x RJ45 Socket
Auxiliary (Input & Link)	2x RJ45 Socket

PODWARE Control Software allows all the important system parameters to be monitored and displayed.

Manufactured in the UK

▶ For further information and downloads visit
www.atprofessional.com.au

at PROFESSIONAL AUDIO SYSTEMS

Acoustic Technologies

8-10 Staple Street, Seventeen Mile Rocks
Queensland 4073, Australia
Phone (617) 3376-4122 | Fax (617) 3376-5793
Web www.atprofessional.com.au
Email info@atprofessional.com.au