

## Technical Specifications

	DQL-2.4	DQL-4.0	DQL-5.5	DQL-7.0
<b>Output Power</b>				
<i>Continuous Average Power</i>				
<i>RMS, 1kHz, 1.0% THD+N</i>				
@ 2Ω	2x 1200 W	2x 1950 W	2x 2700 W	2x 3450 W
@ 4Ω	2x 800 W	2x 1300 W	2x 1800 W	2x 2300 W
@ 8Ω	2x 450 W	2x750 W	2x1000 W	2x 1300 W
Bridge @ 4Ω	2400 W	3900 W	5400 W	6900 W
Bridge @ 8Ω	1600 W	2600 W	3600 W	4600 W
<i>Pink Noise 12dB Crest Factor</i>				
@ 2Ω	2x 1600 W	2x 2600 W	2x 3600 W	2x 4600 W
@ 4Ω	2x 950 W	2x 1580 W	2x 2100 W	2x 2700 W
<b>Frequency Response</b>				
Power Bandwidth ±0.25dB	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz
<b>Phase Response</b>				
@ 1 watt 20Hz-20kHz	±15 deg	±15 deg	±15 deg	±15 deg
<b>Total Harmonic Distortion</b>				
20Hz-20kHz	<0.1%	<0.1%	<0.1%	<0.1%
<b>Intermodulation Distortion</b>				
SMPTE	<0.05%	<0.05%	<0.05%	<0.05%
<b>Crosstalk</b>				
20Hz-20kHz	>75 dB	>75 dB	>75 dB	>75 dB
<b>Voltage Gain</b>				
	33.1 dB	33.1 dB	33.1 dB	33.1 dB
<b>Sensitivity</b>				
Rated Power @ 4Ω	1.3 V	1.6 V	1.9 V	2.1 V
<b>Signal-to-Noise Ratio</b>				
A weighting	104 dB	105 dB	105 dB	107 dB
<b>Required AC Mains</b>				
230V / 50 Hz or 120V / 60Hz				
1/8 rated power (230V @4Ω)	4 A	7 A	10 A	13 A
<b>Dimensions</b>				
W x H x D (mm)	483x89x460	483x89x460	483x89x460	483x89x460
W x H x D (inches)	19x3.5x18.1	19x3.5x18.1	19x3.5x18.1	19x3.5x18.1
<b>Weight</b>				
Shipping	14Kg-30.4Lbs	14Kg-30.4Lbs	15Kg-32.6Lbs	15Kg-32.6Lbs
Net	13Kg-28.3Lbs	13Kg-28.3Lbs	14Kg-30.4Lbs	14Kg-30.4Lbs
<b>Protections</b>				
Soft-start, Turn-on Turn-off transients, Muting at turn-on, Over-heating, DC, RF, Short-circuit (CSP), Open or mismatched loads, Overloaded power supply, Input overload (ICL), CRO				



## Professional Power Amplifiers



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**DQL Series**  
 QuantaPulse™ Power Tech

*The times are a changin' said Dylan some years ago and indeed they are. Our industry is also going through one of its most important changes ever. Technicians, roadies and rig owners are demanding their unquestionable share for comfort in their ever more hard chores. No one can be deaf to logical requests.*

*D2L Series is our response to practical professionals not wanting to loose any of the advantages of their current gear, but gaining the easyness deriving from light-weight amp racks.*

*For the project our R&D department received very precise instructions. They were the sum of our client's feed back information and our manufacturer's expertise. —"Design something light but never below our present performance" — We sincerely think they have succeeded.*

*The looks are familiar but in fact every part has been redesigned in the D2L for optimal results. The new cooling process is 20% more efficient, the heat sinks include the guiding slots permitting a simple, yet precise wind tunnel that sends the air flow where it is mostly needed. The module's layout will ring a bell, we are adepts of proven technology. We have just added the necessary parts to match the new power supply.*

The DQL power supply is a real Power Station, based on the QuantaPulse technology, it gives the amps all the power needed to make you think you are running your rig with conventional amplification. Isn't that a change?.

Built inside its own separate chassis, the supply features a specific cooling fan to obtain complete independence from the main temperature control. With this design, none of the modular advantages available in our current series are lost. Service technicians will appreciate.

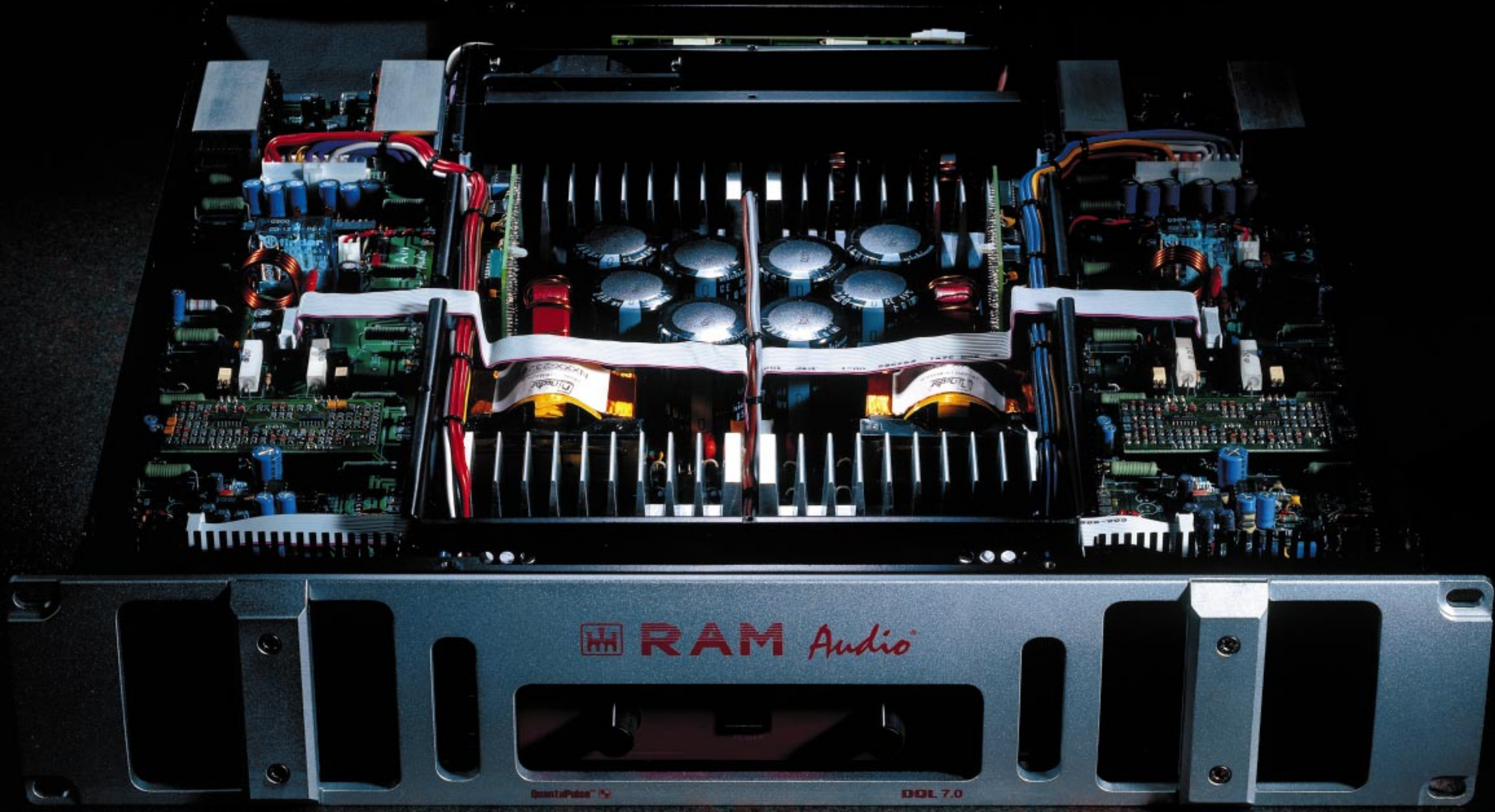
Inside the DQL they will also find all the safety features that have made their lives a little bit easier.



The compact control boards, placed unobstrusively on both sides of the independent chassis, generate all the driving signals and control check points, needed by the QuantaPulse power supply.



**QuantaPulse™** Power Supply



 **RAM Audio**

QuantaPulse™

DOL 7.0

# DQL Series Protection Systems



## Features

- Up to 7.000 Watts RMS per unit
- 2U 14Kg Custom alloy chassis throughout the series
- QuantaPulse Technology Power Supply in self-contained independant chassis
- Modular construction for "technician friendly" servicing
- Symmetrical layout for even weight distribution
- Dual, Bridged or Parallel operation
- Twin balanced inputs (Neutrik® XLR connectors)
- 41 step detented input attenuators
- High quality components used throughout
- Dual Binding posts & Neutrik® Speakon Output Connectors combination
- Dual, continously variable speed axial fans
- Efficient back to front cooling
- Independent power supply cooling fan
- OK, Temp, Fault, Signal and ICL indicators
- Duraluminium, 8 mm thick front panel
- Unobtrusive carrying handles

## Protections

- Calibrated mains fuse
- Independent channel supply rails fuses
- Input signal muting at turn-on
- Permanent Short-circuit Protection (SCP)
- Thermal overload protection
- Intelligent Clip Limiter (ICL)
- Progressive Ramp signal input
- Currentless Relay Operation (CRO)

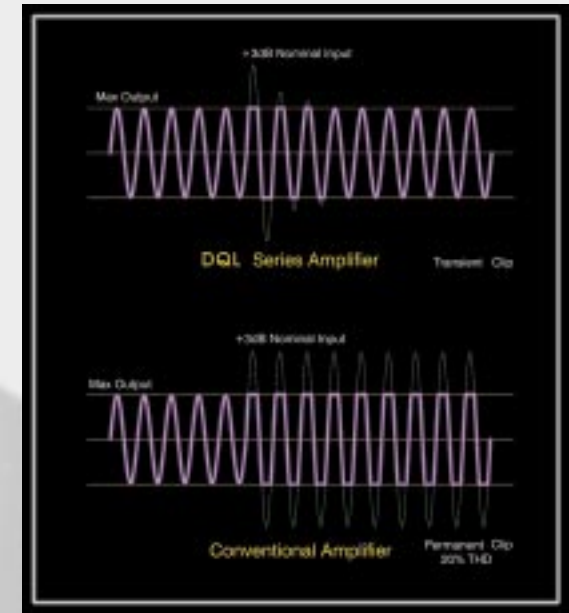


## I.C.L.™ - INTELLIGENT CLIP LIMITER:

The RAM Audio ICL is an anticlip system that differentiates from conventional clip reduction systems in its dynamic tracking of the power supply rail values, to provide instant current/voltage demand and thereby eliminating any limiting of the signal dynamics. More like a valve amplifier, RAM Audio's ICL system maintains sonic quality even when the amplifiers have exceeded the threshold of clipping, providing very high dynamics at negligible distortion levels.

Commonly the anticlip systems limit the input signal matching it with to a fixed reference. The ICL system varies its threshold reference depending on the status of the output signal and the power supply rails. When the system detects the clipping status, it compares the above mentioned parameters, then changes the input signal amplitude to fit the signal between the supply levels, thus avoiding clipping. This change is made on the basis of two time constants, attack and release, this permits no dynamics loss in the first cycles and avoids the "pumping" effect.

This system avoids effectively continuous clipping situations, even when an excessive signal is applied to the amplifier, and protects the speakers against the high frequency harmonics produced.



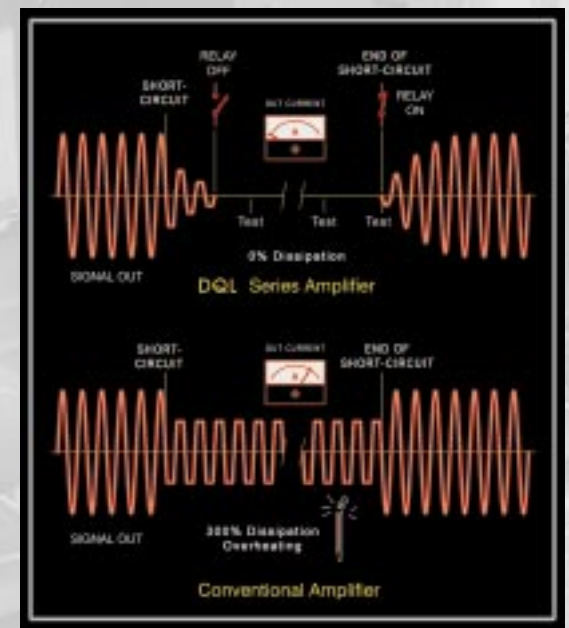
## C.S.P.™ - CONTINUOUS SHORT-CIRCUIT PROTECTION:

Conventional short-circuit protection systems rely on simple output current limitation where excessive current through the output terminals continues to be conducted through the output devices, causing excessive stress. This may still lead to failure of the output transistors and associated circuitry, depending on the nature and duration of the short-circuit.

Also, conventional current limiting systems find it hard to differentiate between a direct short-circuit across the speaker terminals and high current transients found in normal music operation. The CSP is a sophisticated protection system where the output current is continually monitored and set according to the load impedance, relative to zero ohms impedance. This allows dynamic performance at relatively higher current ratings in the case of music, but much lower current values in the case of a direct short-circuit or excessively low load impedance.

At the onset of current limiting, the CSP circuit activates, opening the output relay which disconnects the excessive load. Every few seconds, the CSP monitors the short-circuit and maintains that situation if the short-circuit condition persists. This cycle repeats until the load returns to the correct value. The CSP system saves the output transistors from the high current stress of short-circuits, and in conjunction with the CRO system, protects the output relays and all the associated circuitry.

This highly sophisticated current limiting system allows improved dynamic sonic performance at higher power levels, and at the same time, provides the amplifiers with a high degree of immunity against continuous short-circuits and mismatched loads.



## C.R.O.™ - CURRENTLESS RELAY OPERATION:

The CRO is a system that protects the amplifier components and avoids transient situations at the speaker outputs when the output relay opens due to an abnormal event (high temperature, short-circuit, etc).

In a conventional amplifier the relay operates with all the signal voltage between its contacts and has to interrupt all the current this voltage produces through the load. This type of operation reduces considerably the relay's life because of the electric arc generated between the contacts. This arc may damage the contacts permanently or at the least, increase the contact resistance, decreasing the damping factor dramatically.

RAM Audio has developed the CRO protection system to avoid those dangerous situations. Basically, the CRO anticipates to the opening or closing of the output relay acting on the input signal, muting it, to permit the relay contacts to work always with zero current.

