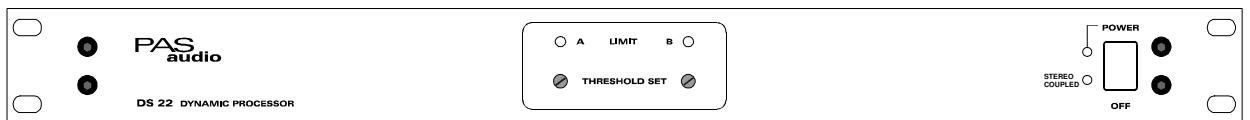


DS 22 Dual Dynamic Processor

User`s Manual

Version 1. March 2006



Professional audio systems

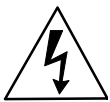
ENGLISH

SAFTY INSTRUCTIONS

CAUTION: To reduce the risk of electrical shock, do not remove the cover. No user serviceable parts inside, refer servicing to qualified personal.



WARNING: To reduce the risk of fire or electrical shock, do not expose this appliance to rain or moisture.



This symbol, alerts you to the presence of uninsulated dangerous voltage inside the enclosure, voltage that may be sufficient to constitute a risk of shock.



This symbol, alerts you to important operating and maintenance instructions in the accompanying literature. Read the manual

DETAILED INSTRUCTIONS:

1. All the safty and operation instructions should be read before the appliance is operated.
2. The safty and operating instructions should be retained for future reference.
3. All warnings on the appliance and in the operating instructions should be adhered to.
4. All operation and user instructions should be followed.
5. The appliance should not be used near water (near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool etc.)
6. The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa rug, or similar surface that may block the ventilation openings: or placed in a built-in installation, such as bookcase or cabinet that may impede the flow of air through the ventilation openings.
7. The appliance should be situated away from heat sources such as radiators, heat registers, stoves or other appliances, including amplifiers, that produce heat.
8. Connect the equipment to a power supply of the correct voltage, using only the cables recommended by the manufacturer, as specified in the operating instructions and/or shown on the connection side of the equipment.
9. The appliance may only be connected to a legally approved earthed mains power supply.
10. The power cable or power cord must be positioned such that it cannot be walked on in normal use, and objekts which might damage the cable or cord cannot be placed on it or against it. Special attention must be paid to the point at which the cable is attached to the appliance and where the cable is connected to the power supply.
11. Ensure that foreign objects and liquids cannot get into the appliance.
12. The appliance should be cleaned only as recommended by the manufacturer.
13. The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
14. The appliance should be serviced by qualified service personnel when:
 - * the power supply cord or the plug has been damaged
 - * objects have fallen, or liquid has been spilled into the appliance
 - * the appliance has been exposed to rain
 - * the appliance does not appear to operate normally or exhibits a marked change in performance
 - * the appliance has been dropped, or the enclosure damaged.
15. The user should not attempt to service the appliance beyond that which is described in the Operating Instructions. All other servicing should be referred to qualified service personnel.

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PAS
audio
PROFESSIONAL PRODUCTS

WARRANTY

PAS audio warrants all new equipment 5 years warranty from date of purchase. Warranty is proof of the original invoice document. Within this period all equipment, with fully detectable defects without charge for materials and labor will be repaired by us.

Warranty exclusion

Excluded from warranty-claims is unprofessional actions of Customer or any third party on the device. The customer has to prove the assertion of warranty-claims, that the defects were not caused by circumstances that lie in his danger zone, such as incorrect operation, incorrect installation, incorrect line voltage, or improper interference.

Also excluded from warranty-claims are devices without serial number, made with deliberately defaced or altered serial number and modified equipment, if any changes were not made by PAS audio or authorized persons.

Warranty applies only to the device itself, not due to error caused by a defective device.

Due to the high quality of the components and materials we provide on this device

5 year warranty

detailed information on our warranty terms, please see page 4 of this manual. (see above)

CHANGES

We reserve the right to make changes from time to time on our equipment, without prior notice or notification.

PAS audio
March 2006

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FOREWORD

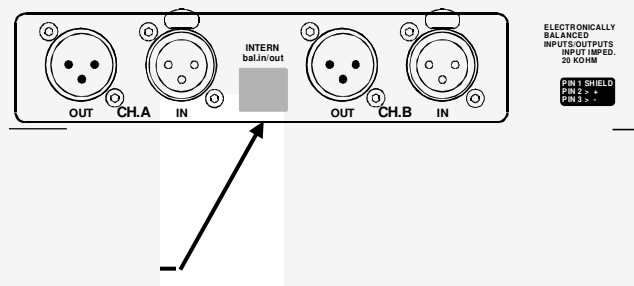
Congratulations! In purchasing our Limiter DS 22S you have acquired a limiter whose small size belies its incredible versatility and superlative audio performance. Its excellent dynamic range, the extremely low noise level and the outstanding price-performance ratio makes the DS-22S Controller an advantageous alternative to conventional limiters and controller solutions - even in the critical field of permanent installation.

Keep this reference manual carefully!

START / SETTINGS

XLR Input/Output connectors

The DS 22S Controller`s Inputs/Outputs are electronically balanced. (for connection help take a look at page 8)



Internal direct 5-pin connectors (option)

There is also the possibility that the unit not connected to the rear panel XLR connectors with power amplifiers / mixers, etc., but inside the device balanced cables directly without external separable connector to connect. Unscrew the top cover, (power first disconnect from the mains!) and connect the electrical cable through the rear opening devices to the internal header. The label next to the bus bar shows the pin assignments. After adjusting the limiter, the opening (threshold set) in the front panel could be sealed with the two red stickers, so that a bridging of the device or manipulation only possible through the expansion and opening the top cover. (Demanded by labor inspectorates in use of the limiter as a volume limiter, for example, in nightclubs).

Switches

Power-On Switch

Switching the AC-Mains. A red LED lights up at the front panel, if the power switch is at the "ON" position.

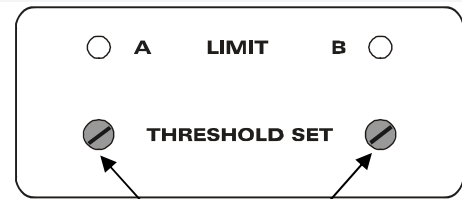
Threshold adjustment.

At the front panel is the display of each LED and the adjustment controls for the starting point of limitation applied. Using a small screwdriver the starting point (threshold set) can be adjusted from -14 dBV to +13 dBV. If the speakers should be able to handle the full output power of the amplifier, the limit should be start 1 dB below the input voltage which is necessary to provide full output power of the amplifier.

Thus, the full output power is available, but the speakers are protected from clipping of the output amplifier. Likewise, of

course, is a power limit of a strong amplifier to the load capacity of the connected speakers possible, and keeping a certain predetermined volume. As mentioned above, when the indicator light LED begins to

limit the incoming signal. One can thus determine with the help of the adjusting and monitoring the light-emitting diode limiter action. The factory setting is at +3 dBV. Clockwise rotation means earlier onset of the limit, counterclockwise means later onset of the limiter.



THRESHOLD ADJUSTMENT

LIMIT Indication

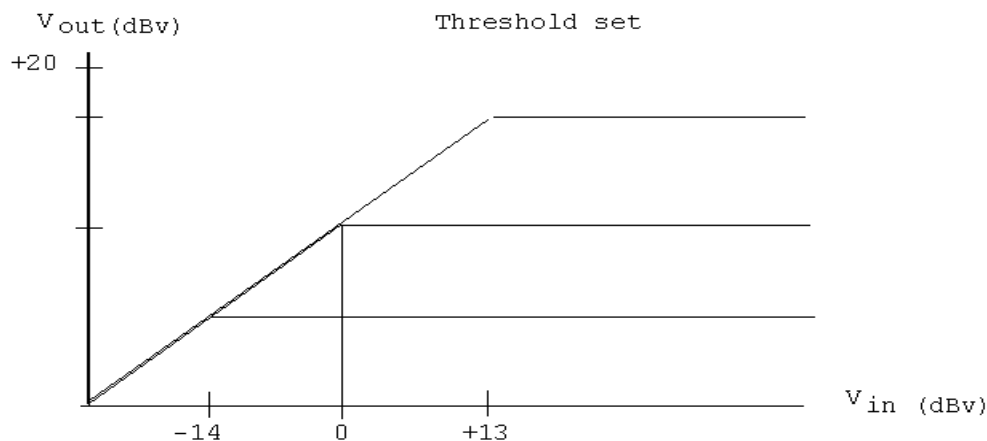
As soon as the audio input level exceeds the threshold set-level, the LIMIT-LED lights up.

Stereo-Coupled Switch (at the rear panel)

The DS 22S can run in either dual channel mode or stereo-coupled mode. In dual channel mode both channels operate independently. In stereo-coupled mode the control voltages of the two channels are switched together. The channel with the higher level controls both channels. So, the stereo base is always the same. A yellow LED at the front panel lights when the DS 22S is switched in stereo-coupled mode.

NOTE!

The limiter should work only in the upper dynamic range. I.e. to protect the connected speakers are used. The starting point of the DS 22 is then set correctly when the LED lights up at peaks. Permanent illumination of the display means, for the proper adjustment of the cutoff point to high input voltage of eg a mixer.



That (dbx) 2150 SERIES VOLTAGE-CONTROLLED AMPLIFIERS

GENERAL DISCRIPTION

The That (dbx) 2150 Series integrated-circuit, voltage-controlled amplifiers (VCAS) are high-performance, current-in/current-out devices with dual-polarity, voltage-sensitive control ports. They require little external support circuitry and are housed in a plastic 8-pin single-in-line (SIP) package, thereby affording unusually high PCB packing densities. Combining a high-gain-bandwidth product with low noise, low distortion, and low input-bias current, these devices offer performance similar to discrete or modular VCAs with the economy of ICs.

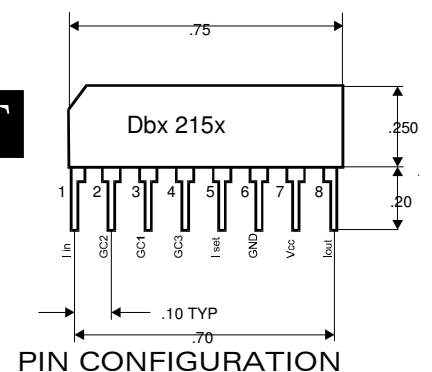
These VCAs may be used in VCF and VCO designs as well as in audio mixing console applications including voltage-controlled faders, voltage-controlled panners, voltage-controlled equalizers, and console automation systems.



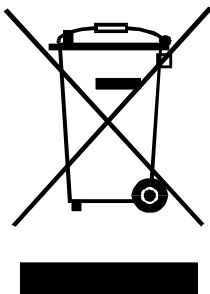
FEATURES

- Extremely wide gain/attenuation control
- Low distortion (2150A, 2151)
- Low noise
- 20Hz-20kHz response even at high gains
- "Deci-1inear" operation for logarithmic gain control
- SIP package for high density PCB designs
- Dual gain-control ports
- Low voltage operation, to 8 volt differential

THAT



Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems).



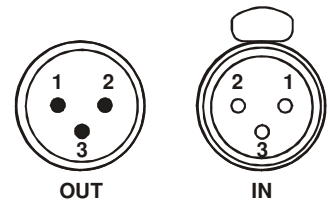
This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Specifications:

Threshold set	-14 dBv bis +13dBv
Ratio	∞:1
Attack Time (100% recovery)	auto
Release Time (100% recovery)	auto
Frequency response (0.5dB)	10Hz-50KHz
Gain	0dB
Nominal Input Level	0dBV
Inputs/Outputs	XLR
Input/Output level max.	+21 dBu
Input impedance electronically balanced	20 KOhm
Output impedance electronically balanced.	60 Ohm
Signal to noise ratio (22Hz-22KHz, 0dB Gain)	< 97dBu
THD	< 0.01%
Limiting	VCA
Display limiting	LED rot
Display stereo-coupled	LED gelb
Display Power Supply	LED rot
Power Requirements	220-230VAC 50/60Hz
Dimensions (WxHxD)	19" 1HE (44x483x175 mm)

Input/Output connectors

Input balanced	Output balanced	Gain
2) (+)	2) (+)	1.0 = 0dB
3) (-)	3) (-)	
1) shield	1) shield	



Input balanced	Output unbalanced	Gain
2) (+)	2) (+)	0.25 = -12dB
3) NC	3) NC	
1) shield	1) shield	

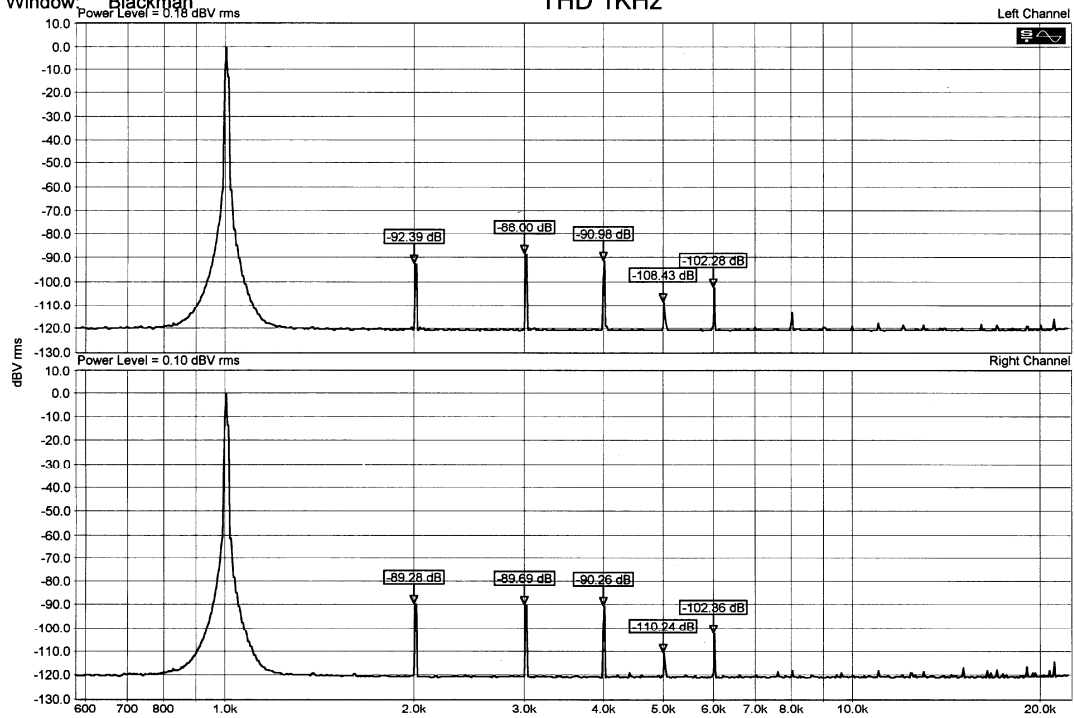
Input unbalanced	Output unbalanced	Gain
2) (+)	2) (+)	0.50 = -6dB
3) shield	3) NC	
1) shield	1) shield	

Input unbalanced	Output balanced	Gain
2) (+)	2) (+)	1.0 = 0dB
3) shield	3) (-)	
1) shield	1) shield	

Sampling: 48000 Hz
 FFT size: 16384
 Averaging: Infinite
 Window: Blackman

PAS audio DS 22 Dynamic Processor
 THD 1KHz

Printed by: SpectraLAB - FFT Spectral Analysis System
 Licensed to: PS
 Wed Jun 28 23:13:59 2000



Sampling: 48000 Hz
 FFT size: 16384
 Averaging: 2
 Window: Blackman

PAS audio DS 22 Dynamic Processor
 IMD 60/7000 Hz 4:1

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