

Ovation High Fidelity User Manual

Model 1721
240 Watt Stereo
Power Amplifier

Engineered for Art™

Model 1721 Stereo Power Amplifier Owner's Manual

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O V A T I O N

H I G H F I D E L I T Y

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Welcome to Ovation High Fidelity.

Thank you for purchasing this Ovation High Fidelity product. We have taken every care in the design, engineering and manufacture to ensure the highest levels of craftsmanship and quality so that you will have many years of trouble free operation and musical enjoyment.

Proof of Purchase

Should the item be returned under warranty, proof of purchase will be required. Therefore, you must keep the original purchase receipt. We suggest you staple this into the rear inside cover of this user manual and retain it in a safe place after reading it. We always include a hardcopy of the purchase invoice with every shipment.

Product Usage Declaration

This product is designed for use in a domestic hi-fi system driving loudspeakers with a rated impedance of 8 Ω .

Warranty: -

- This product is warranted free of manufacturing defects for a period of five years from date of purchase.
- This warranty excludes cases where the product is abused, or used for purposes other than which it was intended, or modified in anyway whatsoever
- The warranty is not transferable
- Remote controls are warranted for a period of one year from date of purchase. The warranty does not cover damage due to battery leakage or battery replacement
- The costs of sending the product back to the company under warranty, and its subsequent return, are for the account of the purchaser

Returns Policy/30 Day Money Back Guarantee

Should you not be 100% satisfied with your product for any reason, you may return it within 30 days from date of purchase for a full refund, provided:-

- The product is returned packed in the original packaging
- The product is not damaged in anyway whatsoever either electrically or cosmetically
- The company reserves the right to deduct from the refund any costs required to make good any damage to products returned by customers.
- The costs of returning the product back to the company under the 30-day money back guarantee are for the account of the purchaser.

The Ovation High Fidelity Company reserves the right to modify and/or make technical and/or design changes to the design of its products without obligation to prior purchasers

Unpacking Your New Product

Do not damage the carton, associated packaging materials or any documentation. Retain these items in a safe, dry place until after your 30 day money-back guarantee has expired.

Check that you have the following items in the carton once opened: -

- Model 1721 Power Amplifier Unit
- IEC mains lead with appropriate mains plug for your region*
- User manual (this document)
- Registration warranty card

Where to Locate Your New Model 1721 Stereo Power Amplifier

Locate your Power Amplifier in a well-ventilated area away from sources of heat, dust and humidity and direct sunlight. You should position the product alongside your preamplifier. We do not recommend that you stack high fidelity components on top of one another as this could interfere with ventilation.

You may not place any Ovation High Fidelity product directly on a carpet as this will obstruct airflow and will lead to overheating.

This amplifier will run warm to the touch – this is quite normal.

Make sure when locating the product, that no liquids or any other foreign objects can enter the unit through the ventilation holes.

Keep this equipment out of the reach of children.

*The IEC Mains cable is provided as a convenience so that you can get your amplifier up and running immediately. Please see your dealer who can assist you in selecting suitable high-quality cables for long term use in your system

Warning!

Ovation High Fidelity products contain no user serviceable parts.

There are lethal mains voltages present inside the unit.

DO NOT open the product under any circumstances - If faulty, refer it back to Ovation High Fidelity if still within the warranty period or to a qualified, authorized service engineer if not.

This product must be Earthed (Grounded) when in use. Use the supplied country specific mains cable to ensure this.

Never use an 'Earth Lifter' ('Ground Lifter') or any similar device that interferes with the electrical safety of this product

If you are not going to be using your equipment for any length of time – e.g. going away on vacation - it is advisable to unplug it from the mains.

Cleaning your Ovation High Fidelity Product

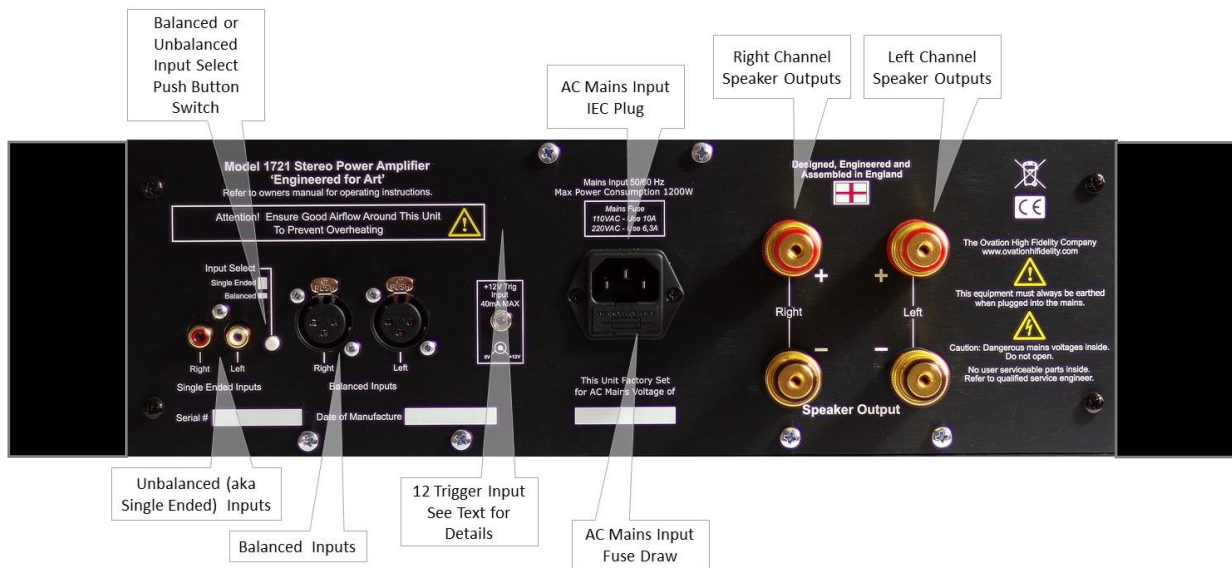
1. Unplug the unit from the mains supply
2. Use a soft, slightly damp cloth or chamois leather wipe to clean the unit.
3. Use a dry, lint free cloth to wipe the unit down after step 2 is completed
4. Never use any abrasive cleaning agent to clean the unit – e.g. Cif, Vim, CLR or Softscrub
5. Never use furniture polish or similar oil based agents to clean your unit
6. Never use any solvent based cleaner like petroleum (i.e. gasoline), turpentine, benzene, methylated spirits or similar

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Model 1721 Front Panel

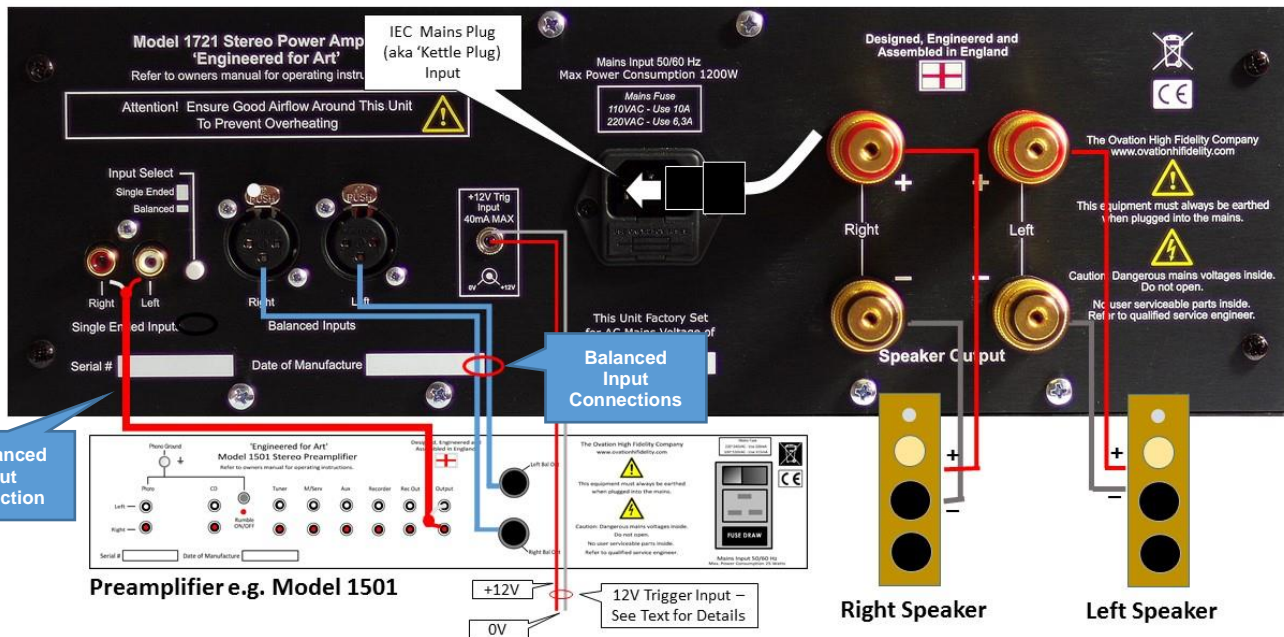


Model 1721 Rear Panel Key



The figure above identifies the key components on the Model 1721 power amplifier rear panel.

Connecting a Preamplifier to the Model 1721 Stereo Power Amplifier



Model 1721 Power Amplifier Connection Diagram

The figure above shows how to connect your Model 1721 power amplifier to your preamplifier.

Note that you do not need to connect both the single ended and the balanced interconnects – you only need to connect the single ended inputs or the balanced inputs.

We recommend where possible, you use balanced interconnects for best performance.

Always make sure that you have the 'Input Select' switch on the rear panel in the correct position – depressed for balanced inputs and out for single ended (aka unbalanced) inputs.

We recommend the Ovation High Fidelity Model 1501 High Resolution Stereo Preamplifier for use with the Model 1721 Power Amplifier.

Connecting Loudspeakers to Your Model 1721 Stereo Power Amplifier

Your Model 1721 Power Amplifier is designed for operation with 8 Ω rated loudspeakers. You should only connect 1 pair of speakers to your amplifier for best performance. Note that during the short power-up and power down periods, the loudspeakers are automatically disconnected from the amplifier.

Powering ON and OFF

To power up the amplifier, depress the silver pushbutton located in the center of the front panel. The **GREEN** indicator LED beneath the pushbutton switch will flash twice per second for 5 seconds. You will hear a click after 3 seconds or so - this is the in-rush power limiting bypass relay energizing. After a further second or two, the amplifier output will engage, allowing sound to come from the loudspeakers. The **GREEN** indicator LED will remain ON.

To power down, simply press and release the push button again. The power in-rush relay will click as it de-energizes; the amplifier will disengage the loudspeakers and the **GREEN** indicator LED will slowly extinguish over the course of about 60 seconds.

Front Panel LED Status Indicator

The status of your amplifier can be determined from the front panel LED as detailed in the table below:-

Front Panel LED Indication	Amplifier Status
OFF	Amplifier is powered OFF
GREEN and flashing twice per second immediately after applying power	Amplifier is in power-up cycle which lasts for 5 seconds. The loudspeaker not connected. If the amplifier remains in this state <u>or</u> enters this condition during normal operation, it indicates a fault.
GREEN ON (i.e. not flashing)	Amplifier is powered up and loudspeakers are connected to the output. This is the normal operating mode.
GREEN but then flashing RED intermittently on loud music	Amplifier output is clipping i.e. overloading – reduce the volume. The amplifier clipping indication is activated for powers in excess of 200 Watts RMS into 8 Ohms
ORANGE	The amplifier is too HOT and will shortly automatically disconnect the loudspeakers if you continue to play the music too loudly or do not dramatically improve the amplifier ventilation. Do not use your amplifier on a carpet as this blocks the underside ventilation holes and can lead to overheating
Flashing RED and ORANGE twice a second	The amplifier has automatically disconnected the loudspeakers due to over-temperature. The loudspeakers will not be re-engaged until the temperature of the heatsinks drops to below 63C
GREEN and flashing twice per second	If this continues for more than 5 seconds after power-up, <u>or</u> , the amplifier suddenly dis-engages the loudspeakers and the GREEN LED flashes twice a second, the amplifier has an internal fault. Please contact your dealer to arrange a service

Table 1 – Status Indication

Your amplifier is equipped with sophisticated protection functions that include DC offset detection to protect your speakers, output short circuit/overcurrent protection and overtemperature protection. If any of these protection features are activated, the unit will automatically disconnect the loudspeakers.

About the Protection Features on Your Amplifier

Overcurrent Protection. If the load impedance of the speakers drops significantly below 2 Ω when the amplifier is sustaining full output power or the connection from the amplifier to a loudspeaker experiences a short circuit, the amplifier output stage protection circuit will activate. This will instantly disconnect the loudspeakers from the amplifier to protect it and the speakers from damage. The LED on the front panel will flash **GREEN** twice per second if this happens.

The amplifier will have to be powered OFF for at least 3 to 5 minutes before it will power up normally again.

Note that if the cause of the problem is a short circuit in your loudspeaker connection, the amplifier will shut down again when re-applying power. You should therefore ***always check carefully*** to ensure you do not have a short circuit in your loudspeaker connection after a shutdown.

Overtemperature Protection. If the amplifier heatsink temperature exceeds 65° C (this is too hot to touch, but in normal operation it is *highly unlikely* to get this hot), the front panel LED will turn **ORANGE** while above this temperature.

If you do not reduce the volume, or allow the amplifier to cool and the temperature continues to rise, it will disconnect the loudspeakers at 70° C. The front panel LED will flash **ORANGE** then **RED** twice per second. The loudspeakers will not be re-connected until the temperature of the heatsinks drops *below* 63° C. Do not locate your amplifier directly on a carpet when in use. This blocks the ventilation holes and severely restricts airflow through the amplifier which can lead to overheating.

DC (Direct current) Offset Protection. If the amplifier develops an internal fault, and tries to output DC to the loudspeakers, the internal protection circuit will immediately disconnect the loudspeakers and the front panel LED will flash **GREEN** twice per second. The loudspeakers will remain disconnected until the DC offset ceases. If the LED flashes **GREEN** even after powering down and then up again, you should get in touch you're your dealer or Ovation High Fidelity through the 'Contact' page on our website as the amplifier requires servicing.

Note Carefully: If you drive the amplifier into hard clipping (that is to say >300 Watts per channel in to 8 Ohms), the amplifier dis-engage the loudspeakers in order to protect them.

Attention: Playing music at excessive volume levels can damage your hearing.

Replacing the Fuses on your Model 1721 Power Amplifier

In the unlikely event that the mains fuse on your unit should blow, you should check the following carefully before replacing it: -

1. You are using the correct mains voltage. The mains voltage for your product is permanently set at the factory at the time of shipping and shown on the rear panel bottom left hand side of the unit.
2. On power amplifier products, make sure the speaker outputs are not shorted in any way.
3. Make sure the mains power at the wall socket is not inadvertently switched OFF.
4. If your unit still does not operate, you need to replace the fuse as detailed below

Important! Always unplug the unit from the mains before attempting to replace the fuse!

Use a flat bladed screw driver and gently lever open the fuse drawer

Replace the Model 1721 fuse with the ratings as indicated below

Mains Voltage	Fuse Rating	Remarks
100 VAC to 130 VAC	15A T	slow acting 'T' fuse
200 VAC to 240 VAC	8A T	slow acting 'T' fuse

Firmly push the drawer closed, after which you can reconnect the unit to the mains and then apply power.

Do not use fuses marked FF, F or M as these are fast/medium acting and will likely blow when you power the amplifier up. Only use 'T' fuses.

If the fuse immediately blows again, refer your unit to a qualified repair technician, or if still under warranty, contact the factory via the 'Contact' page at www.ovationhifidelity.com

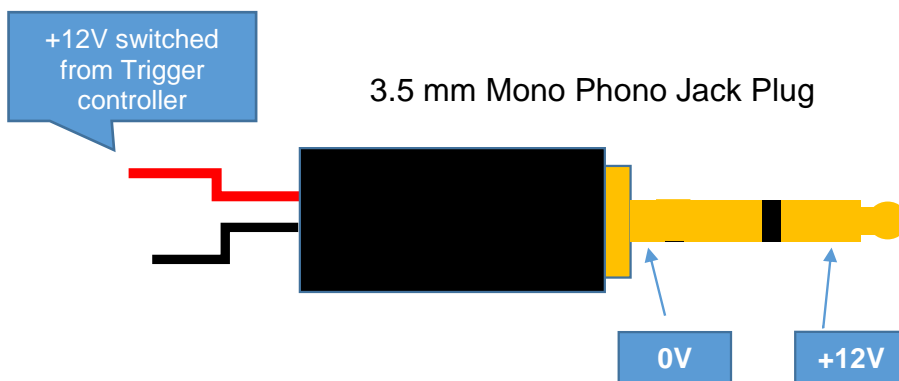
Never use fuses rated higher than shown in the table above on your Model 1721. Equipment fuses are designed and rated to prevent fire hazard and are a legal requirement in all countries.

How to Use the Trigger Input Facility

On the rear panel, a 'Trigger' input is provided. This allows the amplifier to be powered up or down remotely from a preamplifier or a system controller equipped with a 12V trigger output.

Important Note: The front panel power switch takes precedence over the Trigger input. In other words, if the front panel power switch is depressed (i.e, power ON), the trigger input will be overridden and the amplifier will remain ON for as long as the switch is depressed. Therefore, when using the trigger input, always ensure the front panel switch is OFF i.e. not depressed.

The Trigger input uses a standard 3.5mm mono or stereo jack plug. The diagram below shows the polarity connections.



The maximum trigger voltage may not exceed 15 Volts and must not drop below 10 Volts during normal operation. The total current drawn by the Model 1721 trigger receive circuit in the amplifier is typically 35mA and will not exceed 40mA at 12V.

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Trouble Shooting – Model 1721 Preamplifier

Problem	Likely Cause	Action
Unit will not power up with the front panel POWER switch in the depressed position. The front panel Power LED is <u>not illuminating</u>	No AC mains power is coming to the unit	Check that the wall socket is switched ON and is providing power. You could for example plug another appliance like a lampshade into the same socket to verify this
		If still not working, check that the mains cable plug (UK only) fuse is intact
		If the wall socket is ON and the power cable fuse is intact, check the Model 1721 mains fuse – see Page 10
There is no sound coming from the system but the power LED is illuminated GREEN on the front panel	Speakers are not connected to the amplifier or not connected correctly	Check the speaker connections and make sure they are connected at both the amplifier and the speaker side. Always observe the correct polarity of the connections
	If above is ok but there is still no input signal from the preamplifier	Make sure the interconnect cable from the preamplifier is in place and an active source signal is selected on the preamplifier
		Check that you have selected the right input via the 'input Select' pushbutton on the rear panel. Depressed for balanced inputs, out for unbalanced inputs
The LED is flashing GREEN at twice per second	The amplifier protection scheme has triggered	See Table 1 on Page 8 - last row – the amplifier has developed an internal fault
The LED is ORANGE	The Amplifier is too hot	Reduce the volume and/or improve the ventilation around the amplifier. See Table 1 on Page 8
The LED is flashing RED and then ORANGE twice per second and there is no sound from the speakers	The amplifier has overheated and the speakers have been disconnected	Turn the volume right down, improve the ventilation around the amplifier and ensure it cools down. See Table 1 page 8
The LED is GREEN, but flashes RED intermittently	The amplifier is being overdriven and is clipping	Reduce the volume. The clipping indicator will flash when the amplifier is delivering > 200 Watts RMS into 8 Ohms
The sound coming from the loudspeaker lacks bass and the stereo sound stage/image seems to wander if you move you listening position slightly	Speaker phasing is incorrect and/or interconnect plugs are not seated properly	Ensure that the speaker wire connection polarity is correct – see Page 7 for details on how to connect the speakers Make sure all interconnect plugs are fully seated into their respective sockets
There is a hum coming from the loudspeakers	Interconnect cable is faulty or is not properly seated in its associated receptacle	Check all interconnects - they must to be fully seated in their associated receptacles to prevent hum
		If the problem is not due to the above, check that the interconnect cable is not faulty. On the amplifier input, swap the left and right channels. If the problem moves to the other channel, the fault is with the interconnect cable, or the source i.e. the problem is not with the Model 1721 Power Amplifier

If your unit is still not working correctly, kindly contact your dealer or Ovation High Fidelity via the 'Contact' page at www.ovationhifidelity.com

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Specifications

Model 1721 Stereo Power Amplifier

General Description

240 Watt RMS per channel, wide bandwidth, ultra-low distortion Current Mode Topology (CMT) stereo power amplifier equipped with non-invasive over-current and DC Offset protection. Power up/Power down muting utilizing solid state loudspeaker relay and in-rush current limiting during mains power-up. Balanced or single ended input selected via a push button on the amplifier's rear panel.

Inputs	1 pair unbalanced (i.e. single ended) via RCA phono receptacles ($Z_{in} = 10k \Omega$) and 1 pair XLR balanced input ($Z_{in} = 10 k \Omega$); Input selection is via pushbutton located on amplifier rear panel
Input sensitivity	For rated output power: 1V for single ended inputs; 1V for balanced inputs
Output Power	240 W RMS per channel into 8Ω 20 Hz to 20 kHz both channels driven; 450 W RMS into 4Ω 20 Hz to 20 kHz both channels driven; >700 Watts into 2 Ohms (single channel driven); Peak I ² R Power 1200 W single channel driven ($t \leq 50ms$)
Rise time	Large signal: <500 ns rise and fall time 120 V pk-pk 10% to 90% into 8Ω ; small signal rise time ≤ 100 ns 2 V peak into 8Ω
Slew Rate	> 250 V/ μs positive and negative
Frequency Response	20 Hz to 20 kHz +0 dB -0.1 dB 1 W into 8Ω 2 Hz to 250 kHz +0 dB -3dB into 1 W 8Ω Intrinsic response (front end low pass filter disabled) 2 Hz to 700 kHz -3dB 1W into 8Ω
Distortion	≤ 30 parts per million (0.003%) at all frequencies and power levels up to rated output into 8Ω ≤ 5 parts per million (0.0005%) 20 Hz to 20 kHz 1 V into 8Ω ; typically, 7 parts per million (0.0007%) at 200 Watts RMS into 8Ω both channels driven
Signal to Noise Ratio	Better than -95 dB ref 1 V output; Better than 120 dB ref max output voltage swing into 8Ω
Damping Factor	approx. 200 at 1kHz into 8Ω
Operating voltages	110-130 VAC or 220 to 260 VAC; factory set at time of order
Trigger Input	+12V at 35 mA typical; 40 mA at 12 V maximum. Trigger voltage not to exceed 15 V
Max Power consumption	1200VA at 240VAC or 110 VAC ; Mains Voltage is set at time or ordering and cannot be changed by the user
Weight	24 Kgs (unit only); 30 kg when packed for shipping
Dimensions	Unit only: 450mm (W) x 450mm (D) x 130mm (H) Packed for Shipping: 700mm (W) x 700mm (W) x 250mm (H)
Operating Temperature	-10 °C to +45 °C non-condensing

The Ovation High Fidelity Company Limited
Norfolk, England

www.ovationhifidelity.com

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'Engineered for Art'[™]

and the

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HIGH FIDELITY

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Glossary – Some General Terms

AC	Alternating Current – the type of electricity supply used in normal house wiring and to power consumer appliances like TV's, washing machines and high fidelity systems
A-D or A/D	Analog to Digital – an electronic technique whereby an analog signal is sampled at short, regular intervals and the sampled value converted into a representative numeric value that is stored in computer memory, CD or some other mass storage media
Analog Signal	A voltage or current signal that varies continuously with time. Examples are the pickup signal from a turntable, or the output signal from a microphone. All natural world signals are analog.
Balanced Audio Signals	A method whereby audio is transferred between equipment using two connections without reference to ground, making it highly immune to ground loop induced hum and extraneous noise pickup. Uses XLR connectors. See also Unbalanced or single-ended audio signals below
Bipolar Transistor	A three-terminal semiconductor amplifying device
CMT or CFA	Current Mode Topology – a type of audio amplifier wherein the peak current into the main amplifier stage is determined directly by the output voltage and the gain setting resistor. Also known as CFA (Current Feedback Amplifier)
D-A or D/A	Digital to Analog – the technique of converting digitally stored samples into a continuous analog signal. See A-D above
Damping factor	A measure of an amplifiers load impedance divided by its output impedance. Higher figures are deemed better. In a modern amplifier, any figure above 50 should be considered adequate and above 100 excellent
DC	Direct Current. Examples would be the type of electric current supplied by a battery
dB	Abbreviation for Decibel - a logarithmic measure of an analog signal with respect to a reference, or expressed as the difference between two signals. 20 dB = 10x and 40 dB = 100x while 100 dB = 100 000x. By way of an example, if the S/N of a preamplifier is -100 dBV, it means that the noise is 100 000 times lower than 1V – i.e. 10 millionths of a Volt. In this case, the 'V' in dBV refers to the reference which is 1V and is a standard measure used in audio
Digital signal	A binary coded numerical value represented by 0's and 1's where the '0' value corresponds to 0V and the '1' corresponds to 3.3V, 5V or some other non-zero voltage. Digital signals are either parallel or serial format. Examples of digital signals would be the co-ax output from a CD drive (serial digital signal), or the data on an Ethernet cable used in communications (also a serial digital signal)
Distortion and Noise	The presence in any electrical audio signal of unintended harmonics and/or noise. Reducing distortion and noise are key goals in any equipment that reproduces audio signals
EMI or Electro-Magnetic Interference	Noise and/or extraneous signal introduced into a system through magnetic or capacitive coupling mechanisms. Filtering, bandwidth limiting, and careful design and equipment layout can reduce the effects orders of magnitude below human hearing threshold, and/or render it of no consequence to the correct operation of the equipment.
EQ or Equalization	A technique whereby an electrical signal which is intentionally or unintentionally altered from the original, is corrected. Examples would be RIAA (intentionally altered during the disc cutting process) or room EQ whereby unintended acoustic imperfections arising within the listening space are corrected
Frequency Response or Bandwidth	The extent of frequencies an amplifier or transducer (e.g. a microphone or a loudspeaker) can reproduce to within a specified range. Human hearing covers 20Hz to 20 kHz. Audio amplifiers typically cover at least 5 Hz to 100 kHz (-3 dB) to ensure a flat response to within 0.2dB across the human hearing range of 20 Hz to 20 kHz
Input Sensitivity	The level of input signal required to produce a given output from a preamplifier or a power amplifier.
IR Remote	Infra-red Remote control
JFET	Junction Field Effect Transistor – a three terminal semiconductor amplifying device that somewhat emulates vacuum tube triodes in its performance characteristics.
Ω	Ω ('Ohm') is the unit of electrical resistance. Most loudspeakers are rated at 8 Ω
Output Power	Measured in Watts, the amount of electrical power that can be delivered into a loudspeaker load by an amplifier. Always quoted into a known resistive load – usually 4 or 8 Ω
Phono socket	The small round sockets – usually grouped in Left (WHITE) and Right (RED) pairs on the rear side of audio equipment. Also referred to as 'RCA Phono' sockets
RC5 IR	The protocol by which commands from the remote are encoded and transmitted via infra-red to the receiving equipment which then executes them. Invented by Philips in the 1970's and now one amongst 4 or 5 industry standards
RIAA	Recording Industry Association of America – The association that standardized the LP/vinyl playback equalization curve in the early 1960's that is still the standard for LP/vinyl today
Signal to noise ratio (SNR)	A measure of the amount of noise in a system against the nominal output signal of that system. In modern equipment, any figure lower than -90 dBV should be considered excellent
Slew Rate or S/R	The fastest rate of output voltage change that an amplifier can sustain. A typical design goal for an audio amplifier is 1V/us per volt of output swing. For a 100 Watt amplifier, this corresponds to a minimum figure of about 40V per microsecond
Small signal rise time	A measure of the speed (i.e. rate of change) of an amplifier or preamplifier when dealing with <i>low level</i> signals in the 1-2 Volt range. Small signal rise time and slew rate (S/R) are <i>not</i> equivalent measures
Unbalanced or single-ended audio signals	With this type of interconnection, audio is transferred between equipment using a ground connection and a signal connection. It is more common than balanced audio signals due to its lower implementation cost, but more susceptible to noise pick-up
VMT or VFA	Voltage Mode Topology – a type of amplifier wherein the peak current into the main gain stage is limited to that of the input stage 'Long Tail Pair' (LTP) current source. Also known as VFA (Voltage Feedback Amplifier)
XLR	The standard interconnect format for balanced audio signals

Owners Information

Date of Purchase	
Date of Warranty Registration	
Dealer	
Serial Number	

We recommend you staple your purchase invoice to the inside back page of this manual for safekeeping as proof of purchase.

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