

DPX1500

generation III

***DUAL CHANNEL HEXFET
AUDIO POWER AMPLIFIER
WITH CLIP LIMITING & TAPS
CONTROL***

OWNERS MANUAL

***FOR EUROPEAN
220V-230V
OPERATION***



HZ INTERNATIONAL LTD COMBE HOUSE - STOKE ST MICHAEL - BATH - SOMERSET - ENGLAND

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GETTING STARTED

PREFACE

ALTHOUGH THE POWER AMPLIFIER IS A RUGGED PIECE OF PROFESSIONAL AUDIO EQUIPMENT AND IS HEAVY, IT IS ALSO A HIGH SPECIFICATION MODERN ELECTRONIC ASSEMBLY AND SHOULD BE HANDLED WITH CARE.

THE PACKAGING OF THE UNIT IS SPECIFICALLY DESIGNED TO SAFELY TRANSPORT THIS PRODUCT. IN THE UNLIKELY EVENT OF THE PRODUCT REQUIRING SERVICING, THIS PACKAGING IS THE SAFEST WAY TO TRANSPORT IT.

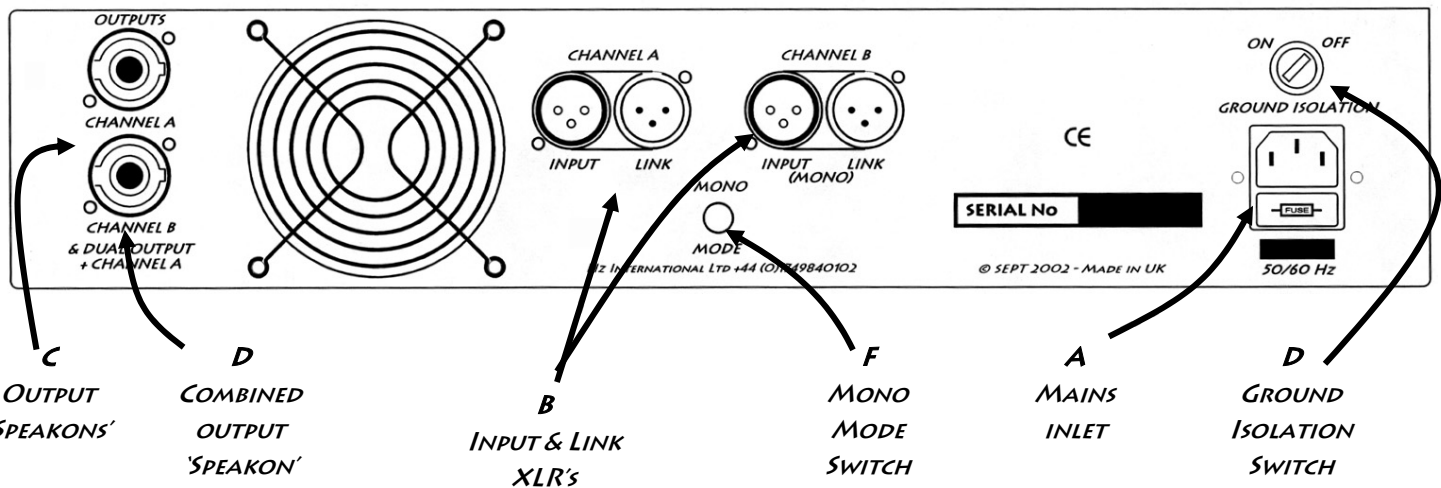
ALL UNITS ARE FACTORY SET FOR 220-230V OPERATION.

UNITS FACTORY MADE FOR 110/120V SUPPLY ARE CLEARLY MARKED ON THE BACK AND SHOULD **NOT** BE CONNECTED TO ANY HIGHER VOLTAGE POWER SOURCE.

INSTALLATION

THIS POWER AMPLIFIER HAS BEEN DESIGNED FOR RACK MOUNTING USE, IN A RACKING ENCLOSURE MADE TO BS5954, IEC297 OR DIN 41494 STANDARDS.

- A. THE UNIT MUST BE MOUNTED IN THE HORIZONTAL POSITION WITH CLEAR COOL AIR FLOW OF 10CM AROUND EACH VENT. **DO NOT STAND OR USE RACKS NEAR HEATING DUCT OUTLETS, APPLIANCES OR RADIATORS.** IF THE RACK IS PLACED IN AN ENCLOSED AREA (CUPBOARD ETC.) MAKE SURE THAT THERE IS PLENTY OF REAR VENTILATION AND THE AIR IS NOT RECYCLING.
- B. RACK MOUNTING - EARS ARE PROVIDED FOR BOTH FRONT AND REAR SUPPORT; A CHOICE OF MOUNTING POSITION IS GIVEN ON THE FRONT BRACKETS (EITHER PROUD & LEVEL WITH THE FRONT PANEL OR SUNK BY 20MM AND FLUSH WITH THE FRONT ESCUTCHEON.)
- C. CARE IS REQUIRED WHEN INSTALLING THESE UNITS IN A RACK. IT IS ADVISED TO PUT THE RACK ON ITS BACK, THEN PLACE ALL THE EQUIPMENT BEING FITTED INTO IT BEFORE FITTING RETAINING BOLTS TO AVOID UNNECESSARY HANDLING DAMAGE. REAR SUPPORT BRACKETS ARE STRONGLY RECOMMENDED TO BE USED ON EACH UNIT, TO AVOID TRANSIT DAMAGE.



CONNECTIONS & SWITCHES

ON THE BACK OF THE DPX AMPLIFIER YOU WILL FIND THE FOLLOWING CONNECTION SOCKETS:-

- A. MAINS INLET: TO CONNECT THE UNIT, VIA A MAINS LEAD, TO THE MAINS POWER SUPPLY.
- B. INPUT & LINK XLR'S: PROVIDE INPUTS TO THE AMPLIFIER. & PARALLEL OUTPUT HOOK UP LINKS
- C. SPEAKON'S FOR CONNECTION TO LOUDSPEAKERS.
- D. A COMBINED OUTPUT OF CH A & B FOR 4 WAY CABLE HOOKUP A = +2 / -2 B = +1 / -1
- E. GROUND ISOLATION SWITCH: COUPLES OR DE-COUPLES THE INPUT GROUND, TO AVOID HUM LOOPS
- F. MONO MODE SWITCH: FOR SWITCHING BETWEEN MONO AND DUAL CHANNEL MODES.

INPUT CABLES

ALL THE INPUTS ARE BALANCED FOR LOW NOISE AND TO GIVE HIGH QUALITY FROM PROFESSIONAL EQUIPMENT, BUT IT CAN BE USED FOR UNBALANCED SOURCES BY USING THE WIRING OF THE XLR CONNECTORS AS SHOWN, ALTHOUGH IT IS ADVISED THAT THE CABLE LENGTHS BE AS SHORT AS POSSIBLE.

THE TWO PAIRS OF SOCKETS FEATURE BOTH MALE & FEMALE XLR-TYPE CONNECTORS AND CAN BE USED FOR BALANCED OR UNBALANCED SIGNALS.

A. = UNBALANCED MALE XLR B. = BALANCED MALE XLR

CONNECTING THE INPUT SIGNAL:- THE INPUT SIGNAL SHOULD BE CONNECTED TO THE FEMALE XLR INPUT OF EITHER OR BOTH CHANNELS. THIS SIGNAL MAY COME FROM ANY SUITABLE LINE LEVEL OUTPUT, E.G., MIXER OR ANOTHER AMPLIFIER (LINK OUTPUT). ALL INPUT CONNECTIONS MUST USE SHIELDED/SCREENED CABLES.

DO NOT CONNECT WITH SPEAKER CABLES.

LINK CABLES

CONNECTING A PARALLEL SIGNAL LINK SHOULD BE MADE BY USING A MALE XLR AND FEMALE XLR AT EITHER OPPOSITE ENDS OF THE CABLE. CONNECTIONS FOR THE MALE XLR END ARE AS SHOWN:-

C. = UNBALANCED MALE XLR D. = BALANCED MALE XLR

OUTPUT CONNECTIONS

CONNECTING THE OUTPUT SIGNAL:- A PAIR OF SPEAKON™ CONNECTORS ARE FITTED AND ARE WIRED +1 = SPEAKER + -1 = SPEAKER.

THE LOWER SOCKET IS COMBINED FOR 4 WAY CABLE & SHOULD BE WIRED FOLLOWS:-
+1 SPEAKER 1+ & -1 SPEAKER 1 -
+2 SPEAKER 2+ & -2 SPEAKER 2 -

SHOULD YOU NOT FULLY UNDERSTAND 4 WAY CABLE CONFIGURATION PLEASE CONSULT YOUR DEALER OR A QUALIFIED ENGINEER



A.



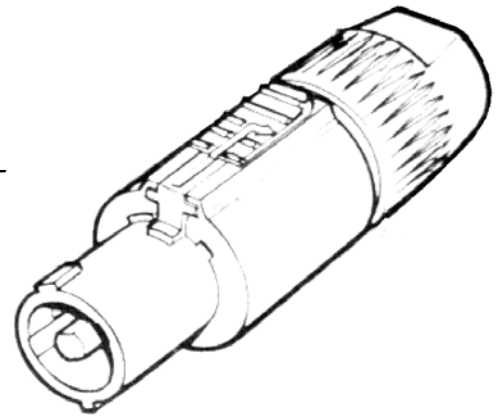
B.



C.



D.

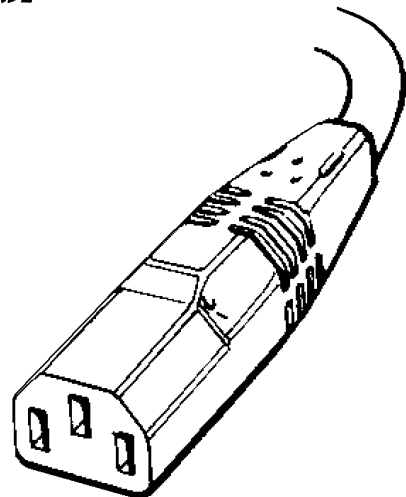


POWER CONNECTION

THE WIRES IN THE IEC/CEE MAINS LEAD ARE COLOURED: EARTH: GREEN/YELLOW NEUTRAL: BLUE LIVE: BROWN

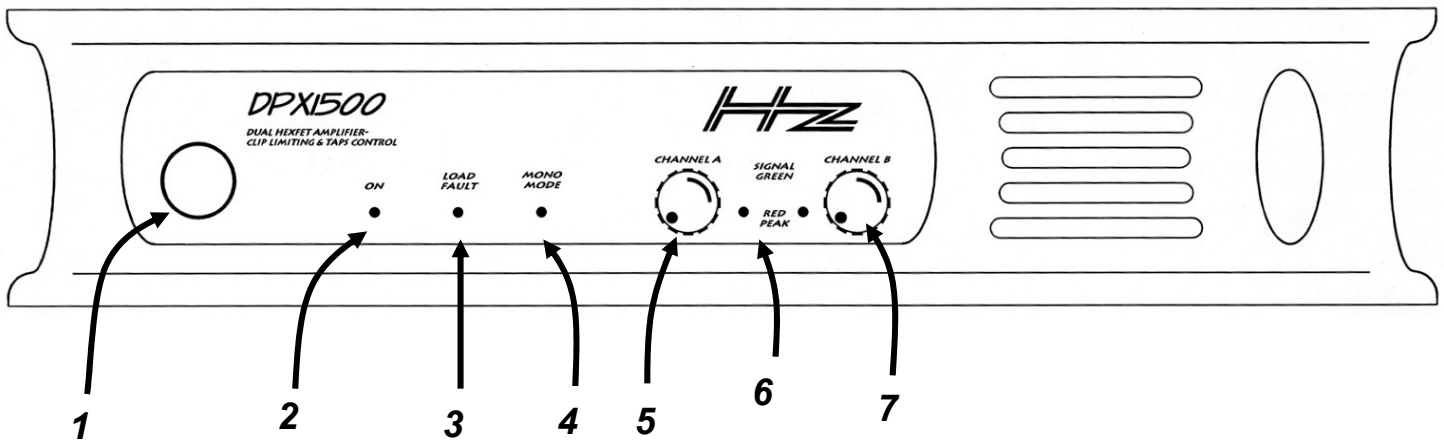
AS THESE COLOURS MAY NOT CORRESPOND WITH THE COLOUR MARKINGS IDENTIFYING THE TERMINAL IN YOUR PLUG PROCEED AS FOLLOWS:

GREEN/YELLOW WIRE MUST BE CONNECTED TO THE TERMINAL WHICH IS MARKED WITH THE LETTER E. - BROWN WIRE MUST BE CONNECTED TO THE TERMINAL WHICH IS MARKED WITH THE LETTER L. - BLUE WIRE MUST BE CONNECTED TO THE TERMINAL WHICH IS MARKED WITH THE LETTER N.



OPERATION

YOUR DPX AMPLIFIER IS NOW READY FOR USE. BEFORE ATTEMPTING TO OPERATE IT, HOWEVER, IT IS ADVISABLE TO FAMILIARISE YOURSELF WITH THE FUNCTIONS OF THE CONTROLS AND THE SIGNIFICANCE OF THE INDICATORS.



1. **POWER SWITCH:** *ISOLATES THE UNIT FROM THE MAINS POWER SUPPLY.*
2. **ON:** *INDICATES THE AMPLIFIER IS IN OPERATION.*
3. **LOAD/ FAULT:** *INDICATES AN OUTPUT LOAD CONNECTION IS WRONG OR A DC IS PRESENT ON THE OUTPUT, OR THE AMPLIFIER HAS REACHED AN EXCESSIVE TEMPERATURE.*
4. **MONO MODE LED:** *MONO MODE IS SELECTED WHEN THE YELLOW INDICATOR IS LIT.*
5. **L/R SIGNAL INDICATORS:** *THE CH B & CH A CHANNEL LED'S GLOW GREEN WHEN AN INPUT DRIVE SIGNAL IS PRESENT.*
6. **L/R PEAK INDICATORS:** *THE GREEN CHANNEL INDICATORS LED'S WILL START TO CHANGE RED 3db BEFORE DISTORTION.*
7. **L/R LEVEL:** *SETS THE GAIN VOLUME FOR EACH CHANNEL OF THE AMPLIFIER.*

SIGNAL/PEAK INDICATOR

THE CH A AND CH B CHANNEL INDICATORS WILL LIGHT GREEN WHEN AN INPUT SIGNAL IS PRESENT.

WHEN THE LIGHT CHANGES TO BRIGHT RED IT IS INDICATING FULL POWER OF THE AMPLIFIER HAS BEEN REACHED.

THIS AMPLIFIER IS FITTED WITH A CLIP LIMITING CIRCUITRY TO KEEP THE AMPLIFIER WITHIN THE LIMITS OF ITS POWER SUPPLY AND REDUCE DISTORTION.

ITS NOT GOOD PRACTICE TO ALLOW THESE TO LIGHT BRIGHT RED CONTINUOUSLY. ALTHOUGH IT SOUNDS UNDISTORTED TO THE EAR, LONG TERM DAMAGE TO THE LOUDSPEAKERS, & HORNS MAY OCCUR. REDUCE YOUR INPUT LEVEL, SO THE LIGHTS FLASH ON PEAKS OF THE MATERIAL IF THIS IS NOT ENOUGH VOLUME, THEN YOU ARE UNDER-POWERED FOR YOUR APPLICATIONS AND SHOULD CONSIDER INCREASING YOUR POWER AMP SIZE BEFORE DAMAGE OCCURS TO THE REST OF YOUR SYSTEM.

MONO OR STEREO MODE

SELECT EITHER MONO OR STEREO MODE CAN BE MADE AT ANY TIME, USING THE BUTTON AT THE REAR OF THE UNIT. IN THE STEREO MODE, THE CH B AND CH A CHANNELS BEHAVE INDEPENDENTLY. IN THE MONO MODE THE CH A INPUT SOCKETS ARE FED INTO BOTH THE CH B AND CH A AMPLIFIERS. THE CH B INPUT WILL NOT FUNCTION. THE YELLOW LIGHT ON THE FRONT PANEL INDICATES MONO MODE SELECTION.

BRIDGE MODE

IS NOT AVAILABLE ON THIS AMPLIFIER

LOAD/FAULT INDICATOR

THE TOTAL AMPLIFIER PROTECTION SYSTEM (TAPS) WILL SHUT DOWN THE AMPLIFIER AND THE RED FAULT INDICATOR WILL LIGHT, IF A SHORTED OR UNACCEPTABLE LOAD IS DETECTED TO EITHER OUTPUT.

TO RE-SET THE AMPLIFIER - SWITCH OFF AND REMOVE ALL OUTPUT CABLES AND CHECK FOR SHORT CIRCUITS OR WRONG LOAD, (IMPEDANCE IS TOO LOW FOR SAFE OPERATION).

THE AMPLIFIER WILL TRIP OUT EVERY TIME UNTIL THE FAULT IS LOCATED.

EXCEPT ON SWITCH ON, THIS RED LED SHOULD NEVER LIGHT. IN EXTREME OVERLOAD CONDITIONS IT MAY COME ON, BUT IT IS USUALLY PROCEEDED BY VERY HEAVY DISTORTION. IF THIS HAPPENS THEN TURN DOWN AMPLIFIER VOLUMES, THEN WAIT UNTIL THE AMPLIFIER HAS COOLED. (INDICATED BY COLD AIR COMING OUT OF THE AIR OUTLET), TURN THE AMPLIFIER VOLUMES BACK TO A REASONABLE SETTING, TAKING NOTE OF THE PEAK INDICATORS.

IF THE PROBLEM PERSISTS, FIRSTLY THE COOLING SYSTEM FOR THE AMPLIFIER SHOULD BE CHECKED, , I.E., IS THE AIRFLOW OBSTRUCTED BY SOMETHING AGAINST THE GRILLES, OR IS THE AMPLIFIER ENCLOSED IN A SEALED RACK WITH NO AIR VENTS. IF THE TRIP LIGHT FAILS TO EXTINGUISH AFTER 30 SECONDS FROM COLD, THEN THERE IS AN INTERNAL FAULT IN THE AMPLIFIER AND THE RELEVANT SPEAKER(S) HAVE BEEN DISCONNECTED TO PROTECT THEM. ADVICE SHOULD BE SOUGHT FROM YOUR DEALER.

POWERING UP

YOU CAN TURN THE AMPLIFIER ON BY USING THE BLACK ROCKER SWITCH ON THE LEFT HAND SIDE OF THE FRONT PANEL.

PLEASE NOTE: IT IS GOOD PRACTICE TO TURN DOWN THE CHANNEL VOLUME CONTROLS DURING SWITCH ON AS PRECAUTION AGAINST SPEAKER DAMAGE.

THIS CAN BE CAUSED BY INSTANT HIGH LEVEL FEEDBACK FROM AN OPEN CHANNEL MIXER AND MIC, OR SYSTEM INSTABILITY. ON INITIAL SWITCH ON THE 'TRIP INDICATOR' WILL LIGHT, THIS SHOULD GO OUT AFTER A FEW SECONDS (WHEN THE AMPLIFIER SUPPLIES HAVE STABILISED).

SHOULD A/C POWER INTERRUPTED DURING OPERATION TURN DOWN THE VOLUMES OR ZERO THE INPUT SIGNALS UNTIL A STABLE A/C SUPPLY IS BACK ON LINE

AMPLIFIER MAINTENANCE

THE AMPLIFIER CONTAINS NO USER SERVICEABLE PARTS INSIDE. MAINTENANCE SHOULD BE MAINLY PREVENTATIVE, TAKING CARE TO FOLLOW THE PREVIOUS INSTRUCTIONS, TO ENSURE LONG TERM RELIABILITY. DUE ATTENTION SHOULD BE PAID TO THE CONDITION OF ALL SPEAKER AND MAINS INTERCONNECTION LEADS AND CONNECTORS. IF REQUIRED THE OUTSIDE OF THE AMPLIFIER CAN BE CLEANED USING A DAMP, LINT FREE CLOTH. DO NOT CLEAN USING SOLVENTS, DETERGENTS OR ABRASIVES.

FAULTS AND THEIR LIKELY CAUSES

ALTHOUGH THE GREATEST CARE HAS BEEN TAKEN IN THE MANUFACTURE OF THE POWER AMPLIFIER, THE POSSIBILITY REMAINS THAT FAULTS COULD OCCUR DURING USE OR DIFFICULTIES COULD BE EXPERIENCED DURING INITIAL INSTALLATION.

THE CAUSE HOWEVER WILL RARELY BE FOUND TO BE THE INTERNAL AMPLIFIER. BELOW IS A LIST OF SYMPTOMS AND POSSIBLE CAUSES. SOME OF THE SUGGESTED CAUSES MAY APPEAR OBVIOUS BUT THEY CAN BE EASILY OVERLOOKED.

UNDER NO CIRCUMSTANCES SHOULD YOU OPEN THE AMPLIFIER: THIS IS DANGEROUS, WILL EXPOSE HIGH VOLTAGES, AND WILL INVALIDATE ALL CH AS UNDER THE GUARANTEE.

- 1. AFTER TURNING THE 'POWER' SWITCH THE 'POWER' INDICATOR DOES NOT LIGHT.
THE MAINS PLUG IS PROPERLY CONNECTED INTO THE AMPLIFIER, OR THERE IS NOT SUPPLY AT THE MAINS SOCKET.
CHECK USING AN ALTERNATIVE ELECTRICAL APPLIANCE.
THE MAINS FUSE IS BROKEN, LOCATED ON THE REAR OF THE AMPLIFIER, REPLACE USING 10A QUICK BLOW 20MM FUSE.*
- 2. WHEN THE VOLUME CONTROLS ARE ADVANCED NO SOUND IS HEARD.
WAIT 10 SECONDS, AMPLIFIER MAY NOT BE STABILISED AFTER SWITCH ON.
NO INPUT SIGNAL CONNECTED TO INPUT SOCKET, CHECK TO SEE IF PRESENT SIGNAL LIGHTS ARE SHOWING.
NO SPEAKERS CONNECTED TO OUTPUT SOCKETS.
MONO INPUT SIGNAL NOT CONNECTED TO CORRECT CHANNEL, MOVE INPUT PLUG TO CH A CHANNEL.*

3. *EVEN WHEN THE OUTPUT IS LOW, THE OUTPUT SOUNDS DISTORTED.
ANY OF YOUR LEADS MAY HAVE A FAULTY CONNECTION IN THE PLUG OR DAMAGED CABLES.*
4. *OUTPUT DISTORTED AT MEDIUM VOLUME SETTING.
AMPLIFIER IS RUNNING TOO HOT, ENSURE FREE AIRFLOW INTO AND OUT OF THE UNIT. (SEE SECTION A. PLACING THE POWER AMPLIFIER).*
5. *THE LOAD FAULT INDICATOR IS LIT AND NO SOUND IS HEARD.
A SHORTED OR UNACCEPTABLE LOAD IS DETECTED TO EITHER OUTPUT, OR THE UNIT IS OVERHEATED.
CHECK YOUR CABLES AND SPEAKERS FOR A PROBLEM AND ENSURE FREE AIRFLOW INTO AND OUT OF THE UNIT.
THE AMPLIFIER WILL RESET WHEN COOL.
IF NONE OF THESE ARE APPARENT THEN AMPLIFIER MAY DEVELOPED AN INTERNAL FAULT, PLEASE CONSULT YOUR DEALER.*

PLEASE DO NOT
SWITCH OR LINK + & - TERMINALS -
IF IN DOUBT PLEASE CALL HELP LINE (UK) 44 1749840102
PLEASE REMEMBER YOUR SYSTEM IS ONLY AS GOOD AS ITS WEAKEST POINT
THIS IS GENERALLY THE HOOK UP WIRES
NEARLY ALL SOUND SYSTEM FAULTS CAN BE TRACED BACK TO POOR WIRING
CHECK ALL CABLES REGULARLY

TECHNICAL SPECIFICATION

POWER OUTPUT	DPX 1500		
LOAD PER CHANNEL	<0.1%	<5%	PEAK
16 Ω	312	360	550
8 Ω	550	600	950
4 Ω	750	831	1243
2 Ω	NOT DESIGNED FOR 2Ω OPERATION		

TEST PERAMETERS

*POWERS IN WATTS R.M.S PER CHANNEL USING 1 KHZ TONE. THE PEAK POWERS ARE SHORT TERM MAXIMUM PEAK POWERS.
ALL OTHER POWER MEASUREMENTS ARE LONG TERM CONTINUOUS TONE.*

FREQUENCY RESPONSE:	<i>3.5 HZ - 22 KHZ + 0dB - 3dB</i>
INPUT SENSITIVITY:	<i>0dBm 0.775v RMS</i>
DAMPING FACTOR >	<i>200 @ 100Hz</i>
DISTORTION:	<i>0.05% @ 1KHZ</i>
INPUT IMPEDANCE:	<i>35KOHMS</i>
NOISE LEVEL:	<i>-95dBm</i>
PROTECTION:	<i>HYPER SPEED OVER-CURRENT & SHORT CIRCUIT PROTECTION - DC PROTECTION - THERMAL PROTECTION - ALL THESE ALSO DISCONNECT THE LOAD ON BOTH CHANNELS.</i>
THERMAL:	<i>AUTOMATIC SHUTDOWN @ 100 DEG C (AUTO RESET)</i>
COOLING:	<i>1 FAN 80MM²</i>
MAINS AC FUSES:	<i>10A 20MM (EXTERNAL)</i>
P.S.U. FUSES:	<i>4 x 10A 20MM (INTERNAL)</i>
SIZE:	<i>483 X 90 X 290.</i>
WEIGHT:	<i>17Kg (37.4LBS.)</i>
MAINS SUPPLY:	<i>230V A.C. 50/60 HZ</i>

GUARANTEE

YOUR EQUIPMENT IS GUARANTEED FOR A PERIOD OF TWELVE MONTHS TAKEN FROM THE DATE OF PURCHASE OF THE PRODUCT AGAINST ANY DEFECTS DUE TO FAULTY MATERIALS OR FAULTY MANUFACTURING. DURING THIS PERIOD, REPAIRS TO THE EQUIPMENT WILL BE CARRIED OUT WITHOUT CHARGE FOR LABOUR OR MATERIALS BY ANY AUTHORISED DEALER OR THE FACTORY SUBJECT TO THE FOLLOWING CONDITIONS.

- 1. THE FAULT MUST BE ENTIRELY DUE TO FAULTY MATERIALS OR FAULTY MANUFACTURE.**
- 2. THE DEFECT MUST NOT HAVE BEEN CAUSED BY BAD INSTALLATION, ACCIDENTAL DAMAGE, MISUSE OR FAILURE TO COMPLY WITH THE INSTRUCTIONS GIVEN IN THIS USERS MANUAL.**
- 3. THE EQUIPMENT MUST BE USED SOLELY FOR AUDIO APPLICATIONS AND IS SUBJECT TO FAIR WEAR AND TEAR, FOR COMMERCIAL USAGE.**
- 4. IF AT ANY TIME DURING THE GUARANTEE PERIOD PART OR PARTS OF THE EQUIPMENT ARE REPLACED WITH A PART OR PARTS NOT SUPPLIED OR APPROVED BY US OR IF THE EQUIPMENT HAS BEEN DISMANTLED OR REPAIRED BY ANY PERSON NOT AUTHORISED BY THE US, THEN GUARANTEE SHALL IMMEDIATELY CEASE AND BECOME VOID.**
- 5. EVIDENCE OF THE DATE OF PURCHASE (INVOICE, RECEIPT OR FINANCE AGREEMENT) MUST BE PRODUCED AT THE SERVICE DEPARTMENT TO OBTAIN THE BENEFIT OF THIS GUARANTEE. ANY CARRIAGE CHARGES RELATING TO THE GUARANTEE WILL BE THE RESPONSIBILITY OF THE PURCHASER.**
- 6. THIS GUARANTEE APPLIES TO THE ORIGINAL PURCHASER ONLY AND THE EQUIPMENT MUST HAVE BEEN PURCHASED OR FINANCED FROM NEW, THE GUARANTEE CANNOT BE ASSIGNED OR TRANSFERRED.**
- 7. ANY DEFECTIVE PART THAT HAS BEEN REPLACED SHALL BECOME THE PROPERTY OF THE COMPANY AND THE RIGHT IS RESERVED BY THE COMPANY TO REPLACE THE EQUIPMENT OR REPAIR IT AT THE OPTION OF THE COMPANY.**
- 8. THIS GUARANTEE APPLIES TO EQUIPMENT PURCHASED AND USED WITHIN THE E.E.C. THE IMPORTERS OF EQUIPMENT IN NON E.E.C. COUNTRIES ARE RESPONSIBLE FOR THE GUARANTEE OF THIS EQUIPMENT. PARTS REQUIRED UNDER GUARANTEE ARE FREE. SHIPPING CHARGES FOR COMPONENTS WILL BE CHARGED AT COST.**
- 9. KNOBS, POTENTIOMETERS, SWITCHES AND CHASSIS MOUNT CONNECTORS ARE NOT COVERED UNDER THE TERMS OF THIS GUARANTEE.**
- 10. THE GUARANTEE DOES NOT COVER EQUIPMENT THAT IS IN INDUSTRIAL USE OR WHICH ARE THE SUBJECT OF RENTAL OR HIRE AGREEMENT.**
- 11. THE GUARANTEE SHALL BECOME VOID IF THE EQUIPMENT IS AT ANYTIME USED ON ANY SUPPLY CIRCUIT OR VOLTAGE RANGE OTHER THAN THAT SPECIFIED ON THE EQUIPMENT.**
- 12. THIS GUARANTEE DOES NOT IN ANY WAY AFFECT YOUR STATUTORY RIGHTS AS A CONSUMER WITHIN THE E.E.C.**

THE INFORMATION CONTAINED IN THIS MANUAL IS CORRECT AT THE TIME OF GOING TO PRESS, HOWEVER IN LINE WITH HZ'S POLICY OF CONTINUAL DEVELOPMENT SOME OF THE DETAILS MAY CHANGE ON FUTURE MODELS.