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SCENARIO

Time was when it became necessary to update the ubiquitous AD145 PICO mixer. Our survey showed two main requirements: as well as Audio Developments' build and audio qualities, narrower and shorter modules were required, and the simple but effective equaliser from PICO had to be retained. By this time, 4-track recording equipment had begun to trickle into the marketplace (Nagra D etc), so we decided to give the new mixer four outputs. Because of the lower noise-floor of modern digital recorders, the level of input signals may be reduced. We have taken advantage of this fact and lowered the slope ratio of the limiters to 7:1. By so doing, not only is signal distortion greatly reduced, but also the artefacts associated with limiters become much less noticeable or objectionable. Also, sixty years after the event, sound engineers have come to realise the potential of Blumlein's M-S techniques; to this end, facilities have been incorporated to take advantage of these techniques. The result is AD146 - a four-output mixer.

This was followed by AD148 - edit mixer. Based on AD146, two comprehensive left and right monitor modules have been added for editing purposes. If a mic/line module is included for commentary or voice-over purposes, its input-gain switch can be changed to a potentiometer, and its gain structure changed to ensure consistent level matching with a fixed, mechanical point of reference. Unfortunately, this way of working does reduce headroom and also compromises a mixer's noise performance.

After AD146/AD148 it was back to the drawing board. Our customers were still demanding a two-output mixer - as a true replacement for the PICO, and with the PICO's simplicity. Despite past assurances to the contrary, T powering is still required. And could we incorporate auxiliaries? And could we possibly bring it to market at 'entry level'? We have, and we have and that's MERCURY (AD147).

AD149 completes the 140 series of mixers, and has a repertoire of party tricks not to be found in any other mixer - not even for 'ready money'. The design team took, as its starting point, our list of all the ideas and suggestions presented to us over the past few years. Many of these requests came from film-sound recordists - a sub-set of recordists we have unintentionally neglected in the past.

Being latter-day converts, we have included circuitry to take full advantage of all M-S techniques - even shuffling - in both production and post-production.

AD149 is Audio Developments' tribute to, and celebration of the genius of Alan Blumlein.

Well - we HAD every intention that AD149 would complete the 140 series. We'd reckoned, however, without the persistence - nay, insistence - of our customers for a mains-operated version of the AD146 with four auxiliaries ... we've called it AD144.



Radical change and PICO have proved to be uneasy bedfellows: never a matinée idol and denied its *dulce et decorum* death, AD145 has now been repackaged in the 140 series metalwork - thereby reducing its size and weight. Facilities remain largely unchanged: internally, the microphone amplifier has been replaced with the one designed for AD146 and externally, the mono return is now in stereo form. Now designated AD245, shall we have PICO - like the poor - always with us?

With the advent of multi-track recording and its general acceptance as a useful tool in drama and film location; our market research has indicated a need for a sound mixer with facilities similar to AD245 but with multi-track features. The addition of direct outputs from each input and two auxiliary busses make up the main extra features over those of AD 245. The analogue meters have been replaced by two LCD displays to enable the signal levels of the two main outputs, two auxiliaries and an input module to be monitored simultaneously.

INTRODUCTION

Unpacking

If there are any signs of damage to the outside of the carton, please notify us or your supplier immediately, regardless of the unit's apparent physical condition. This is in case a claim has to be made at a later date because of previously undetected transit damage. The packaging material should not be discarded until the mixer has been acceptance tested and a suitable transit/storage case is available for secure, safe storage.

Visual Inspection

Identification - please make a separate note of the serial number for your own capital equipment records. Ensure that it agrees with the number on the invoice/packing note. The serial number label is on the back cover, adjacent to the battery compartment.

Temperature - check the meter glasses for condensation. If the package has been in transit during cold weather, leave the mixer for at least 12 hours to allow it to return to normal room temperature. Any measurements or subjective tests then made, will be to a known temperature reference.

Specific Points

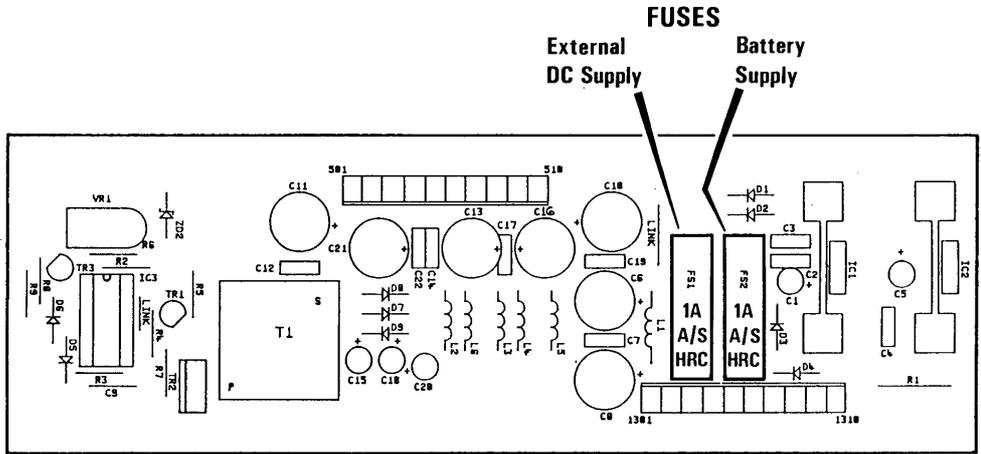
Battery compartment - the mixer has an integral battery compartment to accept 8 size-C cells, and is formed as part of the bottom transversal extrusion. This helps to lower the centre of gravity, as well as adding to the rigidity of the frame.

DC-DC converter - is mounted on the top side of the battery housing and is underneath the fader section of the modules.

In order to facilitate the testing and calibration of all modules, a set of two extender modules is available from the factory.

Connectors - for convenience, the connector panel is labelled for reading from above. All connectors are in line with their corresponding module.

Fuses - to protect the mixer and internal power supply are mounted on the power supply/converter board. Access is gained by removing the output module. 20mm, 1A ANTI-SURGE HRC fuses are used - one for the internal battery power supply and one for the external DC supply.



Limiter threshold - is set at the factory at +8dBu (PPM 6), but an internal preset potentiometer allows adjustment to any other level above 0dBu. The limiters are to be found on the output module printed circuit board.

Microphone powering - the mixer will remain unconditionally stable if the powering on unterminated input channels is switched off - this also improves the noise performance and crosstalk. Powering - 48v phantom or 12v tonader - may be selected before or after the microphone is connected to the module.

Module fix screws - Hexagon head screws are used to fix the modules and back cover. The size being 1.5mm HEX A/F with a 2.5M thread. If it becomes necessary to remove modules or back cover it is strongly advised using a good quality hexagonal head driver. Use of a screwdriver, however desperate, is not recommended.

We wish you many trouble-free hours of use from your mixer. As a company, we are fully committed to BS EN ISO 9001. Should you have any problems or require any further information on FLEX-EQ or the M-S microphone technique, please do not hesitate to contact us on 01543 375351 or by fax on 01543 361051.

WARNING

IMPORTANT SAFETY INSTRUCTIONS

The user of electrical products must be familiar with their potential dangers, and fundamental precautions must always be taken. Please read the following text carefully.

Power supply units manufactured by Audio Developments Ltd are not user serviceable. There are no user-serviceable parts associated with any such power supply unit.

THE OUTER COVERS MUST NOT BE REMOVED

Such a power supply unit is solely for use with audio mixers and sound processors - hereafter called the equipment - manufactured by Audio Developments Ltd. Always use a cord set accepted by a National Approved Body.

EARTHING/GROUNDING: When using an external power supply unit that is connected to the mains supply to drive the mixer it must be **CONNECTED TO EARTH**.

In certain types of malfunction or breakdown, earthing provides a path of least resistance for electric current and considerably reduces the risk of electric shock.

DANGER: Incorrect connection of the equipment grounding/earthing conductor can result in the risk of electric shock. Where possible obtain a pre-wired mains lead from a reputable supplier with the correctly fitted mains connector for the type of mains outlet in use; otherwise, one correctly wired and checked by a qualified electrical engineer. If your mains lead is not suitable for the mains outlet, have the correct plug fitted by qualified personnel.

The **MAINS PLUG** of this equipment is the primary disconnect device. Therefore, in the final application, ensure it remains close to the equipment and easily accessible.

POWERING

The mixer may be powered from either internal cells or an external DC power source.

The integral battery compartment requires a total of 8 size-C cells. Access is gained via a captive lid which is retained by two, 90-degree-turn buckles. The lid hinges outwards 45 degrees from the back panel. When installing new cells, the row nearest the hinge should be fitted first.

Either conventional dry or rechargeable nickel-cadmium cells may be used. NI-CADs may be recharged in situ through the 4-pin POWER IN connector. (The circuit for recharging is already incorporated within the mixer.) A voltage in the range +15v to +24v DC @ 250mA is required on PIN 2 of the POWER IN XLR.

When driving the mixer from an external power source, PIN 1 is the 0v connection and a voltage in the range +12v to +15v DC should be supplied to PIN 4. The power source should be capable of delivering approximately 400mA - allowing some capacity for phantom powering.

If an external power supply unit (PSU) is to drive the mixer and simultaneously charge a set of NI-CADs, a current capability of at least 750mA is required. It is poor practice to run a PSU at its limit, therefore we recommend a minimum of 1A. A suitable unit is PSU Model No AEH24US15 supplied by Audio Developments. (AD Part No 94-100-015)

WARNING: When NOT using the PSU (AD 94-100-015) supplied for the mixer, ensure your 4-pin XLR is correctly wired to match the POWER IN connector. Failure to do so may result in the breakdown of the internal DC-DC converter. Make this check even if using a PSU which may have been supplied to you in the past, eg AD100-06.

AD100-05 PSU is NOT suitable for use with an AD245 mixer and must not be used.

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TECHNICAL SPECIFICATION - ELECTRICAL

REFERENCE 0dB=775mV at 1kHz unless otherwise stated.

MAX GAIN	MIC	80dB	
	LINE	50dB	
MAX INPUT LEVEL	MIC @ MAX GAIN	-44dB	@ MIN GAIN + 6dB
	LINE @ MAX GAIN	-14dB	@ MIN GAIN +20dB
	STEREO-RETURN	+18dB	
	TB RETURN	+18dB	
INPUT IMPEDANCE	MIC		>2k5R
	LINE		>6k5R
	STEREO-RETURN		>100kR
	TB RETURN		>20kR
MIC POWERING	48v PHANTOM & 12v TONADER		
MAX OUTPUT	+23dBm	L-R	TRANSFORMER BAL (600R LOAD)
		MONO	TRANSFORMER BAL (600R LOAD)
	+18dBm	DIRECT OUT	UNBALANCED (600R LOAD)
		H'PHONE	UNBALANCED (600R LOAD)
		TB SEND	UNBALANCED (600R LOAD)
OUTPUT IMPEDANCE	<60R	L-R & MONO	
	<20R	DIRECT OUT & MONITOR	
	<20R	TB SEND	
FREQUENCY RESPONSE	0: -1dB	L-R & MONO	
	0: -1.5dB	MONITOR PATHS	
HARMONIC DISTORTION	<0.05% @ 1kHz @ 0dBm OUTPUT		
	<0.15% @ 40Hz to 15kHz @ +15dBm OUTPUT		
OVERLOAD INDICATOR	ILLUMINATES @ +15dBu at the PRE-FADER POINT		
CROSSTALK	<-70dB 40Hz to 15kHz INTERGROUP & INTERCHANNEL		
NOISE	MIC	<-126dB EIN 20Hz to 20kHz; 200R SOURCE	
	LINE	<77dB SNR 20Hz to 20kHz 0dBu IN & OUT	

EQUALISATION

HF: $\pm 10\text{dB}$ @ 10kHz

LF: $\pm 10\text{dB}$ @ 100Hz

MF: $\pm 15\text{dB}$

CENTRE FREQUENCY 2k5Hz Q=1.2

HPF: PRE-TRANSFORMER 12dB/OCTAVE

-3dB @ 150Hz

-3dB @ 90Hz

OUTPUT LIMITER

THRESHOLD +8dB

RATIO 7:1

ATTACK 2 SETTINGS INTERNALLY SWITCHABLE

1: 4mS 2: 0.8mS

RELEASE 2 SETTINGS INTERNALLY SWITCHABLE

1: 250mS 2: 80mS

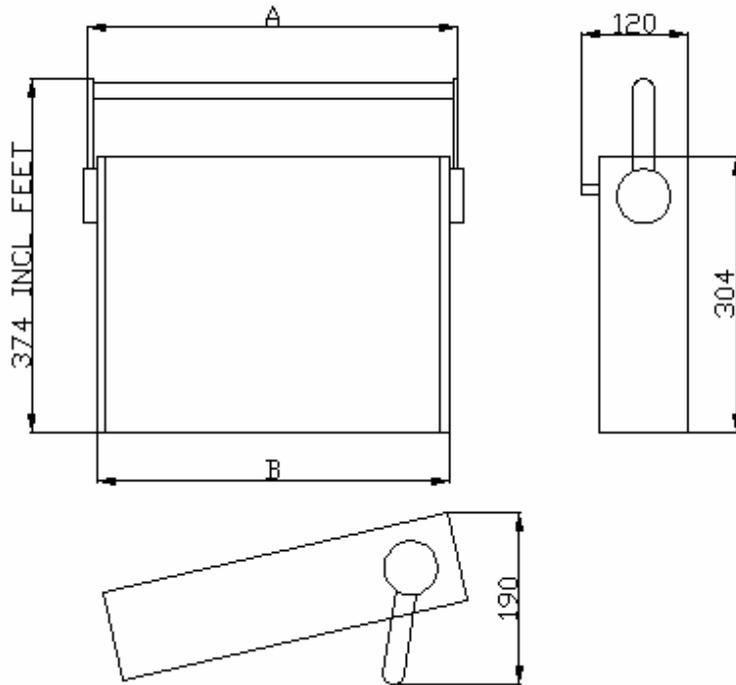
FACTORY SETTING: SLOW

CURRENT CONSUMPTION

220mA (6 INPUT)

12V DC SUPPLY

TECHNICAL SPECIFICATION - MECHANICAL
 SIZE



	6 I/P	8 I/P	10 I/P	12 I/P
A	320	381	442	503
B	295	356	417	478

ALL DIMENSIONS IN MILLIMETRES

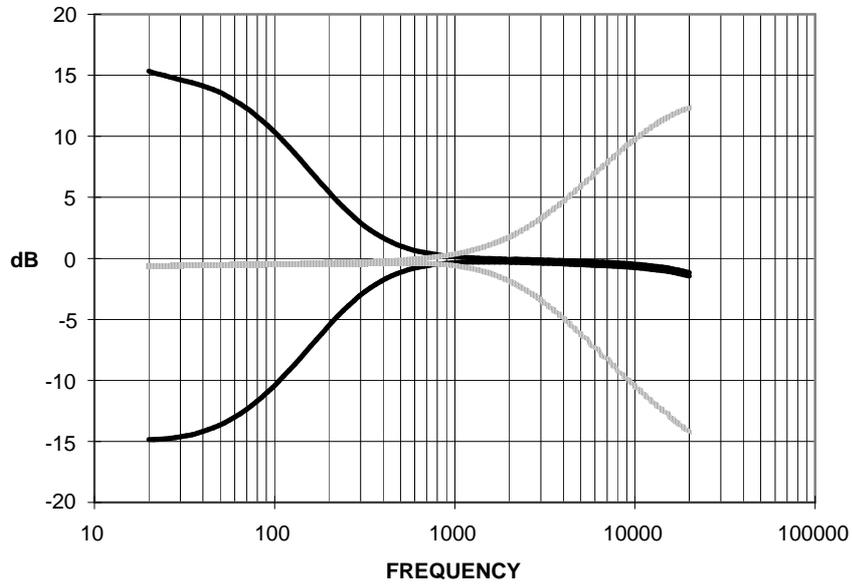
WEIGHT

6 I/P	8 I/P	10 I/P	12 I/P
6	7	8	9

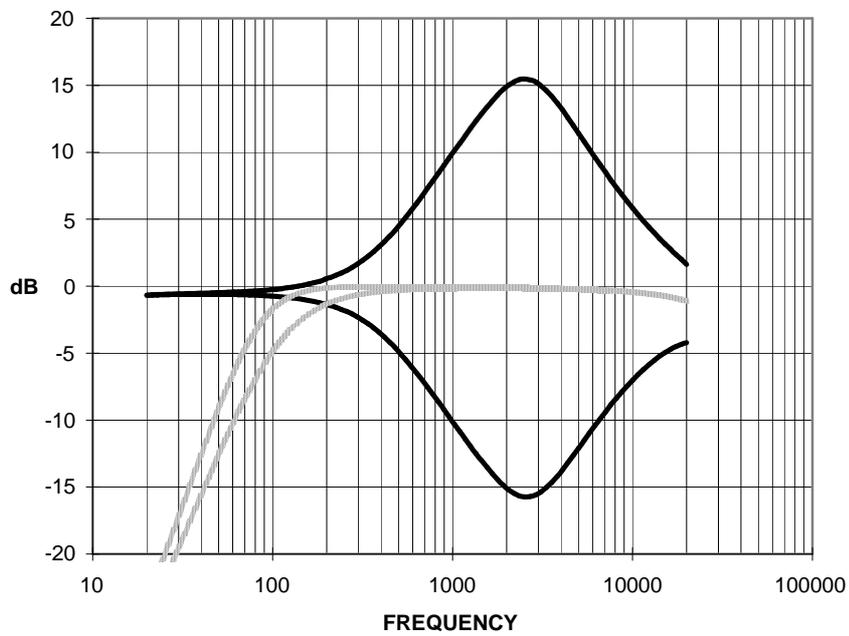
ALL WEIGHTS IN KILOGRAMS

EQUALISATION CURVES

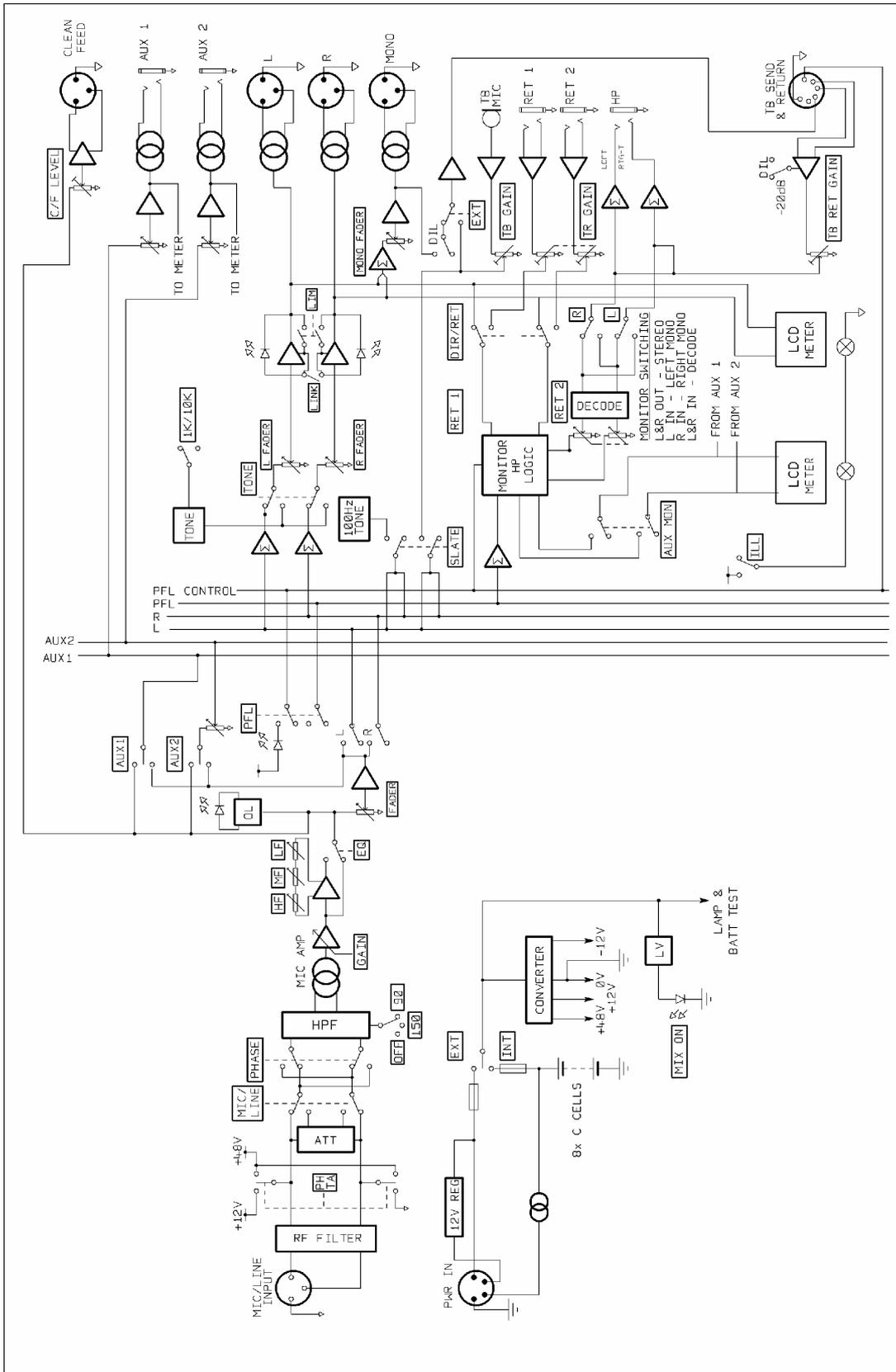
AD255 HIGH AND LOW EQ



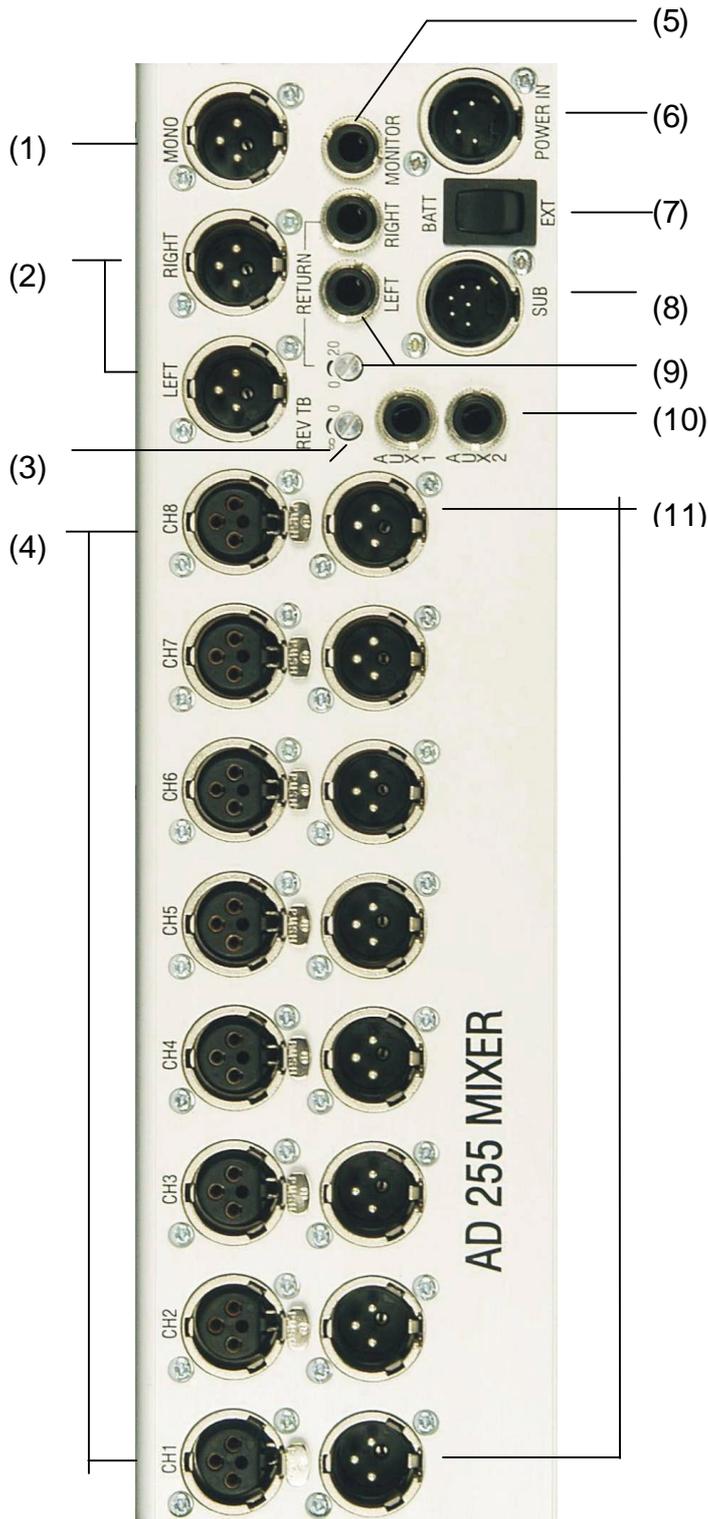
AD255 MID EQ AND HPF



BLOCK DIAGRAM



CONNECTOR PANEL



- (1) Mono output XLR
- (2) Stereo output XLRs (L & R)
- (3) Reverse talkback preset
- (4) Mic/line input XLRs
- (5) Headphone monitor jack
- (6) External DC power input
- (7) Off/On switch (internal and external)
- (8) Subsidiary connector
- (9) Stereo-return jacks (L & R) and calibration preset
- (10) Auxiliary output
- (11) Channel direct output XLRs

All input and output impedances and levels are to be found in the TECHNICAL SPECIFICATION.

All inputs to, and outputs from AD255 are to be found on the connector panel.

Module connector (4) accepts balanced microphones and balanced line-level inputs.

XLR (input & output)	Pin 1	Shield
	Pin 2	Signal +
	Pin 3	Signal -

In the case of unbalanced line-inputs and outputs, pins 1 & 3 should be connected. This will not lead to a loss of level.

Channel direct outputs (11) are at line level and unbalanced

Main stereo (2), mono (1) and auxiliary outputs (10) are transformer balanced and are at line level.

The auxiliary outputs appear on two 'A' type stereo jacks.

The electronically-balanced stereo tape-return enters the mixer on two standard, 'A' type stereo jacks (9); left and right. Adjacent is the input calibration preset. For a 0dBu return signal, the system is calibrated when the preset is fully counter-clockwise. From that point 20dB gain is available for lower level signals.

Unbalanced headphone monitor output appears on an 'A' type stereo jack (5). This output is capable of driving 25R at 0dBu.

STEREO BALANCED JACK

Tip	Signal +
Ring	Signal -
Sleeve	Shield

STEREO UNBALANCED JACK

Tip	Left signal
Ring	Right signal
Sleeve	Shield

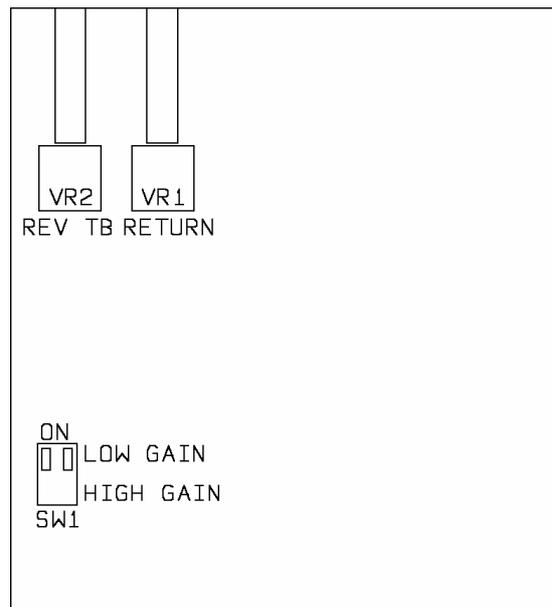
The 6-pin XLR connector, SUB (8), carries all signals to and from an outstation. Reverse-talkback level may be set by REV TB preset (3).

XLR	Pin 1	Shield	Pin 4	Ret +
	Pin 2	Send +	Pin 5	Ret -
	Pin 3	Shield	Pin 6	Control

The unbalanced send is low impedance with a capability of driving headphones of 25 ohms impedance or greater.

The balanced (or unbalanced) signal from the outstation may be at mic level or line level. The mixer leaves the factory set for a line-level return, but the gain of the return amplifier may be increased by 20dB via the DIL switch on the sub board attached to the connector panel. Preset (9) controls the level of the return - which feeds on to the PFL mixing buss and is routed by grounding the control line (Pin 6) at the external source.

Thus, a two-way conversation can take place between mixer and boom operator with the boom operator being able to listen to programme when no communication is taking place. The programme may be selected, via a DIL switch; between the mono output from the mixer or the signal from input channel 1 (when being used for the boom microphone). The DIL switch appears on the output module PCB. (Refer to block diagram and line drawing in output section.) The mixer leaves the factory with the DIL switch set in the MONO position.



A three-position rocker switch BATT/EXT (7) selects either internal batteries or an external DC source. Power to the mixer is confirmed by the MIX ON LED on the output module. The LED flashes when the internal voltage falls below the safe operating level of 9V.

External powering of the mixer is via a 4-pin XLR (6).

XLR	Pin 1	OV	Pin 3	NC
	Pin 2	Charge	Pin 4	12-15V DC

A suitable external power supply unit is model number AEH24US15 supplied by Audio Developments (Part No 94-100-015), but any external DC source must be capable of delivering 1A at 12V.

MICROPHONE/LINE INPUT MODULE

- (1) Microphone power _____
- (2) Line input _____
- (3) Phase change _____
- (4) High-pass filter _____
- (5) EQ selector _____
- (6) Auxiliary 1 selector _____
- (7) Auxiliary 2 selector _____
- (8) Panoramic potentiometer _____
- (9) Pre-fade listen _____
- (10) PFL indicator LED _____
- (11) Direct out level control _____
- (12) Overload indicator _____



- _____ (13) Input-gain control
- _____ (14) High-frequency control
- _____ (15) Mid-frequency control
- _____ (16) Low-frequency control
- _____ (17) Auxiliary 2 level control

_____ (18) Channel fader

The Microphone/Line input module functions are as follows: Switch (1) selects 48V phantom and 12V tonader power for condenser microphones. Powering may be selected before or after connecting the microphone, but switch off all powering on unterminated modules to ensure unconditional stability of the mixer. For complete safety of external equipment, switch off microphone power before connecting a line-level signal.

Phase change (3) is pre transformer and operates on microphone and line inputs. \emptyset_1 is the normal position.

The high-pass filter (4) is pre transformer and, similarly, operates on microphone and line inputs. In this position the filter protects the transformer from low-frequency saturation caused by wind, traffic, air conditioning etc. Operating frequencies are to be found in the TECHNICAL SPECIFICATION. The high-pass filter operates independently of the equaliser.

The input gain of the microphone amplifier is set by the rotary potentiometer (13) The range of this control is 45dB. For line level signals, an input attenuator (30dB) is inserted via switch (2); the MIC/LINE change-over switch.

Following the microphone amplifier is the simple, but effective, equaliser which has been retained from the original PICO - selector switch (5). Because of the inherent inaccuracy of the centre-detent mechanism, it is not Audio Developments' practice to fit such devices to equaliser amplitude controls - HF (14), MF (15), LF (16).

The auxiliary section is incorporated below the equaliser controls. The two auxiliaries are independent of each other; each has its own off/pre/post switch (6) and (7). The off position disconnects the channel signal from the auxiliary busses and the pre/post position routes the signal to the busses from either the pre or post fader position of the signal path. The auxiliary routeing switches are independent of the channel L/R routeing.

Auxiliary 1 is a fixed level and auxiliary 2 has a level control (17), which acts purely as an attenuator - when set at 10 and source post-fader the output tracks with, and is at the same level as the L/R outputs from the module. This also applies to the post-fader position of auxiliary 1.

The unbalanced channel output is available on a XLR on the connector panel in line with the input connector. The level of the direct out signal is controlled by preset (11). The output is pre-fader as standard, but can be changed by the wiring of internal links.

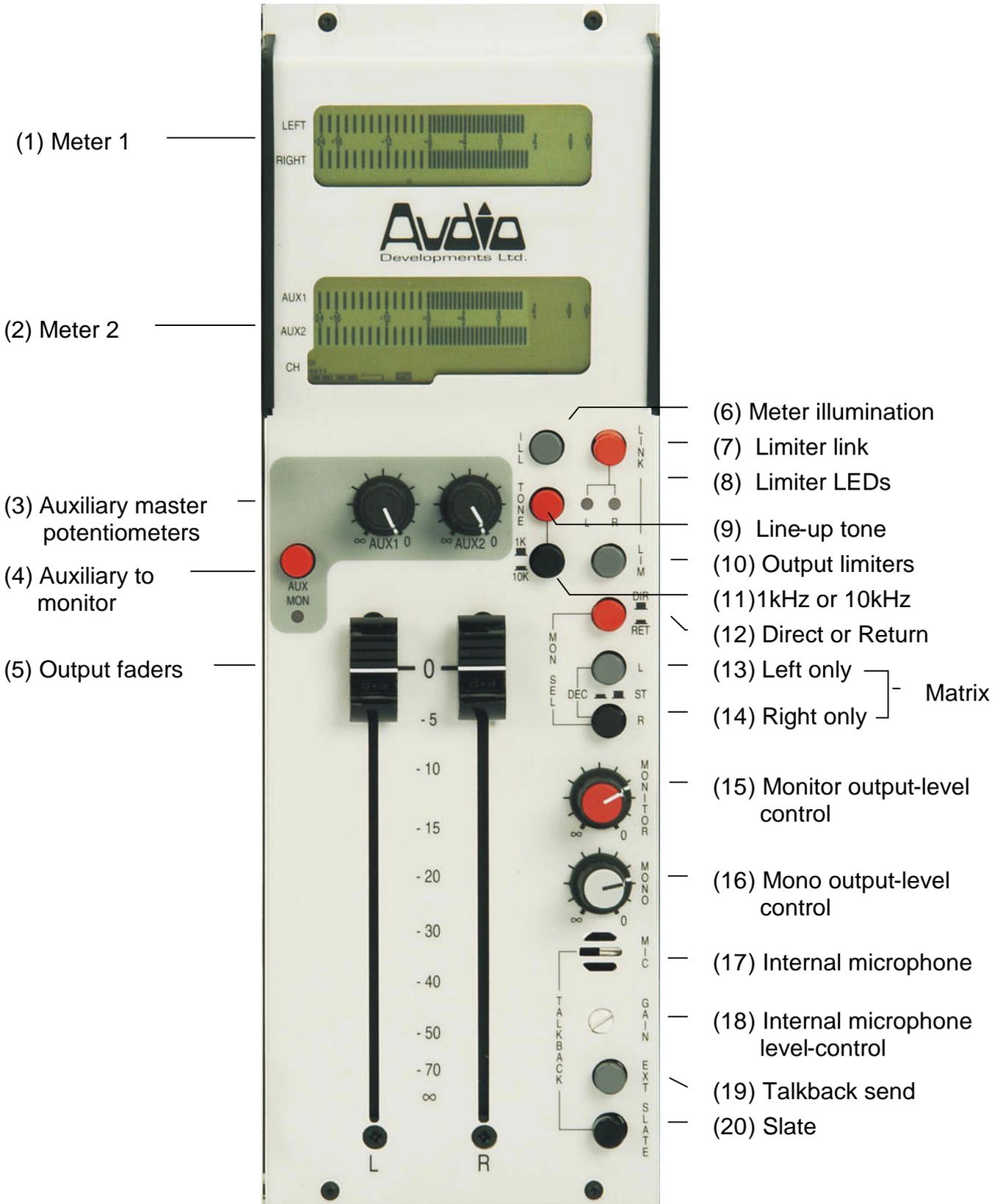
A panoramic potentiometer - panpot - (8) routes the module's signal proportionately between the left and right mix busses.

Pre-fader listen (9) with its LED indicator (10) routes the module's signal to the monitor/PFL mix buss for auditioning on headphones.

An overload LED (12) illuminates 3dB before clipping at the input to the fader.

The Penny & Giles fader (18) is calibrated 10dB from its fully open position, allowing the operator to work with 10dB of gain in reserve. Faders on adjacent modules can be coupled for stereo operation by the use of standard ganging clips.

OUTPUT MODULE



This module controls the level of main and monitor output signals and metering of the output and monitor signals (including PFL). Calibration is achieved when the output faders (5) are at maximum.

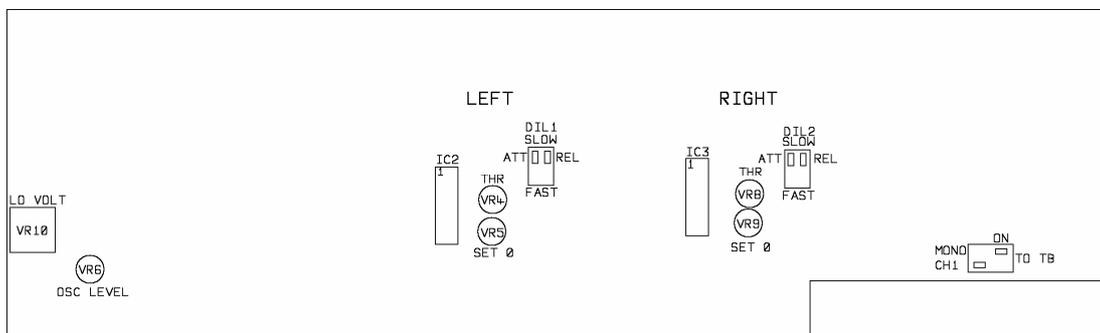
The two LCD meters read the various outputs and battery status. The upper meter (1) reads left and right outputs; the upper bar reading left output and the lower right output. The lower meter (2) reads the auxiliary outputs, channel output and battery status. The upper bar reads auxiliary 1 output, the middle bar auxiliary 2 output and the lower bar the channel signal level at the pre-fader point. This is activated when PFL is selected on an input module. Battery status is read on the six segment bar in the lower left corner. Beginning with the sixth bar, each bar goes out in turn as the battery level falls.

When the internal or external voltage drops below a safe operating level, the first segment of the battery level indicator will flash. Meters may be illuminated by ILL (6). If a greater level of back-light is required then a facility exists on each meter, via a DIL switch, to achieve this. Refer ADJUSTMENTS & CALIBRATION section.

The main output signal is metered and monitored after the output faders and limiters.

A pair of limiters may be switched in to the main output - LIM (10) - and linked for stereo operation - LINK (7). LEDs (8) indicate when limiting is taking place. A choice of fast or slow attack and release times may be made via the two DIL switches on the output printed circuit board. When the limiters are being used as a stereo pair, they should have their attack times and release times set identically. The factory setting for the DIL switches is SLOW.

OUTPUT MODULE PRINTED CIRCUIT BOARD



Line-up tone, when selected (9), replaces the normal signals on the main output. The frequency of the line-up tone may be selected between 1kHz and 10kHz (11). Line-up tone is calibrated on the (PPM-scaled) meters to '0', giving a line-output level of 0dBu with the output faders set to maximum.

The auxiliary output signal levels are controlled by two potentiometers (3).

Separate Penny & Giles faders (5) are employed for maximum flexibility and control of the main left and right output signals.

The remaining controls are associated with headphone-monitoring of signals from the mixer - internal signals (DIR) or return (RET) may be selected (12): these signals may be in the L-R domain or the M-S domain. When switches (12), (13) and (14) remain unselected the main-output signal from the mixer appears on the headphones. If L (13) is selected, the left-output signal appears on both ear-pieces; if R (14) is selected, the right-output signal appears on both ear-pieces. If switches (13) + (14) are selected, a matrix will enable mono compatibility to be assessed on the left ear-piece and out-of-phase components to be checked on the right ear-piece. When working entirely in the M-S domain, the matrix will transform the mixer output into the L-R domain for monitoring purposes. Selection of RET (12) will allow these functions to be performed on a return signal. Selection of AUX MON (4) allows these functions to be performed on the auxiliary output signals accordingly. For example if L (13) is selected, the auxiliary 1 signal appears on both ear-pieces. The level of the monitor signal is controlled by potentiometer (15).

A mono mixdown of the main, stereo output from the mixer is available and its level is adjusted by MONO (16).

The signal from the internal microphone (17) replaces any other signal appearing at the outstation when routed via EXT (19) - the level being set by preset GAIN (18).

SLATE (20) allows the mixer operator to ADD a voice signal to the main stereo output together with a low-frequency identification tone (100Hz).

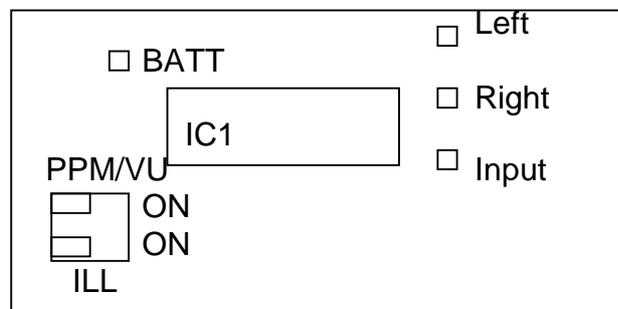
When PFL is selected on an input channel or when the outstation wishes to communicate with the mixer operator (by grounding pin 6 on the multiway), logic changes the signal on monitor output accordingly.

ADJUSTMENTS AND CALIBRATIONS

Meters - are to broadcast specification and either a VU or a PPM may be selected. A choice of 3 scales is available for the PPM: BBC, N10, SDR.

Line-up-tone oscillator - the preset (VR6) that adjusts its level at the output of the mixer is mounted on the output module printed circuit board.

Low-battery indicator - the preset (VR10) associated with this facility is also mounted on the output module printed circuit board. The low reading is set at the factory and corresponds to a set of batteries having discharged to 9v. On a VU meter, low volts is at 0VU. On a PPM meter it is indicated by a separate marking: yellow on a BBC scale and red on an N10 and SDR scale.



Meter Calibration

Each meter drive card has one preset potentiometer calibration control per indicator bar; they control the adjustment of the indicator bar reading in relation to the signal level being measured. All other aspects of the meter specification are taken care of within the software and fixed values within the circuit components.

Access is gained to the meter drive card by removal of the output module; the drive card being mounted on the rear of its LCD indicator. Extender cables are required to enable the output module to be powered and operated outside of the chassis.

Meter adjustment - Set an input module for a line input and introduce a 1kHz tone from an audio signal generator. Adjust levels to achieve a reading of 0dBu, if setting a PPM scale, or +4dBu if setting a VU scale, at the appropriate main output, on an AC millivoltmeter. Adjust the associated preset potentiometer to give the correct meter reading for the signal level set.

Battery level adjustment - The low reading is set at the factory and corresponds to a set of batteries having discharged to 9V. If a different calibration is required this can be set by the preset potentiometer marked BATT on the above diagram.

PPM or VU setting - A DIL switch controls this function and is shown on the above diagram. When the switch is in its off position the meter follows a PPM characteristic and in the on position a VU characteristic.

Meter illumination - A DIL switch enables the intensity of the meter back-light to be altered. The factory setting is with the switch in the off position. It is recommended that this setting is retained, because the higher intensity setting obviously increases battery drain.

Main-output limiters - calibration involves two presets per output.
Using the 'L' output as the example ...

Biasing and threshold are adjusted as follows: VR5 biases the limiter circuit to the point of correct operation and VR4 sets the threshold. (Labelled SET 0 and THR respectively.)

With no signal present, VR5 should be adjusted to give a reading in the range -1.5V to -2.5V at PIN 8 of IC 2. VR4 should be adjusted to give a reading in the range -2.5V to -3.5V at PIN 12 of IC2.

Apply a signal at 1kHz to the mixer to give a level of 0dBu at 'L' output. Then select the limiter function and adjust VR5 until the output signal starts to fall (typically 0.2dB). The DC voltage at PIN 8 of IC 2 should be approximately -2.0V.

After setting VR5, adjust the output signal to just greater than +8dBu with the limiter deselected. Introduce the limiter and adjust VR4 until the output signal falls to +8dBu. This is the THRESHOLD setting. (If a different threshold setting is required, alter the signal levels accordingly.) The DC voltage at PIN 12 of IC 2 should be approximately 0.6V different from that at PIN 8.

The right output can be set using the above procedure, but the preset and IC numbers change to correspond with the output being calibrated.

The link function has no individual setting of its own. To ensure this works within specification it is important that L and R outputs are set up as a pair. After following the above procedure, the DC voltages at PINS 8 and PINS 12 of the ICs should be identical. (Tolerance $\pm 0.05V$ with typical figures at PIN 12 of -2.6V and PIN 8 of -2.0V)

There are two DIL switches associated with the attack and release times: one for the left output, the other for the right output.

**POWER SUPPLY UNIT
TYPE AD100-015**

The AD100-015 mains POWER SUPPLY UNIT is suitable for driving most of AUDIO DEVELOPMENTS' range of portable audio mixers. This PSU is a single-rail device providing 1A of current at +15V DC potential and is used as a substitute for battery power with mixers containing an internal DC-DC converter.

The AD100-015 may be powered from either a 110/120V AC source or a 220V/240V AC source. Ensure that the AC voltage source is in the range 100V to 240V AC. Operating the equipment at the wrong voltage could be hazardous. Care must be taken to connect the LIVE, NEUTRAL and EARTH pins of the PSU's IEC mains connector to the corresponding terminals associated with the AC source. The PSU contains an indicator that illuminates when the PSU is operational.

FOR SAFETY REASONS, AD100-015 POWER SUPPLY UNIT MUST BE CONNECTED TO MAINS EARTH. Any maintenance to the PSU or its mains cable assembly should be performed by a qualified engineer.

CHARGING: If nickel-cadmium cells are fitted in an AD255 series mixer, they may be recharged in situ from AD100-015 power supply - whether the mixer is in use or not. (Maximum current is set at 250mA - in addition to the 500mA of current supplying the audio electronics.). The charge circuit within the mixer is powered by linking Pin 2 to Pin 4 of the 4 pin DC Power XLR. **DO NOT ACTIVATE THE CHARGE CIRCUIT UNLESS THE MIXER IS FITTED WITH NICKEL-CADMIUM CELLS. REMOVE CHARGE LINK FROM POWER-IN XLR IF DRY-CELLS ARE FITTED.**

FUSE: A fuse link should be fitted to the mains supply to protect against fault conditions

250mA HRC TYPE T 240V AC

For continued safety the specified fuse link must be fitted in the mains fuse holder when a replacement is required. Ensure it is of a type approved by a National Approved Body.

DC-OUTPUT XLR	PIN 1	OV	PIN 3	NOT CONNECTED
	PIN 2	CHARGE	PIN 4	+15V DC

DO NOT REMOVE THE OUTER COVERS

NOTE: The power supply unit should be serviced by a suitably qualified engineer. Only genuine spare parts with identical specification must be used.

It is DANGEROUS to change the specification or modify the product in any way.

CUSTOMER NOTES AND FACTORY MODIFICATION

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