

# ALLEN & HEATH



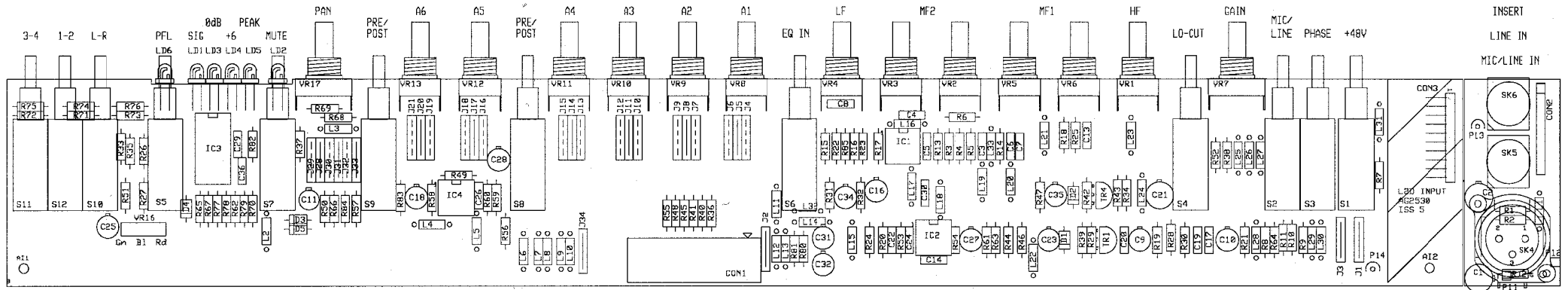
## **WARNING – HIGH VOLTAGES**

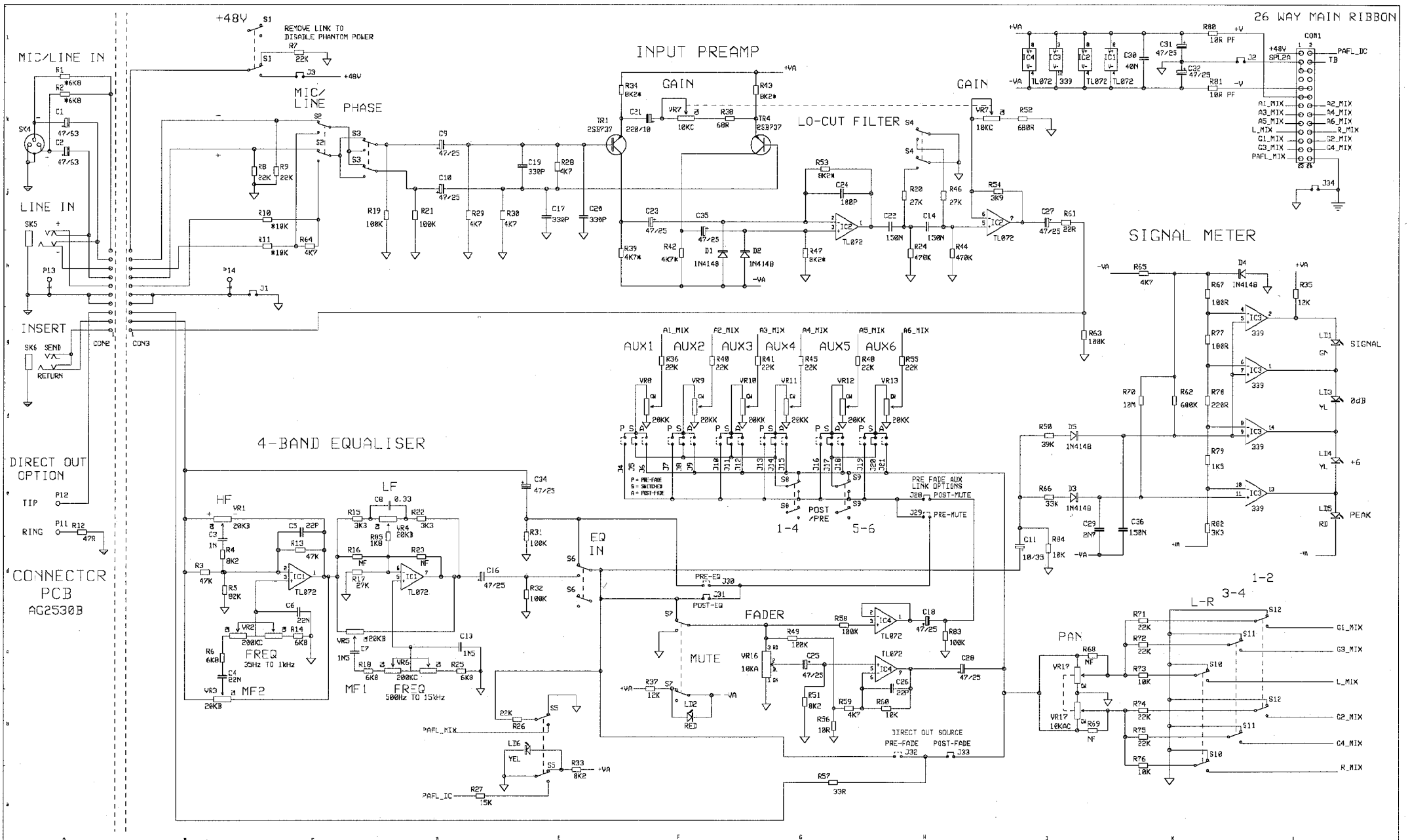
Power Supply Unit (PSU) work should only be carried out by qualified personnel.

We recommend that you use an approved Allen & Heath service centre for all power supply work.

Please contact your local Allen & Heath distributor for more details.

<http://www.allen-heath.com/>





ISS.	REVISION	BY	DATE
0	ORIG'N	DRP	6-12-95
1	REDESIGN	DRP	7-2-96
2	PRE-PROD	DRP	26-2-96
3	PRODUCTION	DRP	2-4-96
4	VALUE CHANGES	ARJ	19-4-96
	IC24 100PF MMS 22PEEM116	DRP	7-5-96

NOTES

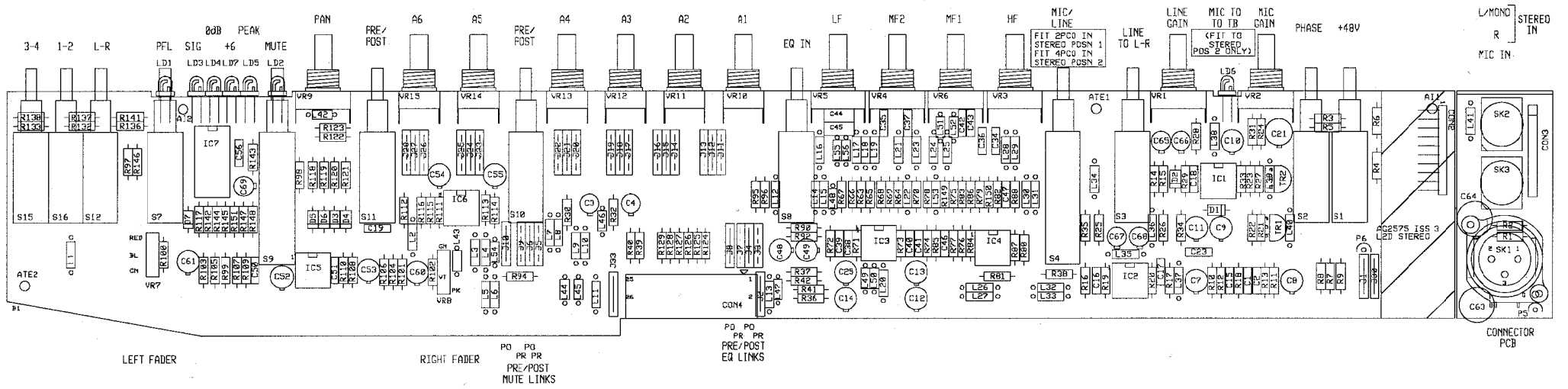
- RESISTORS MARKED R ARE Ω
- ALL OTHERS ARE Ω UNLESS OTHERWISE MARKED
- ELECTROLYTIC CAPACITORS ARE μF/VOLTS

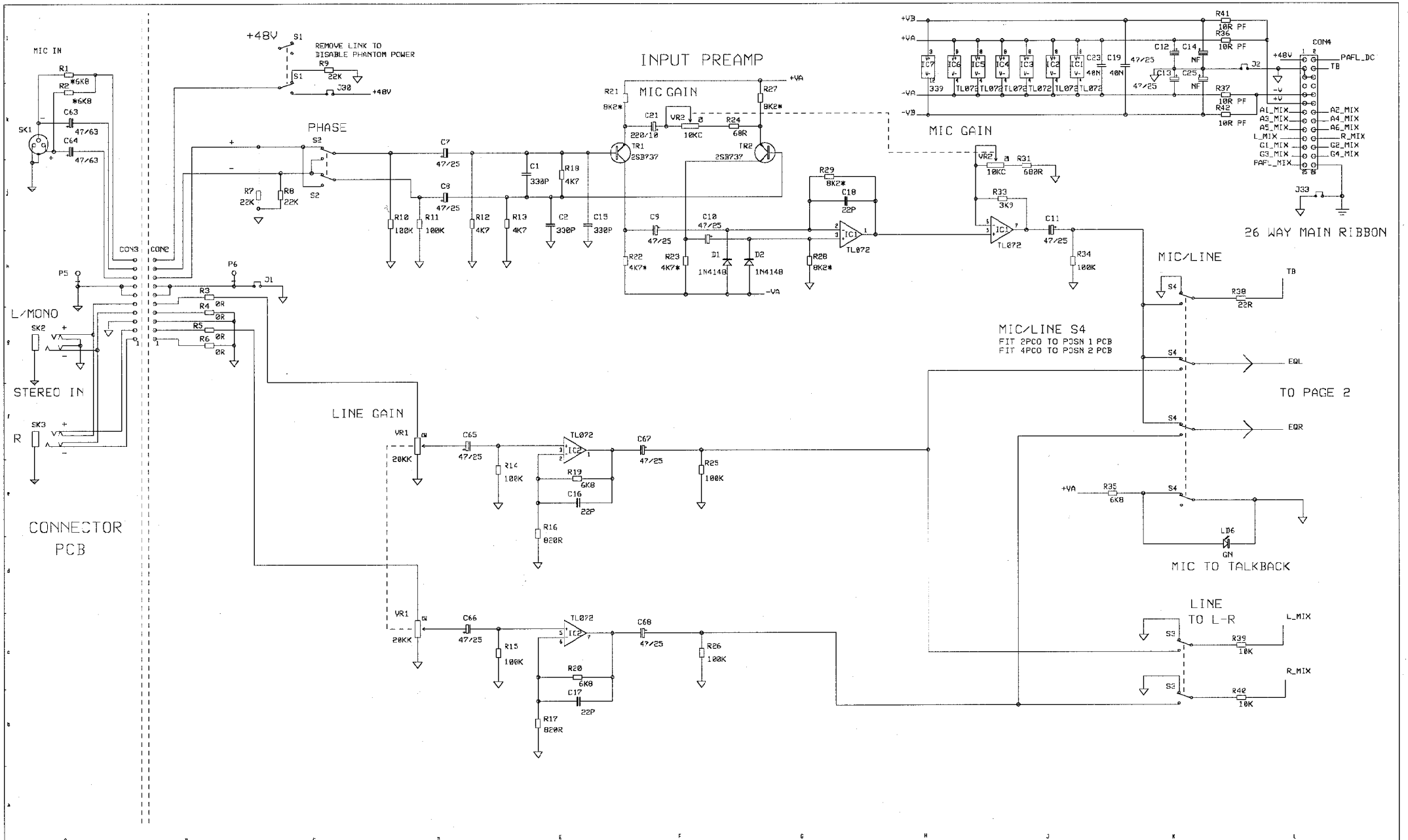
UNIT TITLE  
L2D

DRAWING TITLE  
INPUT CIRCUIT DIAGRAM  
PCB TYPE AG2530

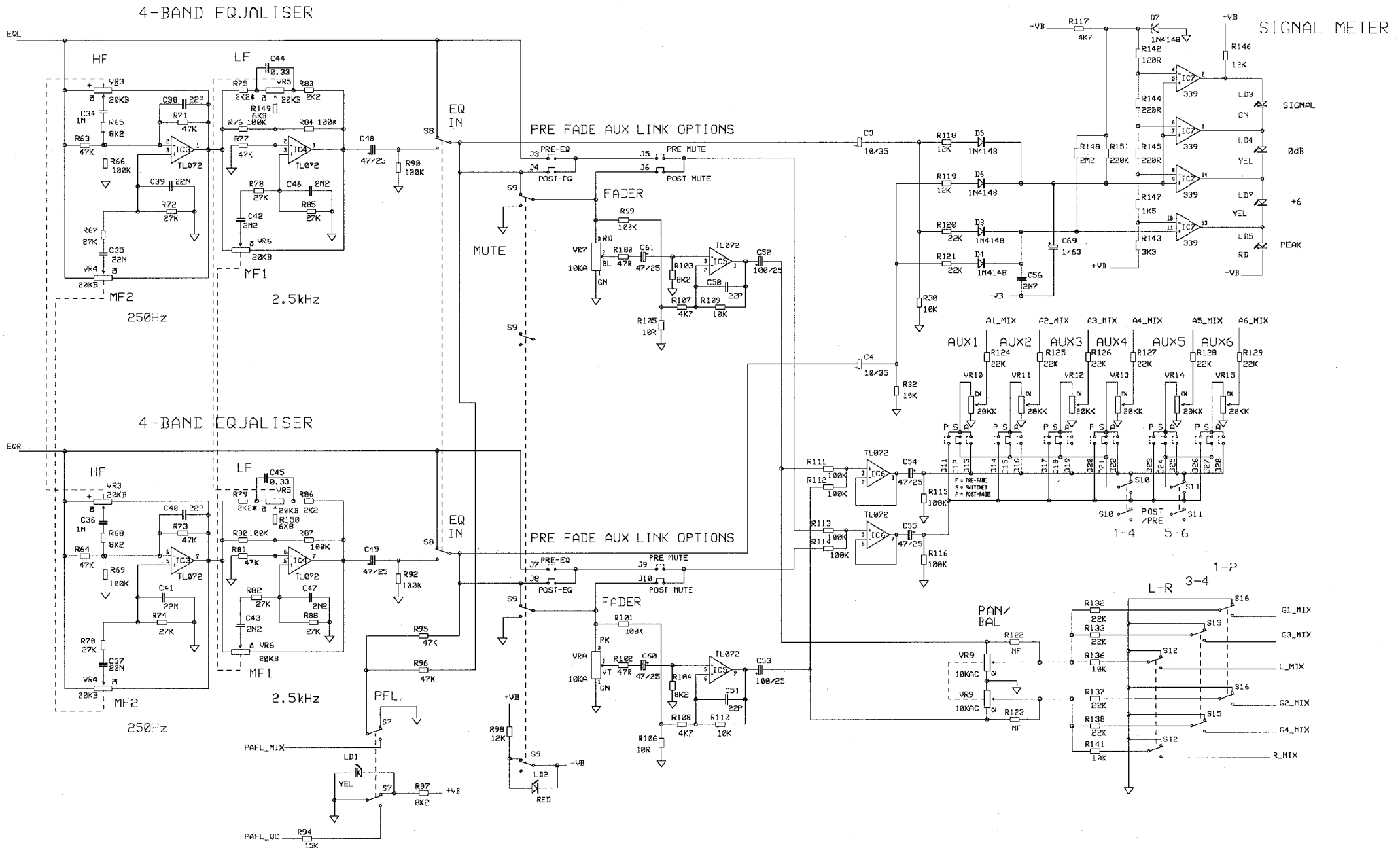
MANUFACTURED IN ENGLAND BY  
ALLEN & HEATH

DRAWING No. C2530 ISSUE 4 A1





ISS.	REVISION	BY	DATE	NOTES	UNIT TITLE	MANUFACTURED IN ENGLAND BY
A	ORIGIN	DRP	4-3-96	1. RESISTORS MARKED * ARE 1% ALL OTHERS ARE 5% 1/4W UNLESS OTHERWISE MARKED	L2D	ALLEN & HEATH
1	PRODUCTION	DRP	2-4-96		PAGE 1 OF 2	
2	C3,4 R30,32 ADDED	DRP	26-4-96	2. ELECTROLYTIC CAPACITORS ARE µF/VOLTS	DRAWING TITLE	DRAWING No. C2575 ISSUE 2
					STEREO CIRCUIT DIAGRAM FOR PCB TYPE AC2575	A1

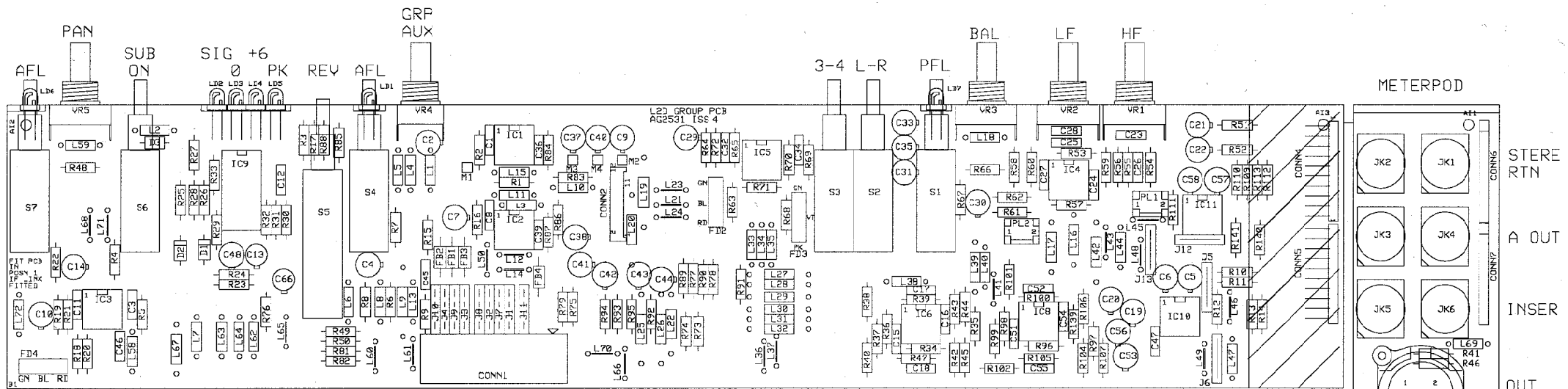


ISS.	REVISION	BY	DATE	NOTES
1	ORIGIN PRODUCTION	DRP	4-3-96	1. RESISTORS MARKED * ARE 1% ALL OTHERS ARE 5% 1/4W UNLESS OTHERWISE MARKED
2	CS, 4 R38, 32 ADDED	DRP	26-4-96	2. ELECTROLYTIC CAPACITORS ARE µF/VOLTS

A	B	C	D	E	F	G	H	J	K	L

UNIT TITLE	L2J	PAGE 2 OF 2
DRAWING TITLE	STEREO CIRCUIT DIAGRAM FOR PCB TYPE AG2575	

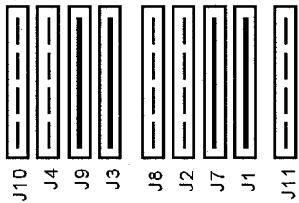
MANUFACTURED IN ENGLAND BY	ALLEN & HEATH
DRAWING No.	C2575 ISSUE 2
	A1



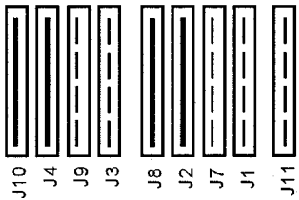
FADER

26WAY RIBBON

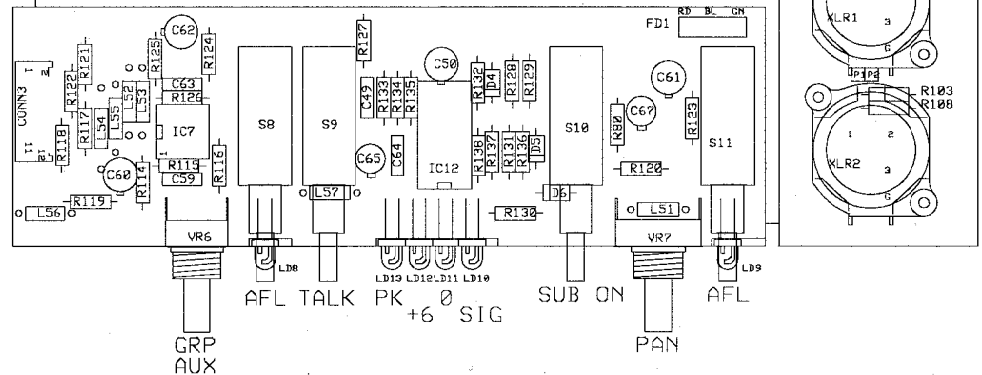
### AUX/GROUP ASSIGNMENT



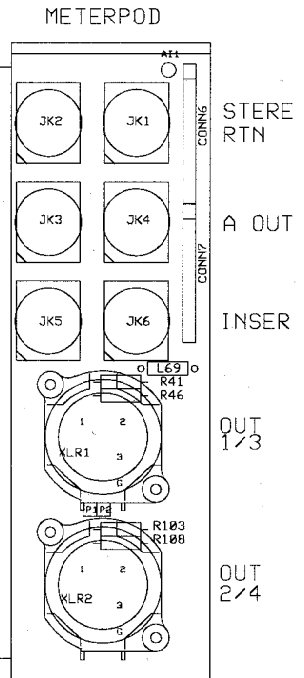
GROUP 1/2  
AUX 1/2

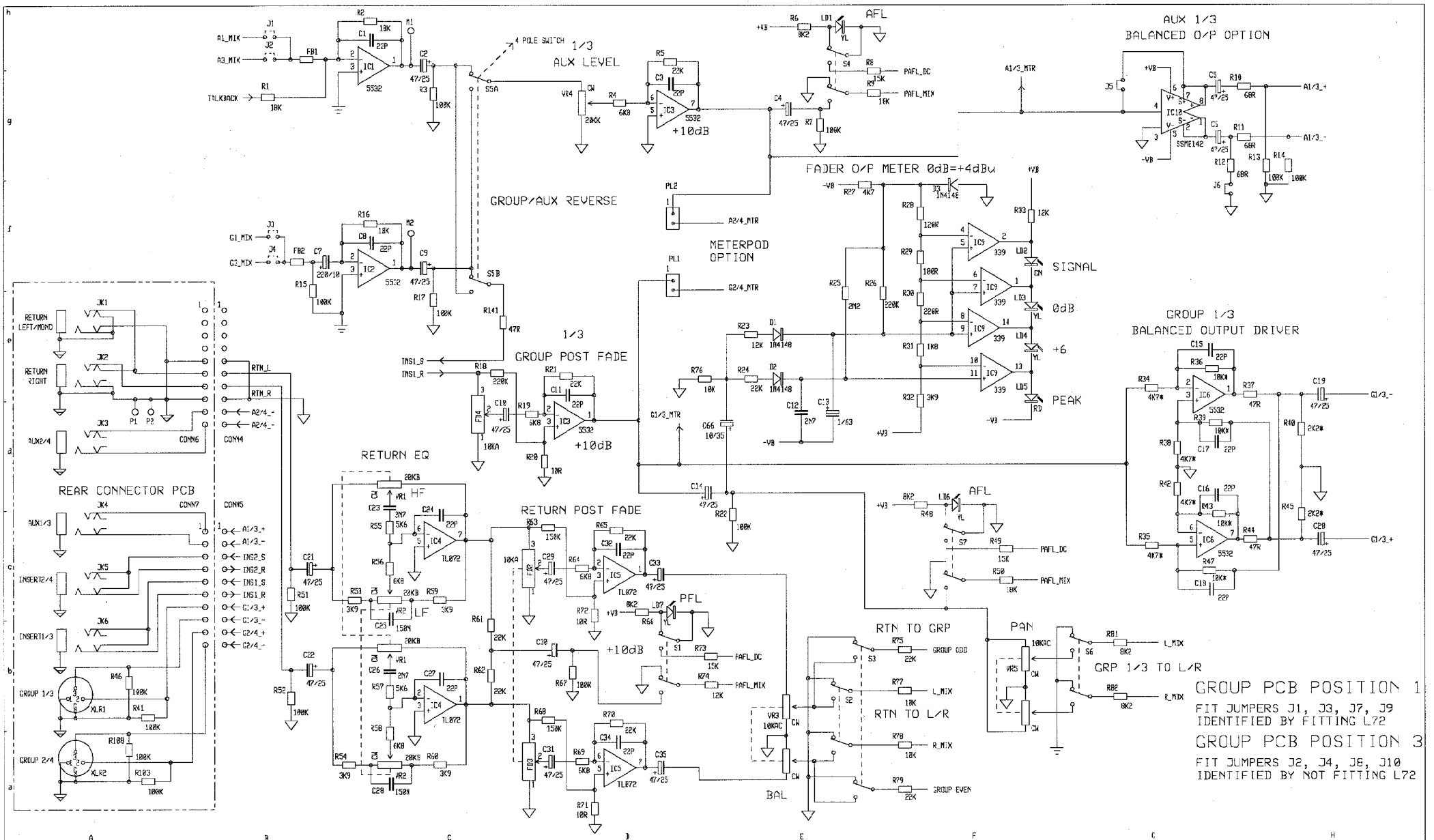


GROUP 3/4  
AUX 3/4



LINK L44 REPLACED WITH 47/25 ELECTROLYTIC CAPACITOR  
ORIENTATED THE SAME WAY AS C6 & C20.





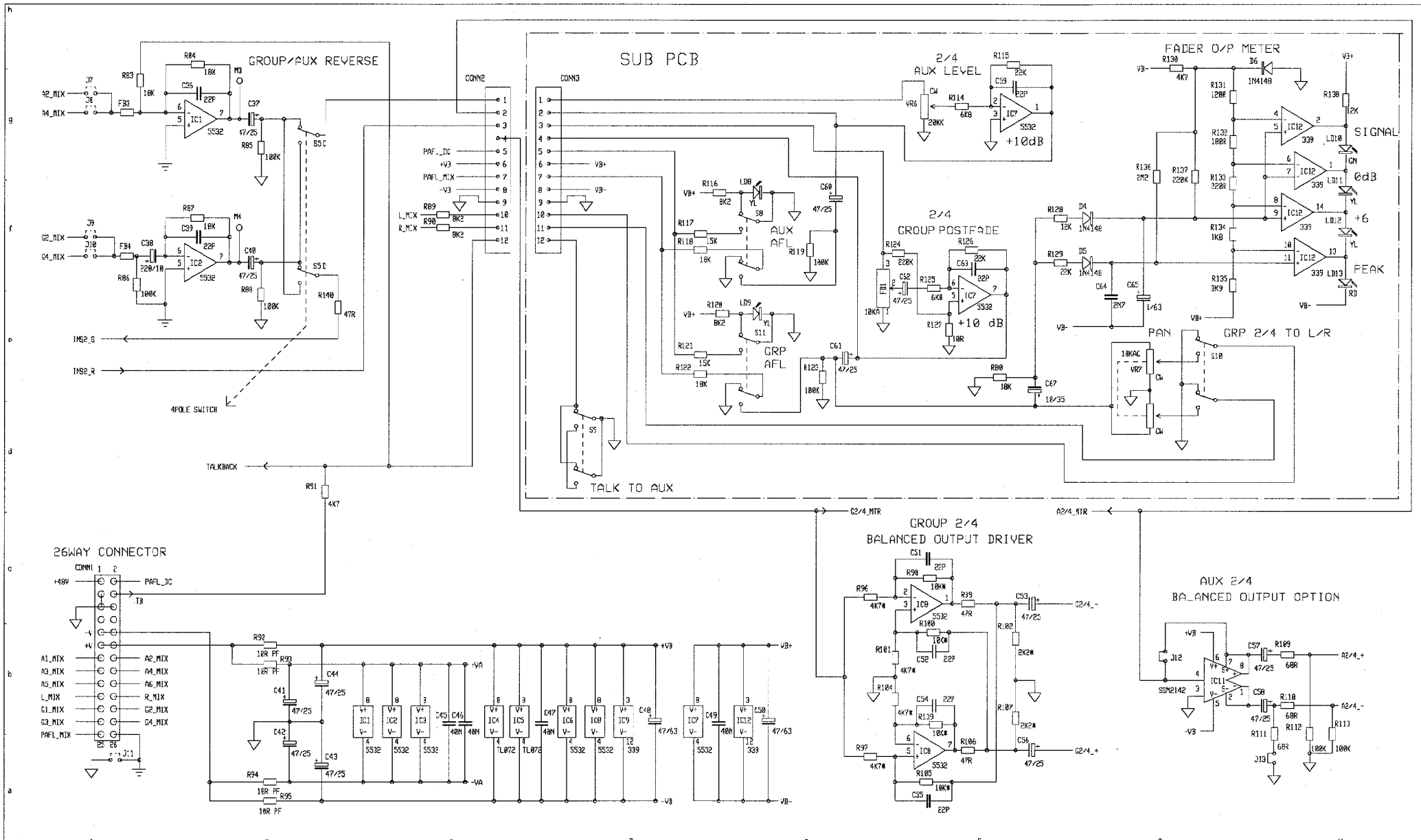
ISS.	REVISION	BY	DATE	NOTES
B	REVISED	ARJ	7-2-96	1. RESISTORS MARKED * ARE 1% ALL OTHERS ARE 5% 1/4W UNLESS OTHERWISE MARKED 2. ELECTROLYTIC CAPACITORS ARE µF/VOLTS
C	JUMPER NOTE ADDED	DRP	16-3-96	
D	PRODUCTION	DLP	2/4/96	

UNIT TITLE  
**L2D** PAGE 1 OF 2

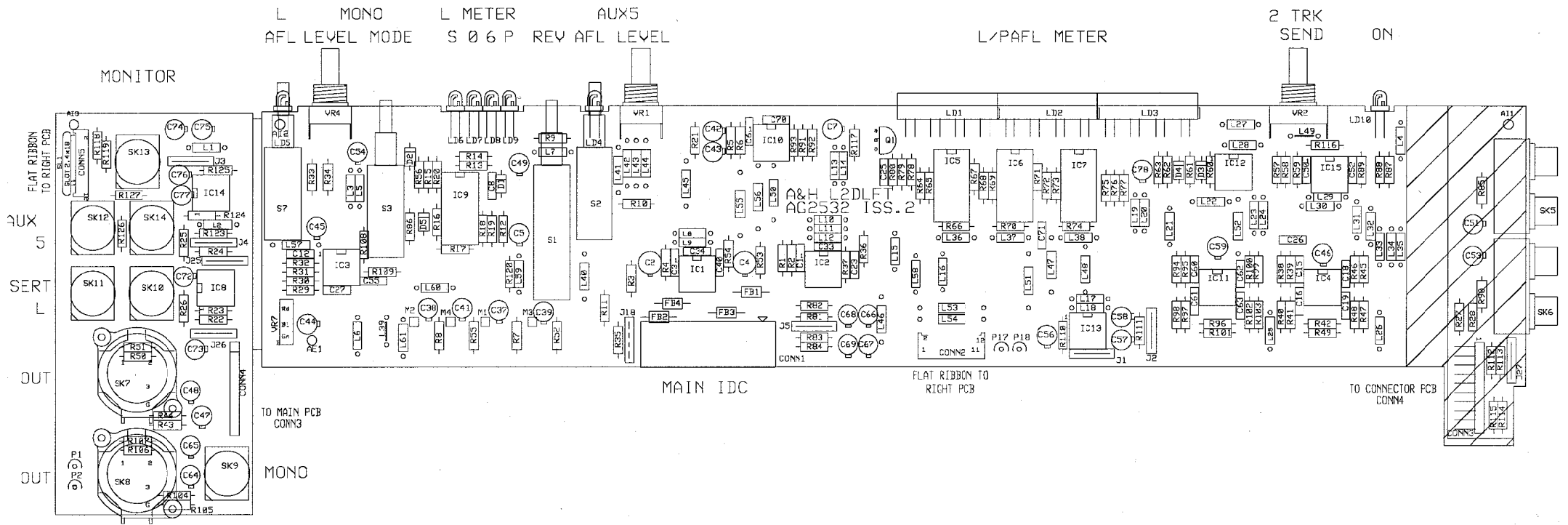
DRAWING TITLE  
**GROUP PCB**  
 PCB AG2531

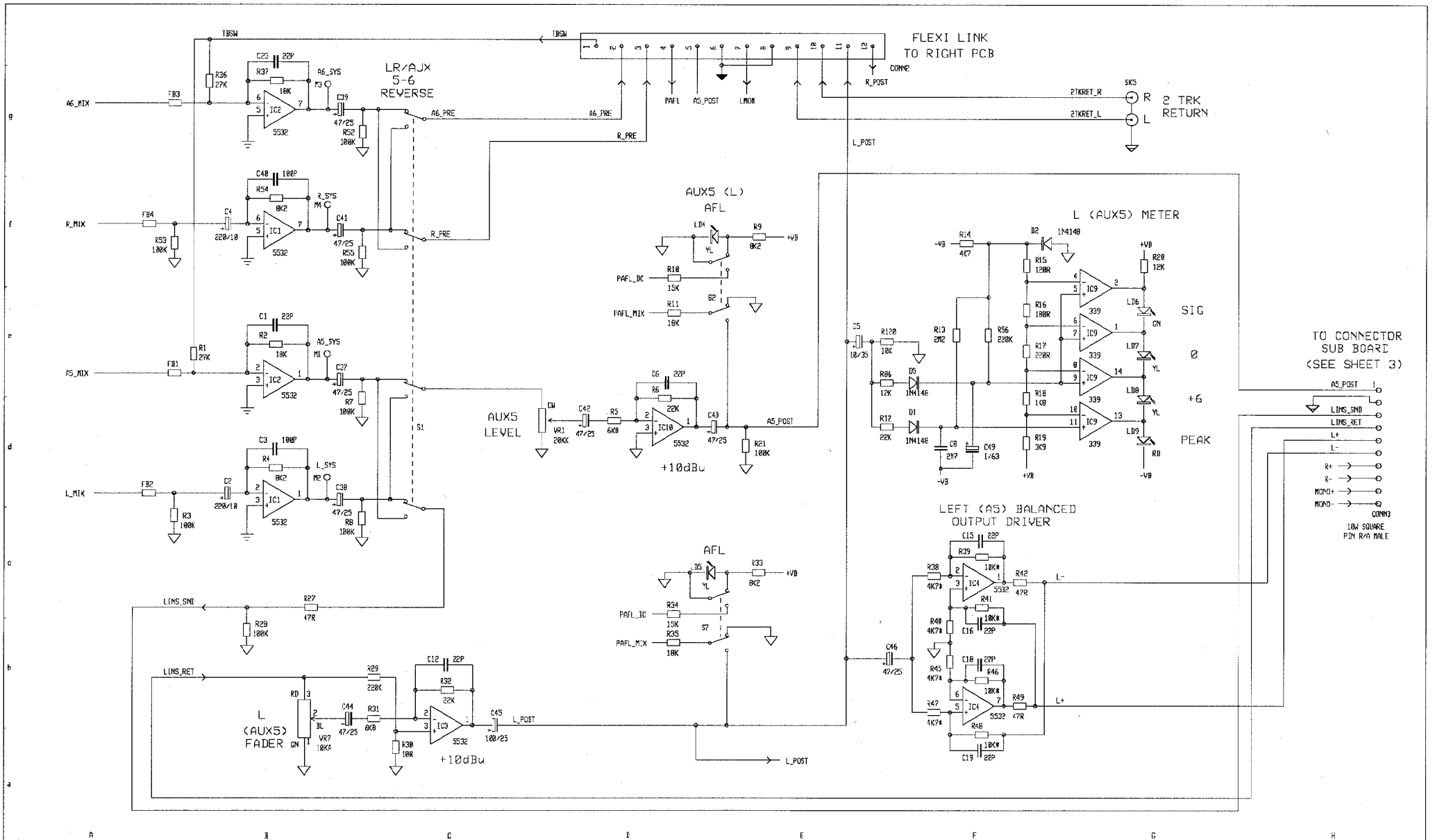
MANUFACTURED IN ENGLAND BY	
ALLEN & HEATH	
DRAWING No.	ISSUE
C2531	1
	A2



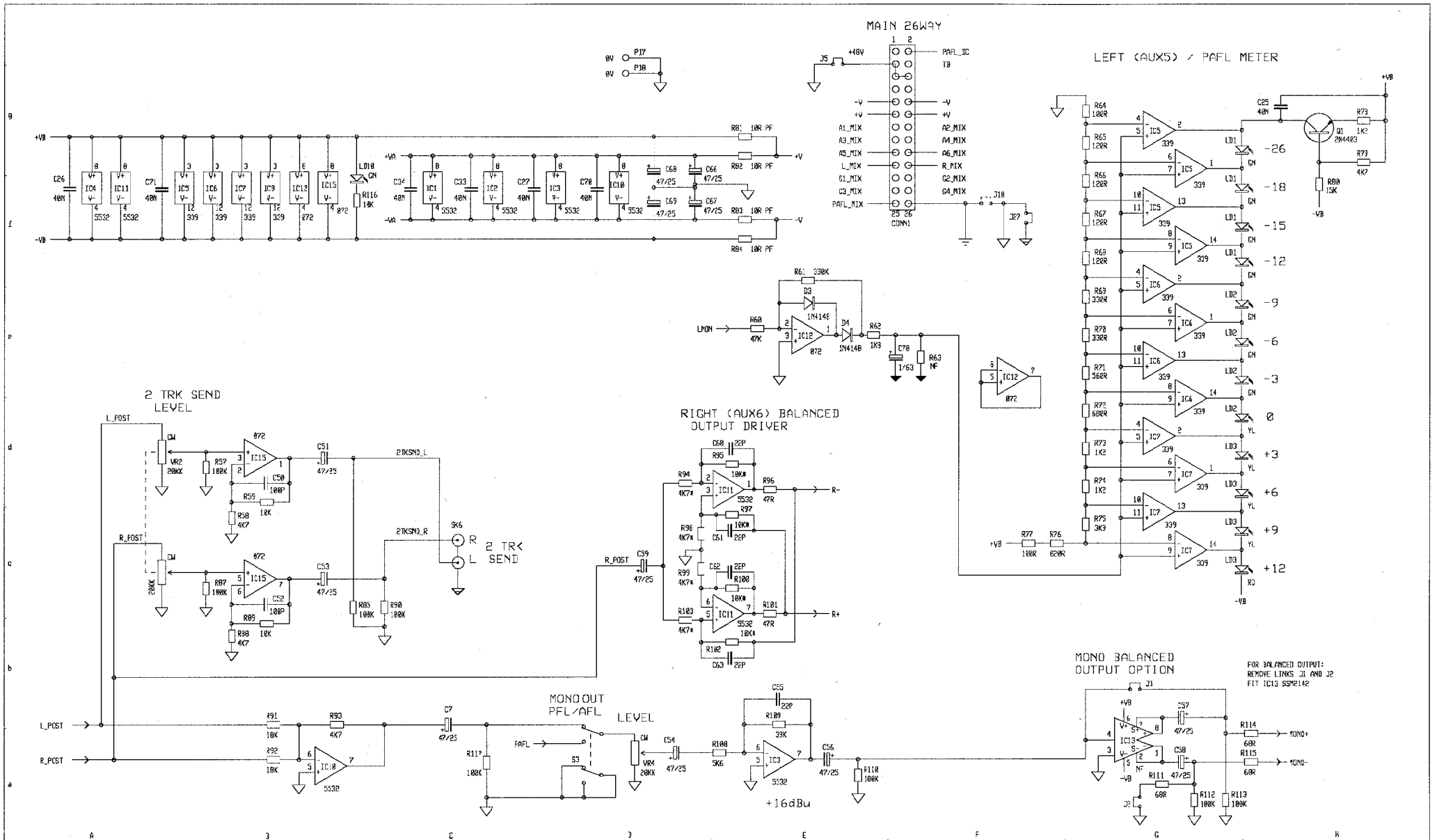


ISS.	REVISION	BY DATE	NOTES	UNIT TITLE	MANUFACTURED IN ENGLAND BY
B	REVISED	ARJ 7-2-96	1. RESISTORS MARKED * ARE 1% ALL OTHERS ARE 5% 1/4W UNLESS OTHERWISE MARKED	L2D PAGE 2 OF 2	ALLEN & HEATH
C	JUMPER NOTE ADDED	DRP 16-3-96	2. ELECTROLYTIC CAPACITORS ARE µF/VOLTS	DRAWING TITLE	
1	PRODUCTION	DLP 2/4/96		GROUP PCB PCB AG2531	
					DRAWING No. C2531
					ISSUE 1
					A2

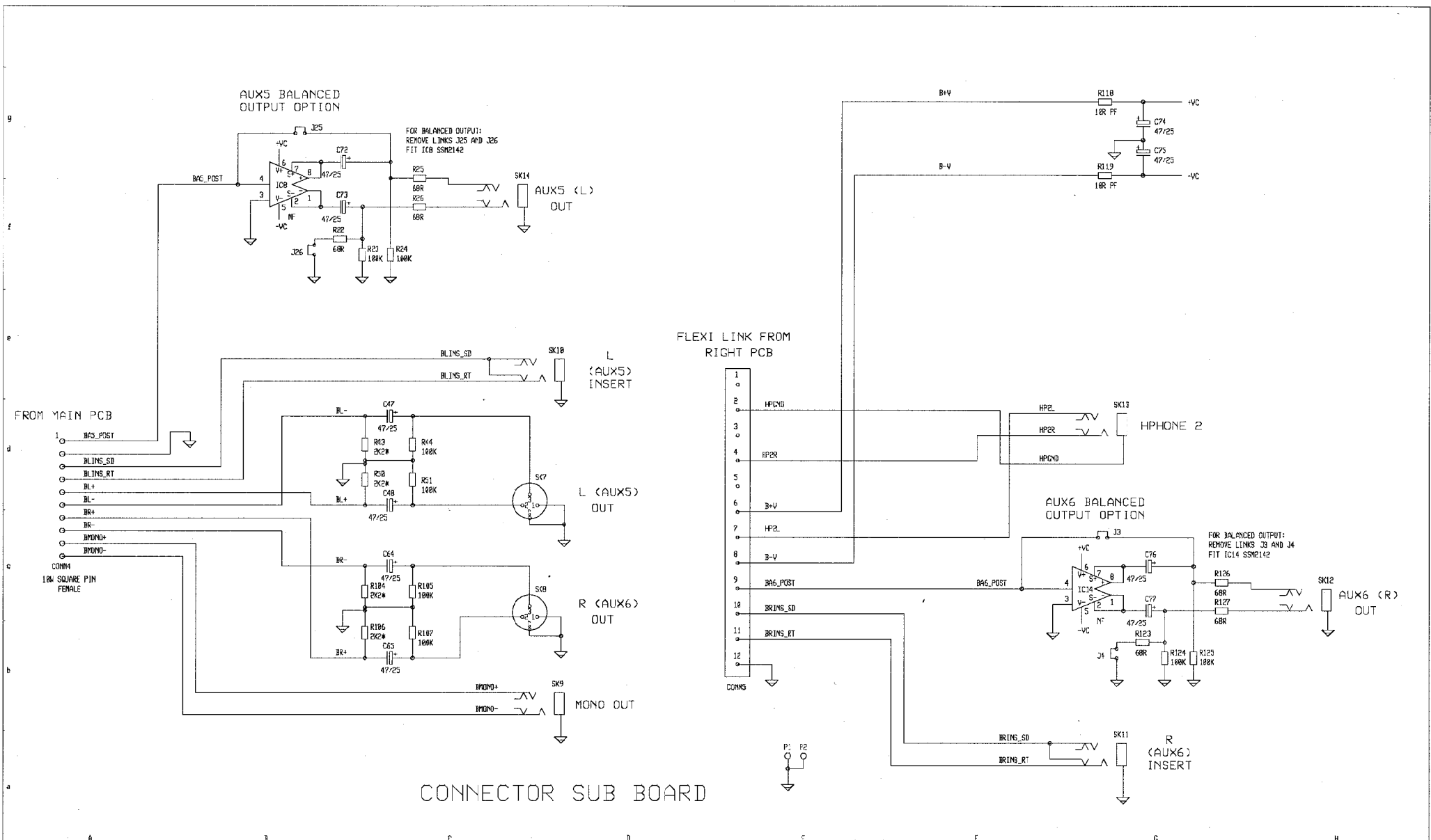




ISS.	REVISION	BY DATE	NOTES	UNIT TITLE	MANUFACTURED IN ENGLAND BY
A	ORIGIN	DLP 27/2/96	1. RESISTORS MARKED # ARE 1% ALL OTHERS ARE 5% 1/4W UNLESS OTHERWISE MARKED 2. ELECTROLYTIC CAPACITORS ARE $\mu$ F/VOLTS	L2D	ALLEN & HEATH
1	PRE PRODUCTION	DRP 1-4-96		LEFT PCB	SHEET 1 OF 3
				PCB TYPE AG2532	DRAWING No. C2532
				RG217	ISSUE 1
					A2

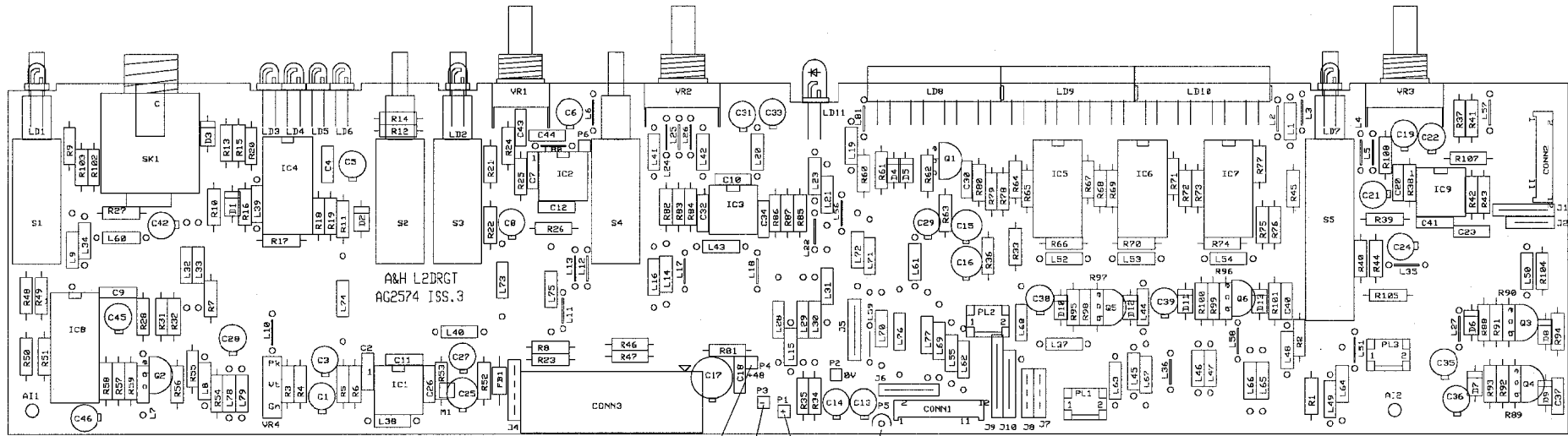


ISS.	REVISION	BY DATE	NOTES	UNIT TITLE	SHEET 2 OF 3	MANUFACTURED IN ENGLAND BY
A	ORIGIN PRE PRODUCTION	DLP 27/2/96 DRP 1-4-96	1. RESISTORS MARKED * ARE 1% ALL OTHERS ARE 5% 1/4W UNLESS OTHERWISE MARKED 2. ELECTROLYTIC CAPACITORS ARE µF/V.D.TS	L2D		ALLEN & HEATH
1				DRAWING TITLE LEFT PCB PCB TYPE AQ2532	RG217	DRAWING No. C2532 ISSUE 1



ISS.	REVISION	BY DATE	NOTES	UNIT TITLE	MANUFACTURED IN ENGLAND BY
A	ORIGIN	DLP 27/2/96	1. RESISTORS MARKED * ARE 1% ALL OTHERS ARE 5% 1/4W UNLESS OTHERWISE MARKED	L2D	ALLEN & HEATH
1	PRE PRODUCTION	DRP 1-4-96	2. ELECTROLYTIC CAPACITORS ARE µF-VOLTS	LEFT PCB	DRAWING No. 02532
				PCB TYPE AG2532	ISSUE 1
				RG217	A2

R AFL      HPHONE      R METER S 0 6 P      AUX6 TB AFL LEVEL      LR/ 2TK LEVEL      HP PAFL      R/PAFL METER      2 TRK TO LR LEVEL

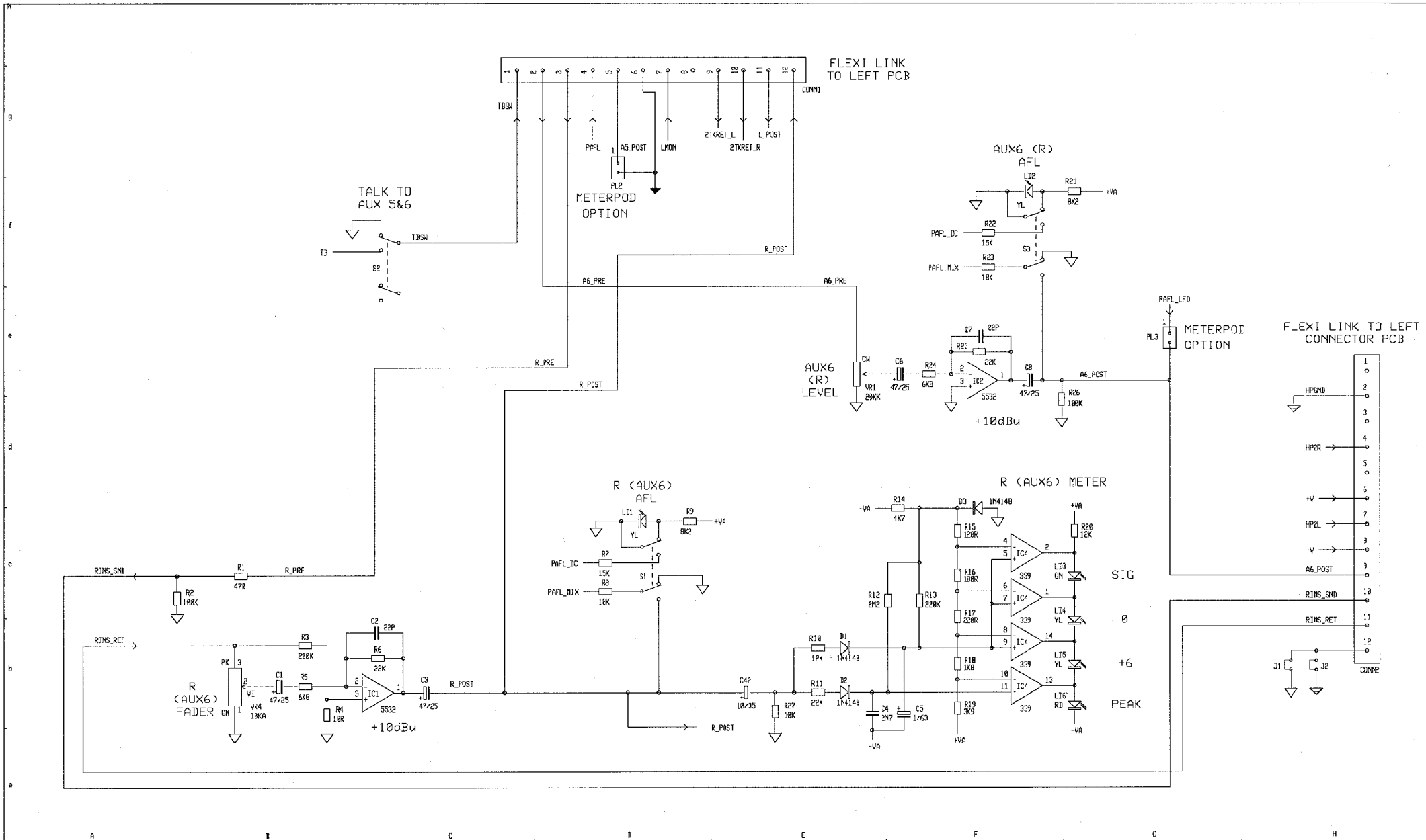


FLAT RIBBON TO LEFT CONNECTOR PCB CONNS

MAIN IDC

B1 Bk Rd G2

FLAT RIBBON TO LEFT PCB CONN2



ISS.	REVISION	BY	DATE
A	ORIGIN	DLP	7/3/96
1	PRODUCTION	DLP	11-4-96
2	EMC CHANGES	DLP	29-4-96
3	R49, R51 WERE 2K2	DRP	15-5-96

NOTES

1. RESISTORS MARKED \* ARE 1% ALL OTHERS ARE 5% 1/4% UNLESS OTHERWISE MARKED
2. ELECTROLYTIC CAPACITORS ARE µF-VOLTS

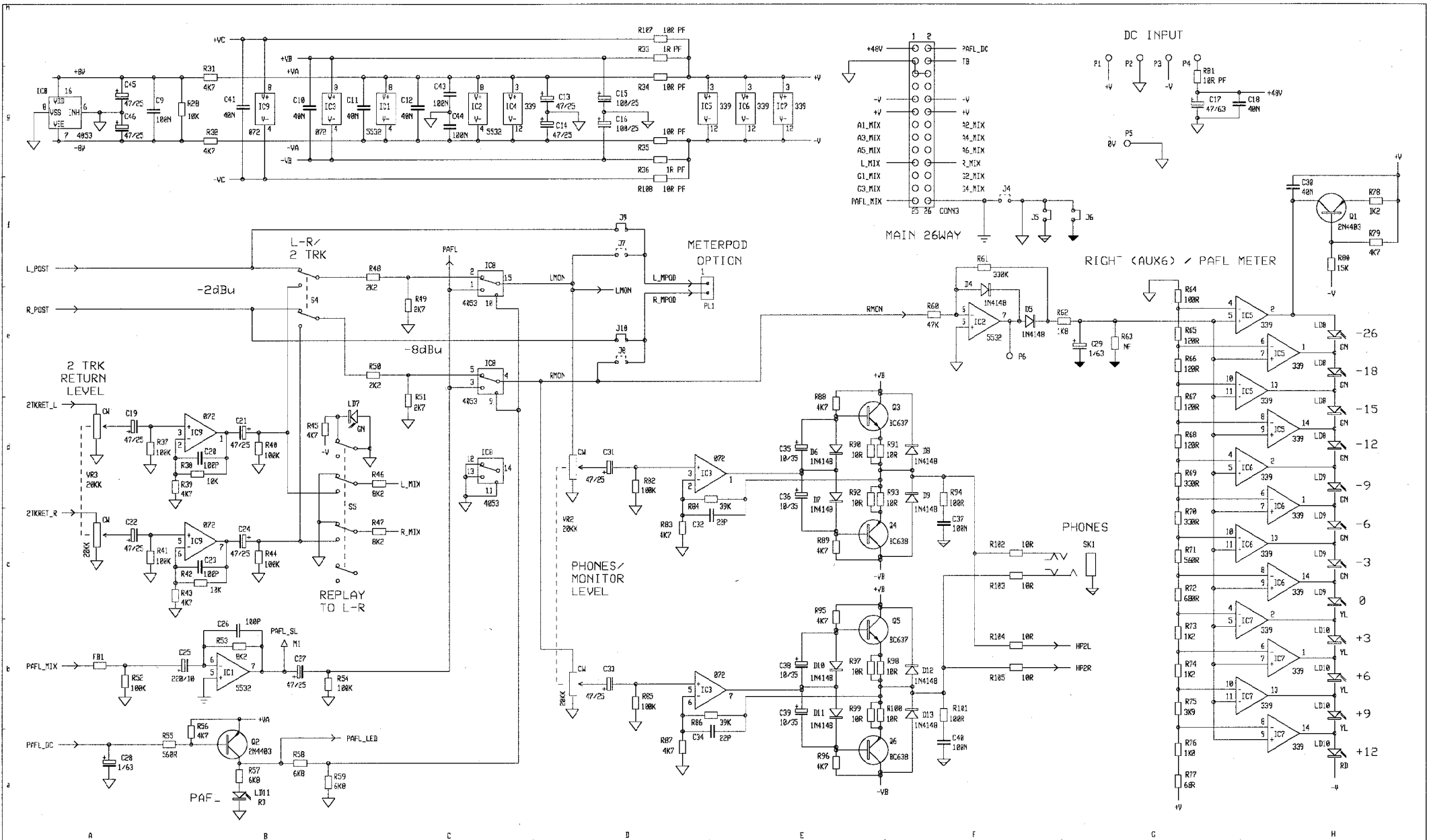
UNIT TITLE  
L2D SHT 1 OF 2

DRAWING TITLE  
RIGHT PCB  
PCB TYPE AG2574

RG217

MANUFACTURED IN ENGLAND BY  
ALLEN & HEATH

DRAWING No. C2574 ISSUE 3 A2



ISS.	REVISION	BY	DATE	NOTES
A	ORIGIN	DLP	7/3/96	
1	PRODUCTION	DLP	11-4-96	
2	EMC CHANGES	DLP	29-4-96	
3	R49, R51 WERE 2K2	DRP	15-5-96	

- RESISTORS MARKED \* ARE 1% ALL OTHERS ARE 5% 1/4W UNLESS OTHERWISE MARKED
- ELECTROLYTIC CAPACITORS ARE  $\mu$ F/VOLTS

UNIT TITLE	L2D	SHT 2 OF 2
DRAWING TITLE	RIGHT PCB	
	PCB TYPE A32574	RG217

MANUFACTURED IN ENGLAND BY	ALLEN & HEATH
DRAWING No.	C2574
ISSUE	3
	A2



# SECTION C

C

## POWER SUPPLY

### CAUTION !

TO AVOID DAMAGE TO INTERNAL COMPONENTS BY MISHANDLING AND/OR MISCONNECTION, ONLY TECHNICALLY COMPETENT PERSONNEL SHOULD ATTEMPT SERVICE WORK ON THIS UNIT.

ANY SERVICE WORK SHOULD BE UNDERTAKEN ONLY AFTER DISCONNECTING THE MAINS SUPPLY LEAD FROM THE POWER SUPPLY UNIT.

# TECHNICAL DESCRIPTION

The power supply for the *GL2000* range is internal to the console and is mounted on a steel sub-chassis.

## INSTALLATION

An important consideration when positioning the console is the need for natural convection of air flow over the whole unit. Good ventilation, in the floor and back of the console, will ensure a path for continuous air flow. Pay particular attention to the ventilation around the power supply unit which is mounted off the rear connector panel. The *GL2000* can be operated as a free standing unit without requiring any special cooling arrangement, but should not be covered in any way. Always stand the unit on a firm flat surface well away from any soft furnishings.

## THE POWER SUPPLY AND CONSOLE EARTHING

The *GL2000* power supply is a linear power supply which, like other linear supplies, produces DC voltages by rectifying, smoothing and regulating AC voltages from the secondary windings of a mains transformer. The console connects directly to the local AC mains supply and provides the regulated DC operating voltages required by the *GL2000* console. **The console chassis is always connected to mains earth.** Audio 0V connects to the console chassis internally. Should problems be encountered with ground loops operate the audio ground lift switches on other equipment connected to the console or disconnect the cable screens at one end. Refer to the section on 'EARTHING' in the User Guide. This is to avoid earth loops in situations where multiple earth paths are present.

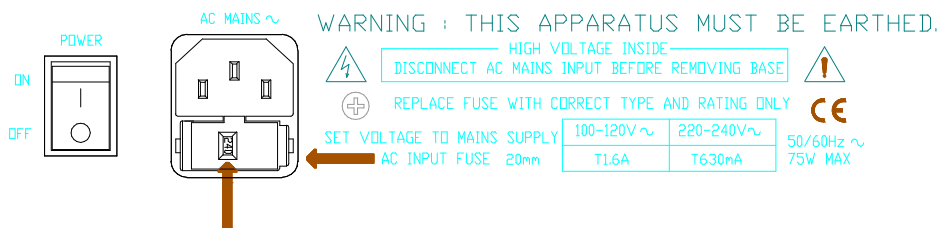
**THE CHASSIS METALWORK IS ALWAYS CONNECTED TO MAINS EARTH VIA THE EARTH WIRE IN THE MAINS PLUG. DO NOT REMOVE THE EARTH WIRE CONNECTION IN THE MAINS PLUG !**

## CONNECTING AC MAINS TO THE CONSOLE

Mains input to the *GL2000* is via a standard 3 pin IEC mains input connector. A mains cable with moulded mains plug suitable for the local supply is supplied.



**Check that the voltage indicated in the fuseholder window is the same as the mains supply in your area.**



AC mains supply = 100 to 110 V.AC

**100**

T 1.6A 20mm fuse

AC mains supply = 110 to 125 V.AC

**120**

T 1.6A 20mm fuse

AC mains supply = 210 to 230 V.AC

**230**

T 630mA 20mm fuse

AC mains supply = 235 to 260 V.AC

**240**

T 630mA 20mm fuse



**To avoid the risk of fire replace the fuse only with the correct type and value as specified on the unit.**



**Always switch the unit off before connecting or disconnecting the console power cable.**

## SPECIFICATION

<b>AC MAINS INPUT:</b>	100V, 110V, 120V, 220V, 230V or 240V @ 50Hz to 60Hz single phase
<b>POWER CONSUMPTION:</b>	60VA
<b>DC OUTPUT:</b>	+48V @ 100mA, +/- 16V @ 0.8A per rail. (GL2000-424)
<b>NOISE &amp; RIPPLE:</b>	< 2mV max (peak to peak)

## SERVICE ACCESS

Any fault condition, with the exception of simple mains fuse failure due to underrating or an unusual mains input condition, will require removal of the base cover to enable correction of the fault. This is achieved using a cross-head screwdriver to remove all of the base screws which are positioned along the edges of the base. Do not forget to remove the two screws in the centre rear of the base.

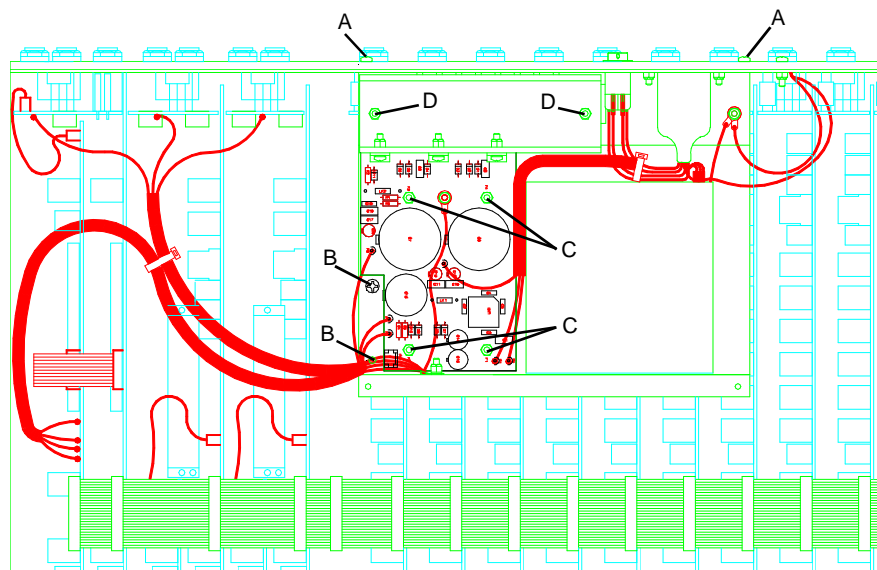
Carefully lift the cover and place it to one side. The power supply sub chassis can then be removed by unscrewing the 2 mounting screws (A) in the console rear panel and the 2 fixing screws (B) in the sub chassis base next to the PSU circuit board. Take care not stretch the wires connected to the console.

## Servicing Components

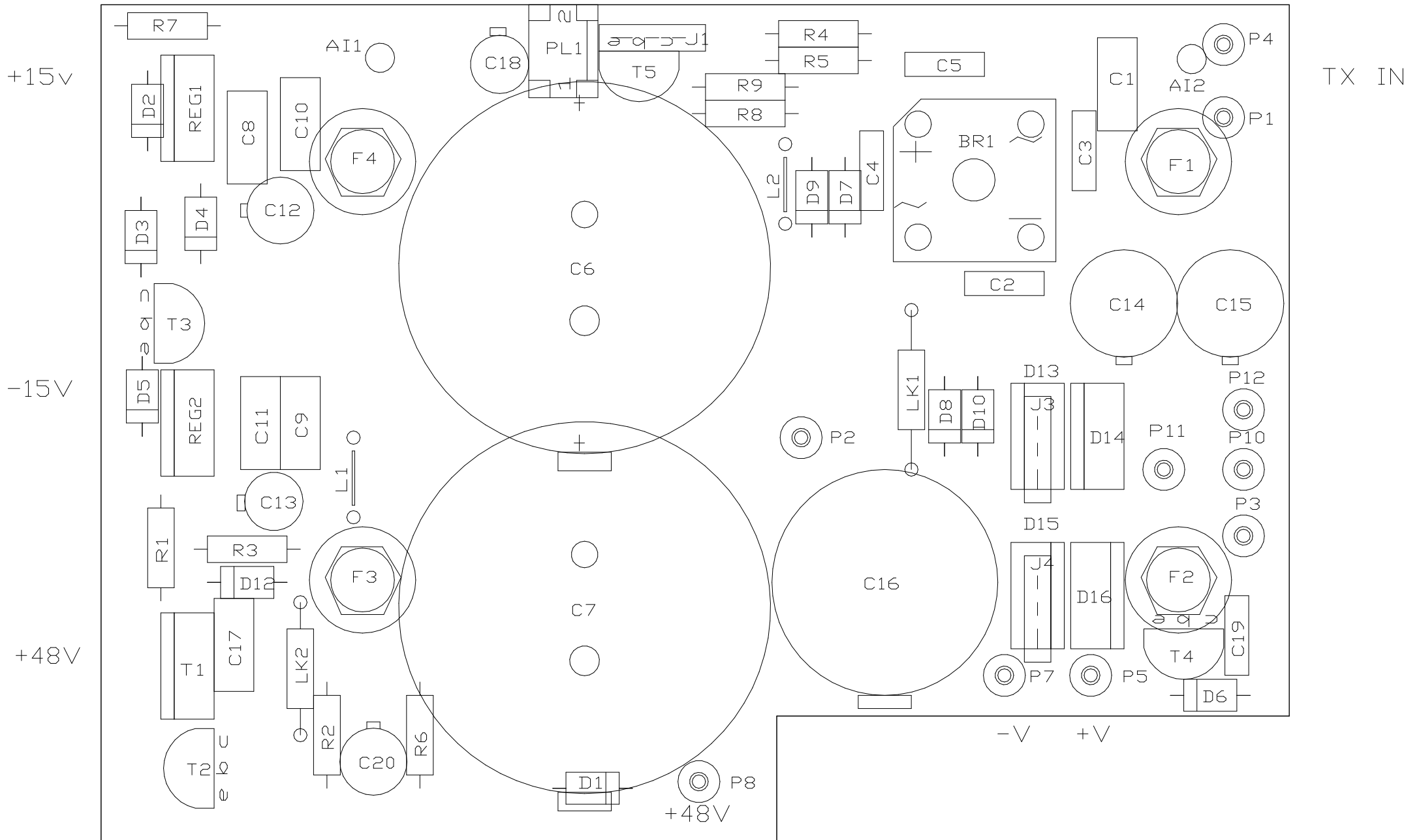
All of the regulators are in TO220 packages. To replace them, it will be necessary to remove the power supply circuit board assembly with the heatsink attached. Refer to the L2D PSU assembly diagram 002-150.

- 1.) Remove the 4 PCB mounting nuts (C) and 2 heatsink fixings (D).
- 2.) Carefully lift the heatsink and PCB assembly clear of the PSU sub chassis and unscrew the screw and nut of the regulator IC that requires replacing. Take care to retain the small insulating bush beneath the head of the screw and the insulating SIL pad under the regulator.
- 3.) Rotate the assembly to gain access to the solder side of the PCB and desolder the three terminals attached to the regulator. The regulator can now be removed.
- 4.) Fit the replacement regulator by first fixing it to the heatsink using the screw and nut and then soldering the three terminals to the circuit board. Make sure the insulating SIL pad and bush are fitted. The metal tab at the top of the package is electrically connected to the centre lead and correct insulation is essential. If the insulating SIL pad between the regulator and the heatsink looks damaged then it should be replaced before installing the new regulator. Note that the regulators rely on good thermal contact with the heatsink to dissipate heat, and this is provided by the SIL pad.
- 5.) Reassemble the circuit board and heatsink assembly into the power supply sub chassis. Check your work and remove any debris from the sub chassis before refitting it to the console.

**CAREFULLY CHECK ALL WIRING CONNECTIONS AND ENSURE THAT THERE ARE NO LOOSE PARTS LYING AROUND INSIDE THE CONSOLE.**

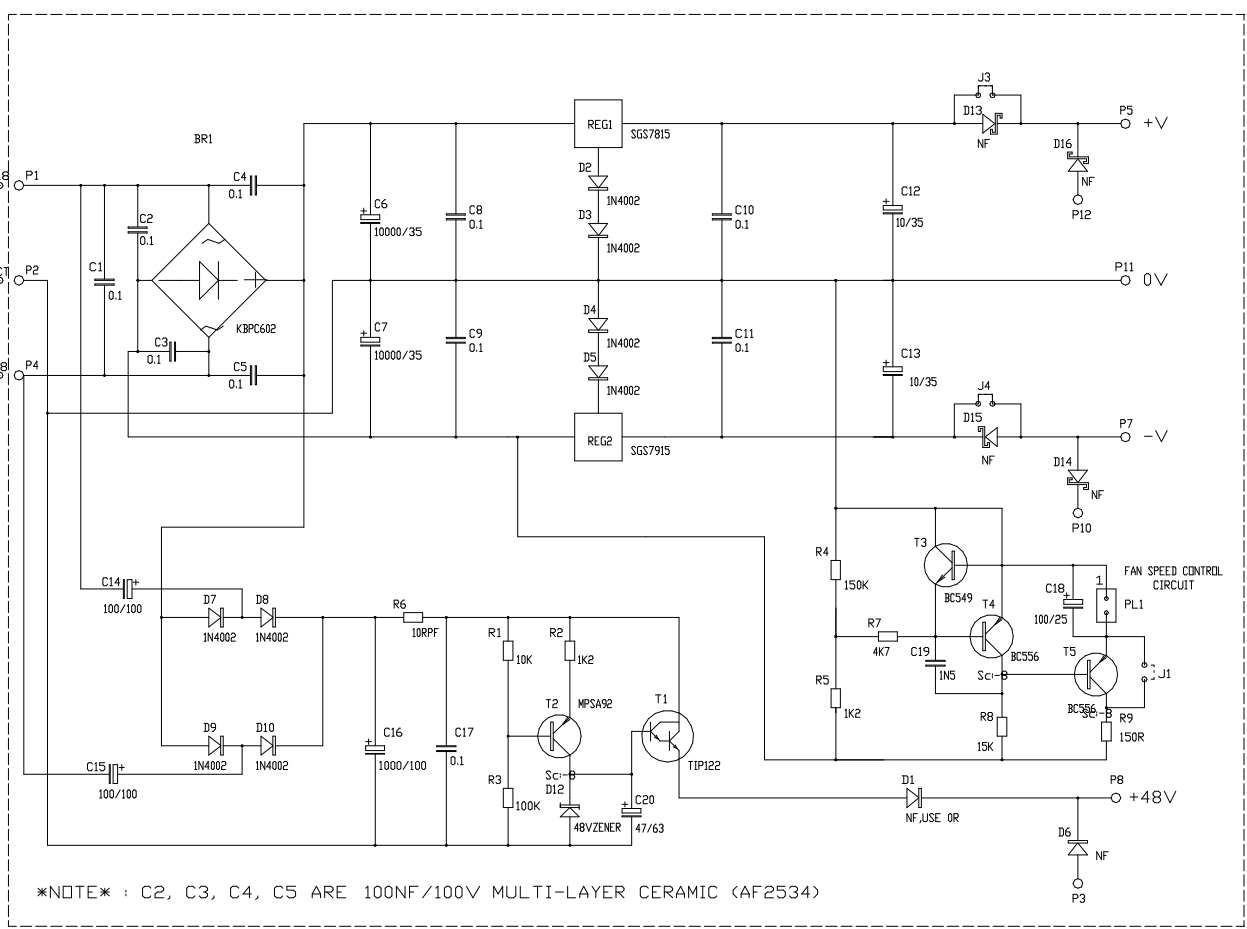
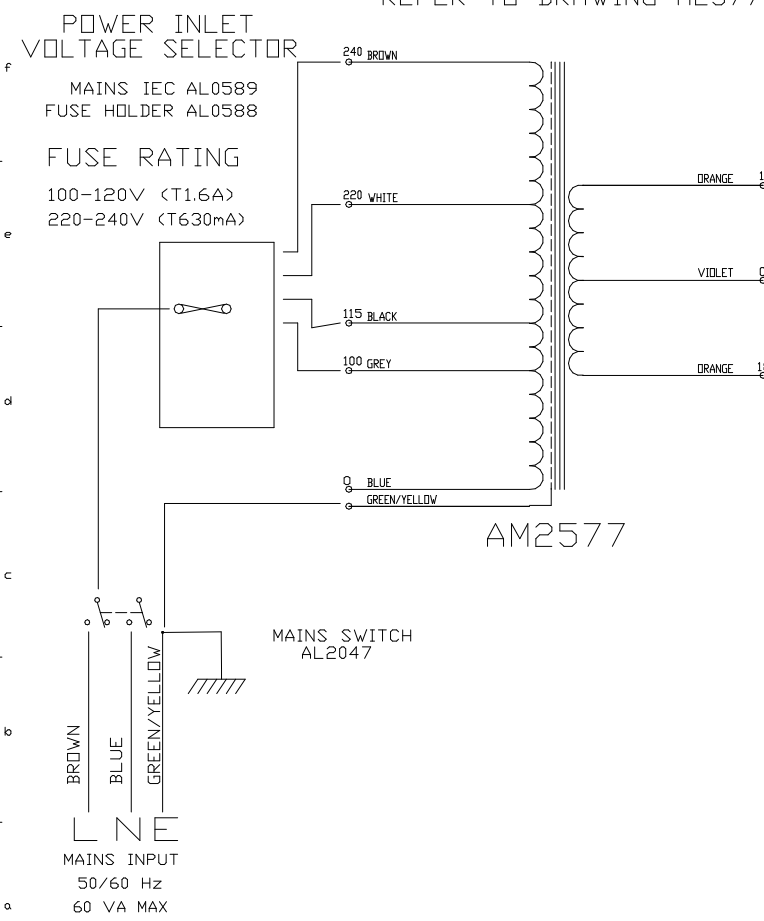


console inverted with the base removed



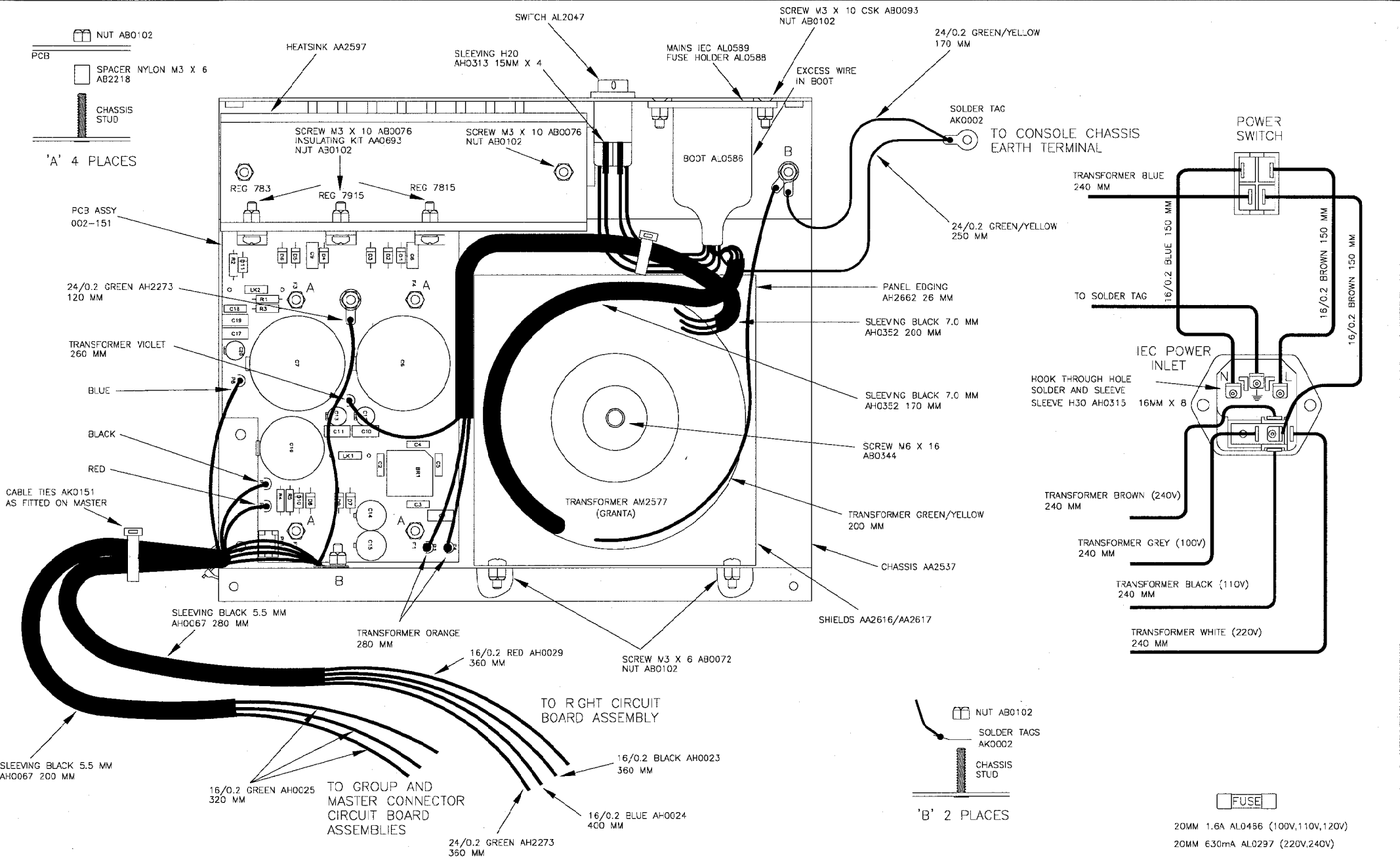
**DANGER - HIGH VOLTAGE !**  
 DISCONNECT POWER BEFORE REMOVING POWER SUPPLY UNIT  
 REFER SERVICE WORK TO QUALIFIED SERVICE PERSONNEL ONLY

MAINS TRANSFORMER  
 REFER TO DRAWING M2577



\*NOTE\* : C2, C3, C4, C5 ARE 100NF/100V MULTI-LAYER CERAMIC (AF2534)

ISS.	REVISION	BY DATE	NOTES	UNIT TITLE	MANUFACTURED IN ENGLAND BY
A	ORIGIN	AAT 29-02-96	1. RESISTORS MARKED * ARE 1% ALL OTHERS ARE SZ 1/4W UNLESS OTHERWISE MARKED  2. ELECTROLYTIC CAPACITORS ARE 1% VOLTS	L2D	ALLEN & HEATH
B	WIRING CHANGES	AAT 01-04-96		PSU CIRCUIT DIAGRAM PCB TYPE AG2552	
C	V. SEL AND SW ADDED	AAT 30-04-96			
D	C21 ADDED	CD 5-2-96			
E	BR1 VALUE CHANGE	IDWD 6-11-97			
F	CCT REDESIGN	NB 18-11-97			
G	CCT REDESIGN	ARJ 2-2-98			

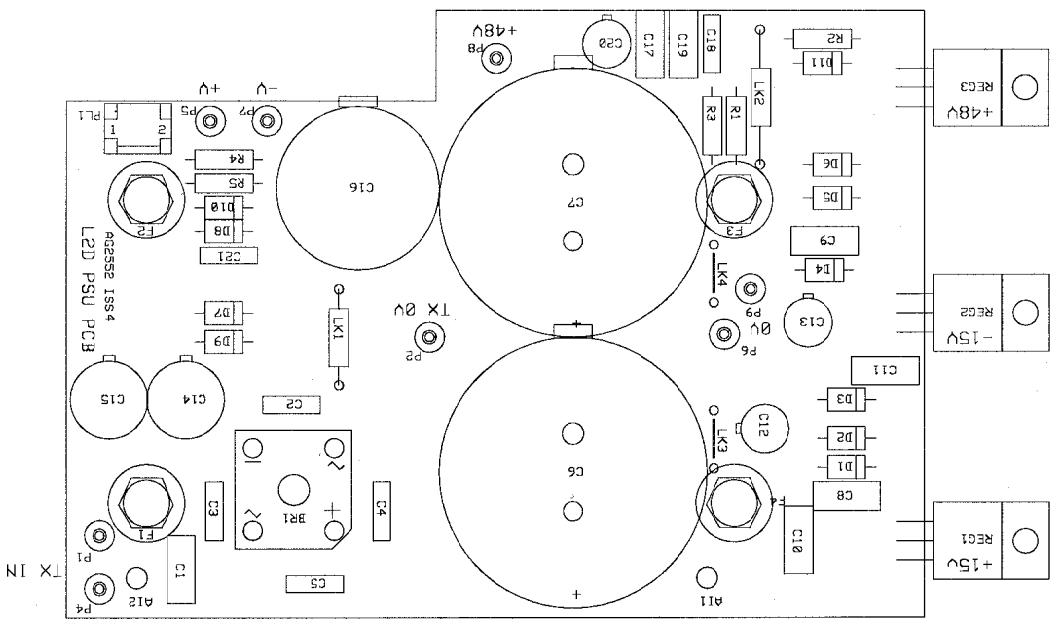


ISSUE	REVISION	BY	DATE	STANDARD NOTES
1	ORIGIN	NM	22-04-96	ALL DIMENSIONS IN mm DO NOT SCALE DRAWING REMOVE ALL BURRS & SHARP EDGES THIRD ANGLE PROJECTION
2	UPDATE	NM	20-05-96	

TOLERANCES	MATERIAL	FINISH
SCALE APPROX:		

DRAWING TITLE	STOCK CODE
L2D PSU ASSY	002-150

ALLEN & HEATH		KERNICK INDUSTRIAL ESTATE, PENRYN, CORNWALL TR13 9LU.	
TEL. 0326 372070		FAX. 0326 377097	
DRAWING No	M002-150	Sheet	ISSUE 2 A1



**DANGER - HIGH VOLTAGE !**  
 DISCONNECT POWER BEFORE REMOVING POWER SUPPLY UNIT  
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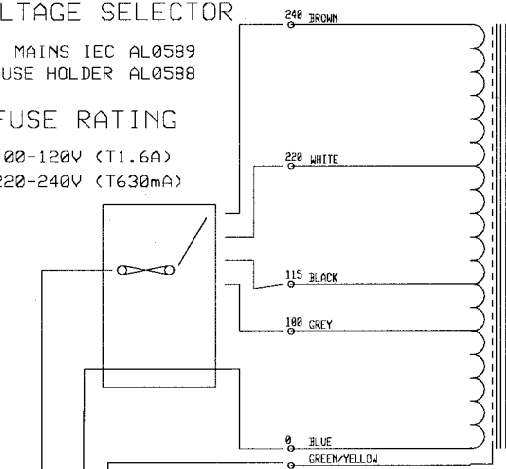
**MAINS TRANSFORMER**  
 REFER TO DRAWING M2577

**POWER INLET  
 VOLTAGE SELECTOR**

MAINS IEC AL0589  
 FUSE HOLDER AL0588

**FUSE RATING**

100-120V (T1.6A)  
 220-240V (T630mA)

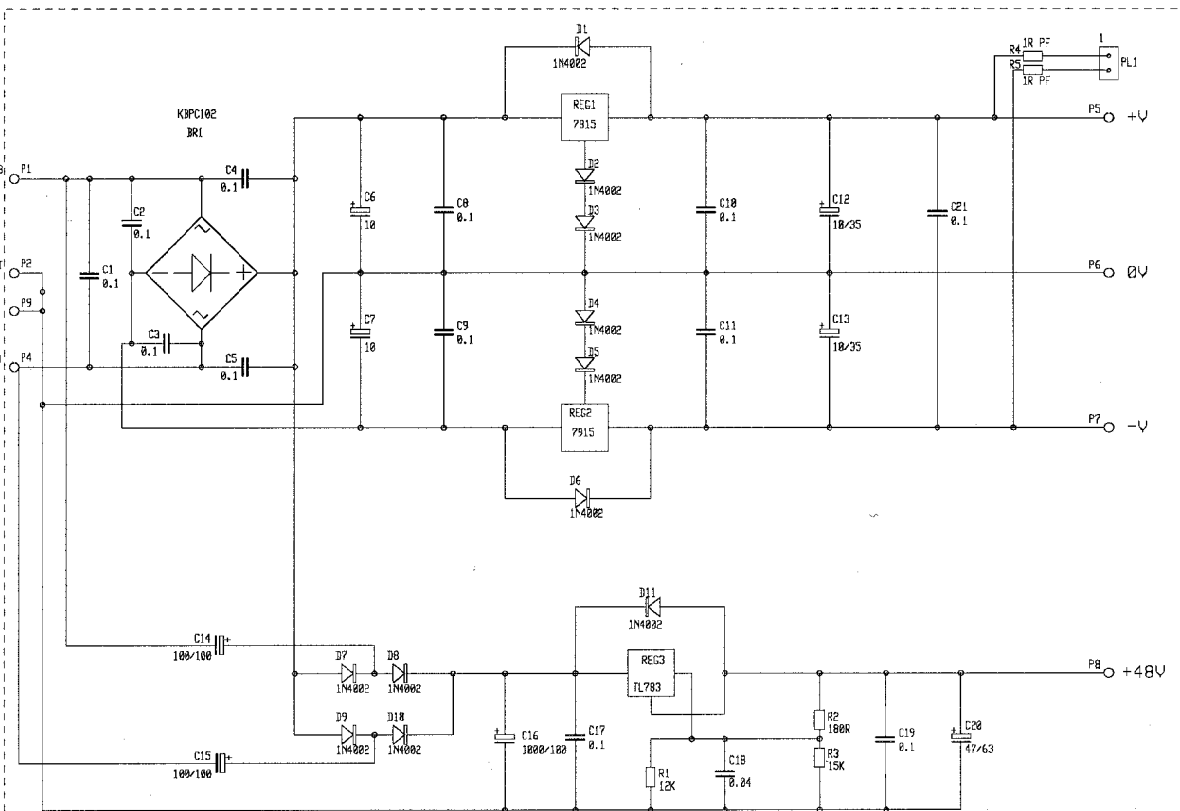


AM2577

MAINS SWITCH  
 AL2047

BROWN  
 BLUE  
 GREEN-YELLOW  
**LINE**

MAINS INPUT  
 50/60 Hz  
 60 VA MAX



\*NOTE\* : C2, C3, C4, C5 ARE 100NF/100V MULTI-LAYER CERAMIC (AF2534)

ISS.	REVISION	BY DATE	NOTES	UNIT TITLE	MANUFACTURED IN ENGLAND BY
A	ORIGIN	AAT 29-02-96	1. RESISTORS MARKED * ARE 1% ALL OTHERS ARE 5% 1/4W UNLESS OTHERWISE MARKED 2. ELECTROLYTIC CAPACITORS ARE µF/VOLTS	L2D	ALLEN & HEATH
1	WIRING CHANGES	AAT 01-04-96		DRAWING TITLE	DRAWING No. C2552
2	V SEL AND SW ADDED	AAT 30-04-96		PSU CIRCUIT DIAGRAM	
3	C21 ADDED	CD 5-2-96		PCB TYPE AG2552	A2