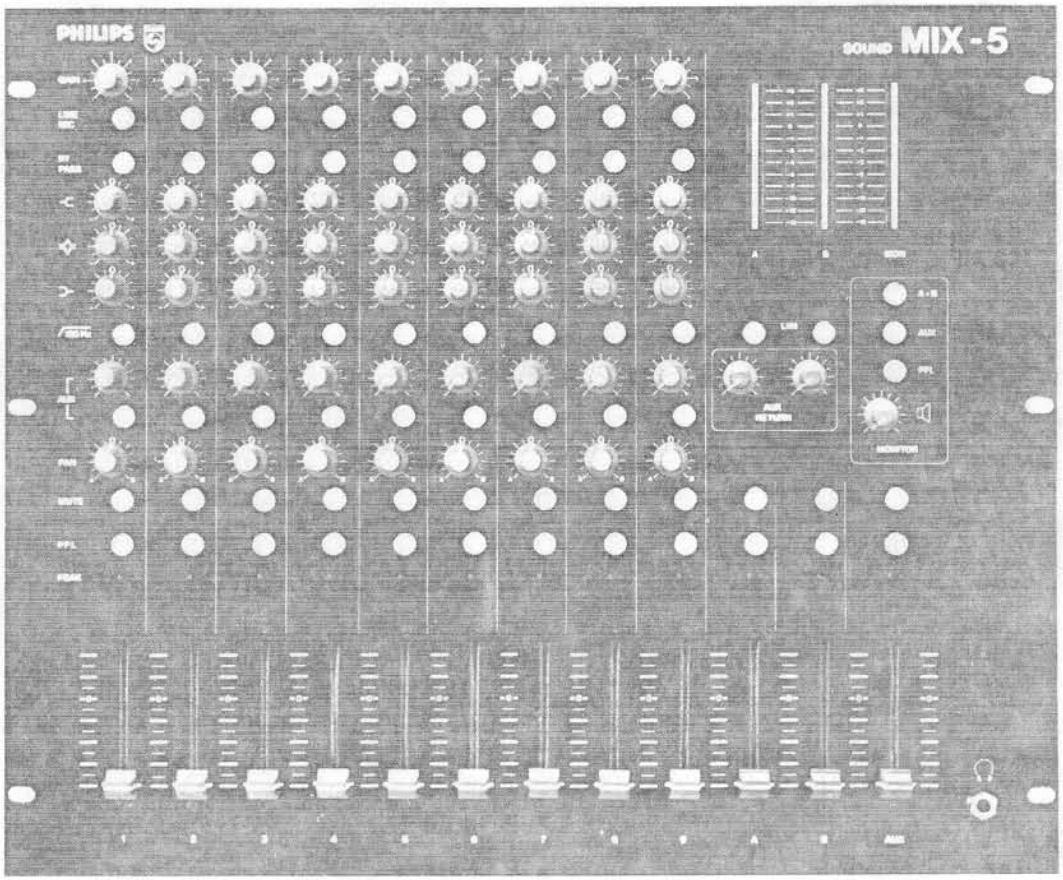
SERVICE MANUAL

LBB 1147/00/01/02

Sound Mix-5 Audio Mixing Desk



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1. GENERAL DESCRIPTION

The Sound Mix 5 audio mixing desk has been developed by Philips to fulfil the requirements of the many relatively small projects where professional quality, reliability and versatility is needed from a desk which must also be compact and/or portable. These desks must be capable of handling microphone inputs from stage performances as well as relaying music.
To cover these requirements, the SM5 mixing desk has been produced in three versions, namely: one for 19" rack mounting, LBB 1147/00, a second for table top use, LBB 1147/01, and the third as a portable unit in an attractive flight case, LBB 1147/02.
The electrical performances of the three versions are identical with the exception of the portable version which can have the possibility of being operated from a built-in rechargeable battery supply, making it independent of the mains supply.
The features of this 9-in/3-out mixing desk also include, per input channel, colour coded controls for Gain (blue), Bass, Presence/Absence and Treble (green), Auxiliary output (red) and Pan-pot (yellow). These controls are continuously variable, with mechanical click-stop centering on the equalizers and pan-pots. Each input channel is also provided with push-buttons for microphone or line input, rumble filter on/off, equalizer bypass, and Auxiliary output on/off. A push-button for muting and pre-fader listening, a dual LED peak level indicator, and a long fader control are featured on all input and output channels. See fig. 6.2. Signal levels on the output channels A, B and Auxiliary Send are viewed via professional LED bar indicators. For recording and public address applications, a switchable limiter is incorporated in both the A and B group output channels.
Auxiliary Send and Auxiliary Return controls and connections are included for echo/reverberation/effects or for foldback purposes; the Auxiliary Return A and B input channels facilitate the connection of a second SM5 desk. For system alignment, there is an option of a built-in test tone or pink noise generator.
These features make this range of mixing desks suitable for use in small installations in sports halls, canteens, leisure and community centres, small theatres and halls etc.
In larger halls, this compact mixing desk can be employed to couple several sources into one of the inputs of a much larger multi-channel mixing desk.
The SM 5 offers the following features.

- 9 universal input channels with built-in equalizers and rumble filters.
- Phantom supplies for condenser microphones.
- Line inputs compatible with SQ6 microphones.
- 2 balanced group output channels
- Auxiliary send output channel
- 2 auxiliary return channels
- Monitoring possible on all channels with pre-fader listening facility
- Connectors and lay-out according to professional standards
- Three standard versions available:
  . 19" rack mounting panel, LBB 1147/00
  . table top version in a wooden desk unit, LBB 1147/01
  . and a portable version in a flight case, LBB 1147/02
- Reliable, versatile, sturdy, portable, 9/3 professional mixer

2 TECHNICAL DATA

2.1 GENERAL

Mains supply	: 220/240 V ± 10 %; 50 Hz Fuse 315 mA slow
Power consumption	: 30 W approx. at 220 V
Dimensions	: (H x W x D)
LBB 1147/00	: approx. 400 x 480 x 125 mm (rack mounting)
LBB 1147/01	: approx. 420 x 500 x 200 mm (table top unit)
LBB 1147/02	: approx. 440 x 620 x 220 mm (flight case unit)
Weight	
LBB 1147/00	: approx. 8 kg
LBB 1147/01	: approx. 12 kg
LBB 1147/02	: approx. 15 kg

All measurements caaried out at 220V 50Hz; 0db = 0.775V.

2.2 INPUT CHANNELS	: 9x universal balanced dual inputs for microphone and line sources.
Microphone (XLR)	: Symmetrical, floating
Input level	: -64 dBm to -22 dBm (± 2 dB)
Input impedance	: 2 kOhm
Line (XLR)	: Symmetrical
Input level	: -11 dBm to +6 dBm (± 2 dB)
Input impedance	: 10 kOhm
Line (DIN)	: Switchable to symmetrical input for SQ6 microphones or to asymmetrical input for domestic sources.
Symmetrical	
Input level	: -3 dBm to +18 dBm (± 2 dB)
Input impedance	: 40 kOhm
Asymmetrical	
Input level	: -6 dBm to +13 dBm (±2 dB)
Input impedance	: 20 kOhm
Tone control	
Bass	: +14 dB to -14 dB at 60 Hz (± 1 dB)
Presence/absence	: +10 dB to -10 dB at 2,5 kHz (± 1 dB)
Treble	: +14 dB to -14 dB at 10 kHz (± 1 dB)
Rumble filter	: 12 dB/octave; crossover point 120 Hz

Damping	:	(Measured at 5 kHz)
Mute switch (inputs)	:	80 dB
Cross-talk	:	70 dB
Fader control	:	70 dB (with respect to the nominal -10 dB position of fader control)
Damping (attenuation) Pan-pot control		
Mid-position	:	-3 dB for A and B level
Fully left (A)	:	70 dB for B level
Fully right (B)	:	70 dB for A level
Peak indicator (pre-fader level)	:	+13 dBm (± 1 dB) threshold level
Overload area	:	26 dB
Noise level	:	(30 to 20.000 Hz, flat, unweighted)
Microphone input	:	-124 dBm (200 Ohm source)
Line input	:	-90 dBm (600 Ohm source)
Phantom supply	:	12 V d.c. from internal supply. If external supply (48 V d.c.) is connected via 3,5 mm connector, the internal phantom supply will automatically be disconnected.

2.3 OUTPUT CHANNELS AND MONITOR

A, B or Aux.		
Output level	:	0 dBm (± 1 dBm) (nominal) +12 dBm (max)
Output impedance	:	50 Ohm
Nominal load	:	600 Ohm
Distortion (THD)	:	0,2 % (100 Hz, 1 kHz, 10 kHz) (from line input)
Freq. response	:	30 to 20000 Hz (± 1,5 dB)
Monitor		
Output level	:	3 Veff
Output impedance	:	50 Ohm
Nominal load	:	600 Ohm
Distortion	:	0,3 % (100 kHz, 1 kHz, 10 kHz) (from line input)
Limiter (on A and B)	:	Signals 0 dBm will be limited; maximum overloading 18 dB; characteristic. 5 : 1
Damping		
Mute switch	:	90 dB

Aux return input	: Asymmetrical
Nom. input level	: 0 dBm (± 2 dB) for 0 dBm output at channel A or B
Input impedance	: 10 kOhm
Output meters (A, B, Mon.)	: -18 dBm to +3 dBm 9x green LED for -18 to 0 dBm 3x red for +1 to +3 dBm

3. SERVICE DESCRIPTION

3.1 GENERAL (Fig. 6.1 - 6.2 - 6.5 - 6.13 - 6.14)

The mixing desk LBB 1147/00 consists of a chassis with power supply, front plate, nine input channel p.c.b.'s, two p.c.b.'s for output channels A and B (including A and B AUX RETURN) and one p.c.b. for AUX SEND output and monitor circuit.

3.2 POWER SUPPLY UNIT (Fig. 6.3 - 6.4)

The primary side of the transformer is connected via a double pole mains switch to the mains inlet. In this mains inlet socket, a fuse with a value of 315 mA (slow) is located.
The transformer is suitable for 220 to 240 V ± 10 %.
For other mains voltages, a special version of the mixing desk has to be ordered.
The secondary side of the transformer provides the 2 x 15 V for the stabilisation circuits µA 7815 and µA 7915, giving +15 V resp. -15 V.
Provisions are made on the p.c.b. to connect a battery pack power supply. The batteries are charged when the mixer is connected to the mains, and supply the necessary power when there is no mains voltage available.

NOTE: 1. Battery pack available as option.
2. Fuses A402 and Z403 and resistors R401 and R402 are depending on battery type and will be supplied with the battery pack.
3. Before serial no. 130 it might be possible that D404 and D405 are reversed mounted. They have to be turned in case the optional battery is used.

The build-in phantom supply of 12 V to all microphone input sockets, is automatically interrupted when an external phantom supply is connected via the 3,5 mm connector on the rear side.
The power supply leads are connected via a ribbon cable to all input and output p.c.b.'s.

The ribbon cable also connects all L.F. signals (A, B, AUX or PFL) to the output channel p.c.b.'s A, B and AUX SEND and to the monitor circuit.

3.3 INPUT CHANNEL P.C.B. (Fig. 6.6 - 6.7)

The microphone signal (symmetrical, floating) from input socket BU 103 is fed via a transformer and IC101 to the selector switch SK101a (LINE/MIC). The nominal level can be controlled by means of potmeter R161.

The signal on the XLR line input socket BU102 or the DIN input socket BU101 can be switched with SK102 to symmetrical or asymmetrical according to the source and the external wiring.

The level of the L.F. signal after the op.amps IC105 and IC106 to selection switch SK101a can be controlled with R168 to the same nominal level as the microphone.
(Both switch SK102 and R168 are located on the rear signal near the input sockets).

The selected L.F. signal is fed to the tone control section.
It consists of a 120 Hz bass cut filter SK104 and an equalizer with bass, mid-range and treble control potentiometers R164, R163 and R162. The equalizer can be by-passed with switch SK103.

From this point the signal is fed to a peak-indicator circuit and to the channel fader R170. It is also possible to connect this signal to the pre-fader-line by means of switch SK107 (PFL).

The slider of the fader (-10 dB position) is connected to op.amp IC104. The output signal can be distributed to the A or B mixing line by means of the panoramic potentiometer R166.
In the centre position of this potentiometer, both output signals A and B have a nominal -3 dBm level. If this potentiometer is turned fully clockwise (or anti-clockwise), one of the signals has a 0 dBm level and the other is attenuated to -70 dBm.

The level of the signal on the AUX-line can be adjusted with potentiometer R165 and switched on with switch SK105.
This signal is normally connected to the post-fader level (X-Y) but a wire link on the p.c.b. allows a modification to pre-fader level (X-Z).

3.4 OUTPUT CHANNEL P.C.B. (Fig. 6.8 - 6.9 - 6.10)

The output channel p.c.b. for channel A is basically identical with the p.c.b. for channel B in operation, lay-out and description.
The only difference is created by the nomination to A-channel output or B-channel output function, depending upon the location on the front panel. Near the connector for the ribbon cable, programming connections (by means of soldered links) are made to connect the input op-amp on this p.c.b. to the A or the B mixing line and the output to the A or the B monitor line (See further on).

The input signal from the selected mixing line is fed to IC201. This signal can be mixed with the "AUX RETURN" signal. The output signal from IC201 is fed to the output fader R261, the peakindicator circuit and to the PFL switch.
From the fader the signal is fed to IC202. In the feedback loop of this amplifier, a limiter circuit can be switched on with SK201.
From this point, connections are made to the LED-bar VU meter, to the A/B inputs of the monitor circuit via the A/B monitor bus and to the mute switch SK202.
From the mute switch, the signal is fed to transformer T201 to obtain a floating and symmetrical output signal.

The signal to the LED bar VU meter is fed via IC204 and a diode-resistor network to obtain a corresponding logarithmic output, capable of driving the LED's via IC205.

3.5 AUX SEND AND MONITOR P.C.B. (Fig. 2.11 - 2.12)

The signal on the AUX mixing bus is fed to IC301. After amplification, the signal is fed to the PFL-switch SK303, the peak indication circuit and AUX fader R361.

From the AUX fader, the signal is routed to the AUX SEND output socket BU301 via MUTE switch SK302, output transformer T301 and also to the monitor select switch assembly SK301.

The signals on the A monitor bus and B monitor bus are fed directly to the monitor switch SK301; the signal on the PFL line however, is amplified first in IC305 and then fed to SK301.

One of the three signals (A+B, AUX, PFL) is selected by means of the monitor switch assembly SK301 a, b or c and fed via the monitor level potmeter R362 to the IC's 306 and 307 for monitoring via the DIN output socket BU302 (e.g. for M.F.B.-loudspeaker boxes) or to the headphone socket BU304 on the front panel.
The level of this headphone output can be separately controlled by means of R363, mounted on the rear panel.

The amplitude of the selected signal can be monitored via an LED-bar VU-meter, identical to the one described in the output p.c.b.

3.6 DISASSEMBLING

If one of the p.c.b.'s has to be replaced, the following dismantling procedure is advised.

a) Remove the mains cord and all other input/output cables.

b) Remove the knobs of the potentiometers on the defective channel.

c) Remove the securing nuts of these potentiometers.

d) Turn the mixing desk upside down.

e) Remove the ribbon cable.

f) Remove the locking bar.

g) Slacken the 8 screws which fix the chassis to the front plate.

h) Turn the locking key in all 23 XLR-sockets on the back, so that the plastic part of this connector on the p.c.b. is disconnected from the metal part on the chassis.

i) The whole chassis (with the power supply unit) can now be shifted by approx. 1 cm, relative to the front panel.
Metal parts of XLR plugs of defective unit.

j) The defective p.c.b. can now be lifted out and replaced.

NOTE: Take care to correctly position the LEDs when putting the p.c.b. back into the right position.

When the p.c.b. is an output-channel p.c.b., ensure that the correct A or B programming for the boards application has been carried out.

The LED bars are glued onto the front panel with cyano acrilate glue.
If replacement is necessary, the part can be removed by breaking it loose by means of a pair of pliers.
The new part can be glued on again with cyano acrilate glue.

k) Assembly is done in the reverse way.

4 ADJUSTMENTS

Signal levels in the circuit diagram in square are given as dBm values, corresponding with 0 dBm output signal (= 0,775 Volt).

4.1 Input p.c.b.

Symmetry adjustment
The symmetry of the output signal of IC106 can be adjusted with potentiometer R169.
Apply a signal of 0 dBm between both the input points 2 and 3 and point 1 of the XLR line socket.
Adjust potmeter R169 to obtain a minimum output voltage on point 6 of IC106.

Peak indication
The threshold level for the red LED can be adjusted with potentiometer R167.
At a signal level of +12 dBm at the top of the fader, the red LED must be just lit.

4.2 Output p.c.b.

Peak indication
The threshold level for the red LED can be adjusted with potentiometer R264.
At a signal level of +16 dBm at the top of the fader, the red LED must be just lit.

Limiter circuit
The limiter can be activated by depress SK201. The output signal of IC202 will be full-wave rectified and drive LED of the Photomod D216. Limitation of the audio signal depends of the adjustement of R263.

VU meter
At a nominal output level of 0 dBm, a signal of +6 dBm is present on the input of the VU meter circuit.
The upper green LED, corresponding to a 0 dBm reading, should be just lit.
This can be adjusted with R265.

4.3 Monitor p.c.b.

Peak indication
The threshold level for the red LED can be adjusted with potentiometer R364.
At a signal level of 16 dBm at the top of the fader, the red LED must be just lit.

VU meter

At a signal level of -12 dBm at the input of the VU meter circuit (top of fader-potentiometer) the green 0 dBm LED must be lit.
This can be adjusted with R365.

NOTE: The A channel and B channel output p.c.b. are with the exception of the A or B preset identical. A is left B is right.

On the p.c.b., near the connector for the ribbon cable, programming is done by means of two soldering connections.

Service Code	Description		Position Number
5322 267 30507	Socket, female	Headph. socket 6.3 mm	BU304
4822 264 30011	Connector	Cable conn. 6.3 mm	BU305
5322 265 24043	Socket, male	Mains socket	BU401
4822 267 30232	Socket	Socket 3.5 mm female	BU402
4822 264 30048	Plug	Cable conn. 3.5 mm	BU403
4822 124 20788	Cap. electrolyt.	2200UF 50% 25 V	C402
5322 124 14075	Cap. elec. tantal	1UF 20% 35 V	C404
5322 124 14075	Cap. elec. tantal	1UF 20% 35 V	C405
5322 124 14075	Cap. elec. tantal	1UF 20% 35 V	C406
5322 124 14075	Cap. elec. tantal	1UF 20% 35 V	C407
4822 130 50312	Diode	BY225-100	D401
5322 130 34973	Diode	OP131W	D402
5322 130 34973	Diode	OP131W	D403
5322 130 34973	Diode	OP131W	D404
5322 130 34973	Diode	OP131W	D405
5322 130 34973	Diode	OP131W	D406
4822 253 30014	Fuse	315MAT	F401
4822 253 30021	Fuse	1AT	F402
4822 253 30024	Fuse	1.6AT	F403
5322 130 44698	Transistor	7815CU	IC401
5322 130 44844	Integr. circuit	UA7915UC	IC402
5322 277 10706	Switch, tumbler	Mains switch	SK401
5322 146 10045	Transformer	Mains transformer	T401
5322 321 14018	Flex, mains	Mains cord	1

Service Code	Description				Position Number
	Input print 1				
5322 267 54107	Socket	Socket 8P		262	BU101
5322 267 40497	Socket, female	XLR socket			BU102
5322 267 40497	Socket, female	XLR socket			BU103
5322 290 60456	Connector	Flat cable conn.			BU104
5322 124 14067	Cap. elec. tantal	3.3UF	20%	35 V	C103
4822 124 20688	Cap. electrolyt	33UF	50%	16 V	C108
5322 124 14064	Cap. elec. tantal	4.7UF	20%	25 V	C109
4822 124 20716	Cap. electrolyt	150UF	50%	40 V	C112
4822 124 20941	Cap. electrolyt	68UF	40%	6.3 V	C114
5322 124 14067	Cap. elec. tantal	3.3UF	20%	35 V	C118
4822 124 20941	Cap. electrolyt	68UF	40%	6.3 V	C121
5322 124 14064	Cap. elec. tantal	4.7UF	20%	25 V	C122
4822 124 20708	Cap. electrolyt	10UF	50%	40 V	C125
5322 124 14067	Cap. elec. tantal	3.3UF	20%	35 V	C126
4822 124 20708	Cap. electrolyt	10UF	50%	40 V	C128
5322 124 14064	Cap. elec. tantal	4.7UF	20%	25 V	C130
5322 124 14064	Cap. elec. tantal	4.7UF	20%	25 V	C131
4822 130 30613	Diode	BAW62			D101
4822 130 31128	LED	CQY54	LED red		D102
4822 130 31879	LED	CQY95	LED green		D103
5322 209 86092	Integr. circuit				IC101
5322 209 86092	Integr. circuit				IC102
5322 209 86285	Integr. circuit	NE5534N			IC103
5322 209 86285	Integr. circuit	NE5543N			IC104
4822 209 81349	Integr. circuit	MC1458N			IC105
4822 209 80617	Integr. circuit	UA741TC			IC106
4822 209 80617	Integr. circuit	UA741TC			IC107

Service Code	Description		Position Number
5322 158 10598	Coil, choke		L101
5322 158 10598	Coil, choke		L102
5322 158 10598	Coil, choke		L103
5322 101 30514	Potm. carbon	Potm. 10K Neg. log.	R161
5322 101 20722	Potm. carbon	Potm. 10K Lin. treble	R162
5322 101 20724	Potm. carbon	Potm. 5K Lin.	R163
5322 101 20723	Potm. carbon	Potm. 47K Lin. Bass	R164
5322 101 30512	Potm. carbon	Potm. 2K2 log. aux.	R165
5322 102 30414	Potm. balance	Potm. 10K spec. PAH	R166
4822 100 10072	Potm. trimming	Potm. 100K Lin.	R167
5322 101 20721	Potm. cermet	Potm. 10K Lin.	R168
5322 101 20731	Potm. cermet	Potm. 1K Log.	R169
5322 105 10521	Potm. slide	Potm. 5K log. fader	R170
5322 276 11173	Switch, pushbut.	Switch line/Mic	SK101
5322 276 11174	Switch, pushbut.	Switch Sym/asym	SK102
5322 276 11172	Switch, pushbut.	Switch bypass	SK103
5322 276 11172	Switch, pushbut.	Switch filter 120 Hz	SK104
5322 276 11172	Switch, pushbut.	Switch aux. on/off	SK105
5322 276 11172	Switch, pushbut.	Switch mute	SK106
5322 276 11172	Switch, pushbut.	Switch PFL	SK107
5322 146 30458	Transformer	Input transformer	T101
4822 130 44246	Transistor	BC549C	TS101
5322 130 32136	LED	LED holder	M101
5322 414 30054	Knob	Knob	M102
5322 414 70025	Cap for knob	Cap blue	M103
5322 414 70027	Cap for knob	Cap green	M104
5322 414 70024	Cap for knob	Cap red	M105
5322 414 70026	Cap for knob	Cap yellow	M106

Service Code	Description				Position Number
5322 414 70029	Dial	Dial ring			M107
5322 414 64048	Knob, slide	Knob grey			M108
5322 265 30269	Socket, male	XLR socket male			BU201
5322 267 40497	Socket, female	XLR socket female			BU202
5322 290 60456	Connector	Flat cable conn.			BU203
4822 124 20688	Cap. electrolyt.	33UF	50%	16 V	C206
5322 124 14067	Cap. elec. tantal	3.3UF	20%	35 V	C207
4822 124 20708	Cap. electrolyt.	10UF	50%	40 V	C210
4822 124 20699	Cap. electrolyt.	47UF	50%	25 V	C211
5322 124 14075	Cap. elec. tantal	1UF	20%	35 V	C214
5322 124 14066	Cap. elec. tantal	10UP	50%	16 V	C215
4822 124 20679	Cap. electrolyt.	100UF	50%	10 V	C216
4822 124 20689	Cap. electrolyt.	68UF	50%	10 V	C218
4822 130 30613	Diode	BAW62			D201
4822 130 31128	LED	CQY54/11			D202
4822 130 31879	LED	CQY95/II			D203
4822 130 30613	Diode	BAW62			D204
4822 130 30613	Diode	BAW62			D205
4822 130 30613	Diode	BAW62			D206
4822 130 30613	Diode	BAW62			D207
4822 130 30613	Diode	BAW62			D208
4822 130 30613	Diode	BAW62			D209
4822 130 34173	Diode, reference	BZX79-B5V6			D210
5322 130 32135	LED	GL112513			D211
4822 130 30613	Diode	BAW62			D212
4822 130 30613	Diode	BAW62			D213

Service Code	Description		Position Number
4822 130 30613	Diode	BAW62	D214
4822 130 30613	Diode	BAW62	D215
5322 130 34912	Display		D216
5322 209 86092	Integr. circuit		IC201
5322 209 86285	Integr. circuit	NE5534N	IC202
4822 209 80617	Integr. circuit	UA741TC	IC203
4822 209 81349	Integr. circuit	MC1458N	IC204
4822 209 80883	Integr. circuit	UAA180	IC205
5322 105 10521	Potm. slide	5K log. fader	R261
5322 101 30513	Potm. carbon	10K log. aux-return	R262
4822 100 10072	Potm. trimming	100K lin.	R263
4822 100 10072	Potm. trimming	100K Lin.	R264
4822 100 10072	Potm. trimming	100K lin.	R265
5322 276 11172	Switch, pushbut.	Switch limiter	SK201
5322 276 11172	Switch, pushbut.	Switch mute	SK202
5322 276 11172	Switch, pushbut.	Switch PFL	SK203
5322 140 60254	Transf. output	Output transformer	T201
5322 130 32136	LED	LED holder	M201
5322 414 30054	Knob	Knob	M202
5322 414 70023	Cap for knob	Cap grey	M203
5322 414 70029	Dial	Dial ring	M204
5322 414 64049	Knob, slide	Knob	M205

Service Code	Description				Position Number
5322 267 30507	Socket, female	Headphone socket			BU304
4822 124 20679	Cap. electrolyt.	100UF	50%	10 V	C304
5322 124 14067	Cap. elec. tantal.	3.3UF	20%	35 V	C305
4822 124 20679	Cap. electrolyt.	100UF	50%	10 V	C308
5322 124 14066	Cap. elec. tantal.	10UF	50%	16 V	C310
4822 124 20699	Cap. electrolyt.	47UF	50%	25 V	C311
4822 124 20688	Cap. electrolyt.	33UF	50%	16 V	C314
5322 124 14067	Cap. elec. tantal.	3.3UF	20%	35 V	C315
5322 124 14067	Cap. elec. tantal.	3.3UF	20%	35 V	C316
4822 124 20679	Cap. electrolyt.	100UF	50%	10 V	C321
4822 124 20679	Cap. electrolyt.	100UF	50%	10 V	C322
4822 130 30613	Diode	BAW62			D301
4822 130 31128	LED	CQY54/11			D302
4822 130 31879	LED	CQY95/II			D303
4822 130 30613	Diode	BAW62			D304
4822 130 30613	Diode	BAW62			D305
4822 130 30613	Diode	BAW62			D306
4822 130 30613	Diode	BAW62			D307
4822 130 30613	Diode	BAW62			D308
4822 130 30613	Diode	BAW62			D309
4822 130 34173	Diode, reference	BZX79-B5V6			D310
5322 130 32135	LED	GL112513			D311
5322 209 86092	Integr. circuit				IC301

Service Code	Description		Position Number
5322 209 86285	Integr. circuit	NE5534N	IC302
4822 209 80617	Integr. circuit	UA741TC	IC303
4822 209 81349	Integr. circuit	MC1458N	IC304
5322 209 86092	Integr. circuit		IC305
5322 209 86285	Integr. circuit	NE5534N	IC306
5322 209 86285	Integr. circuit	NE5534N	IC307
4822 209 80883	Integr. circuit	UAA180	IC308
5322 130 32136	LED	LED Holder	M301
5322 414 30054	Knob	Knob	M302
5322 414 70023	Cap for knob	Cap grey	M303
5322 414 70029	Dial	Dial ring	M304
5322 414 64049	Knob, slide	Knob	M305
5322 105 10521	Potm. slide	5K log. fader	R361
5322 102 30413	Potm. balance	2K2 log. Mon. level	R362
5322 102 30413	Potm. balance	2K2 log. Headph.	R363
4822 100 10072	Potm. trimming	100K Lin.	R364
4822 100 10072	Potm. trimming	100K Lin.	R365
5322 276 30308	Switch mechanism	Switch monitor	SK301
5322 276 11172	Switch, pushbut.	Switch mute	SK302
5322 276 11172	Switch, pushbut.	Switch PFL	SK303
5322 140 60254	Transf. output	Output transformer	T301

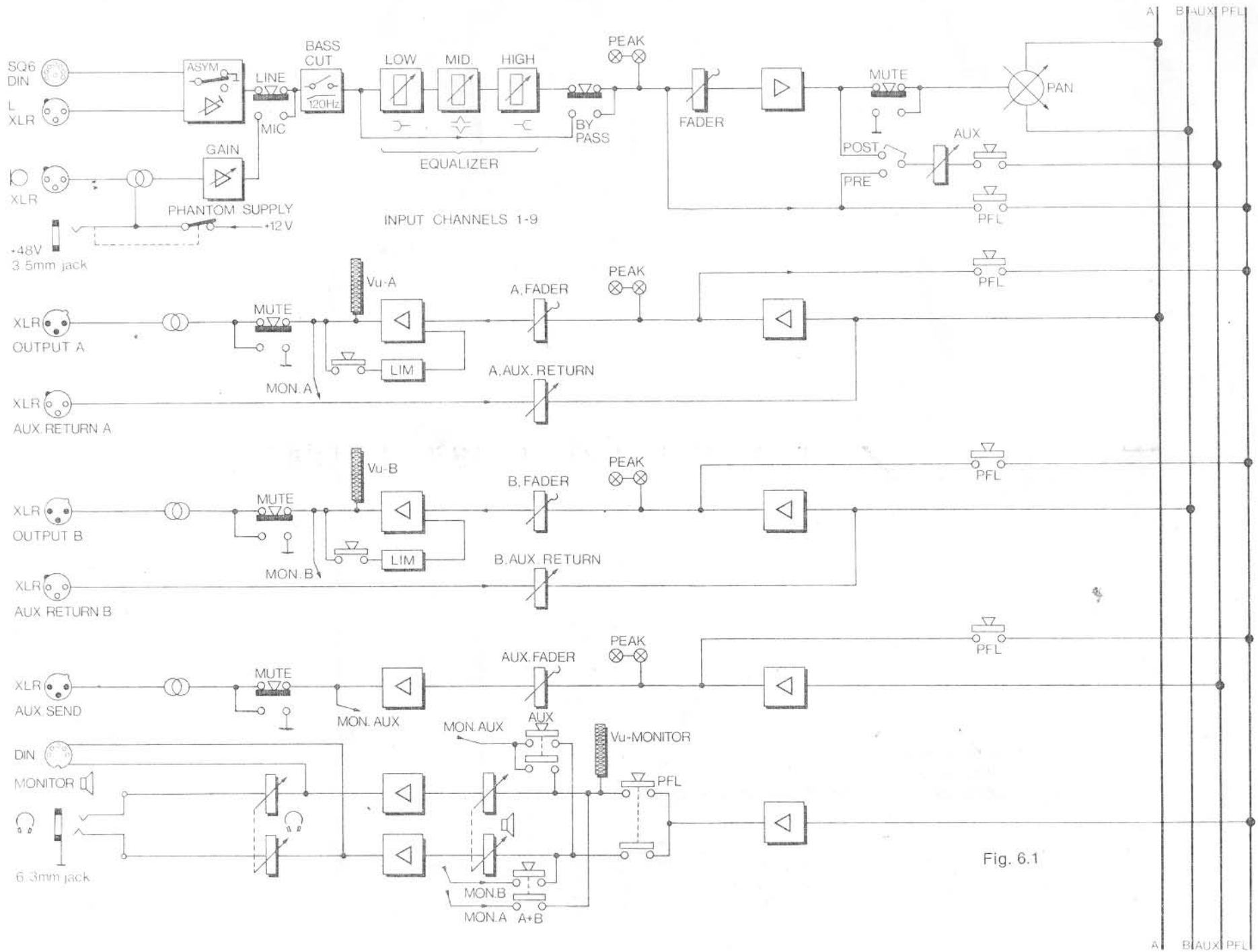
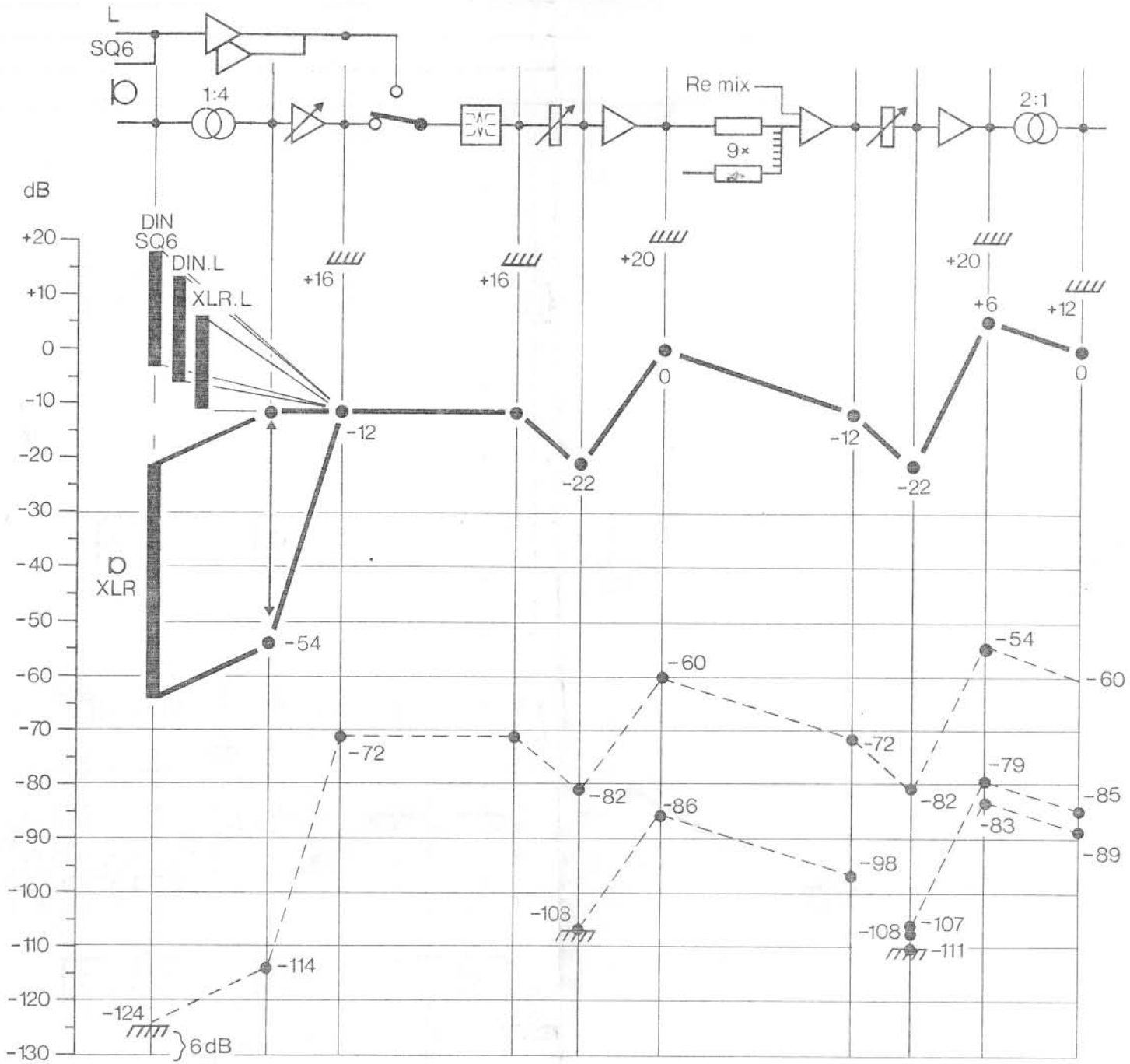


Fig. 6.1



= distortion limited level
= equivalent input noise level (flat; B=20K Hz) k

Fig. 6.2

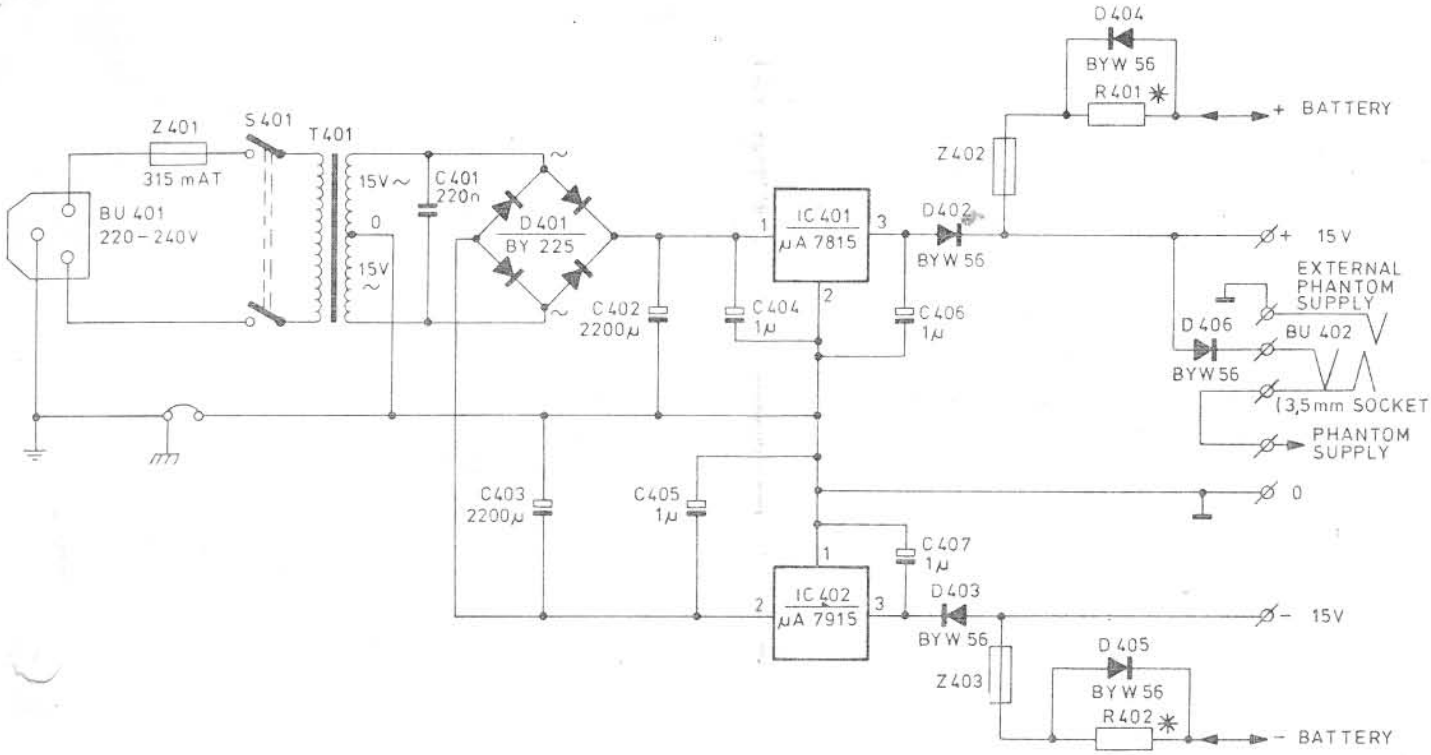


Fig. 6.3

* VALUE TO BE DETERMINED LATER
AND DELIVERED WITH OPTIONAL BATTERY PACK

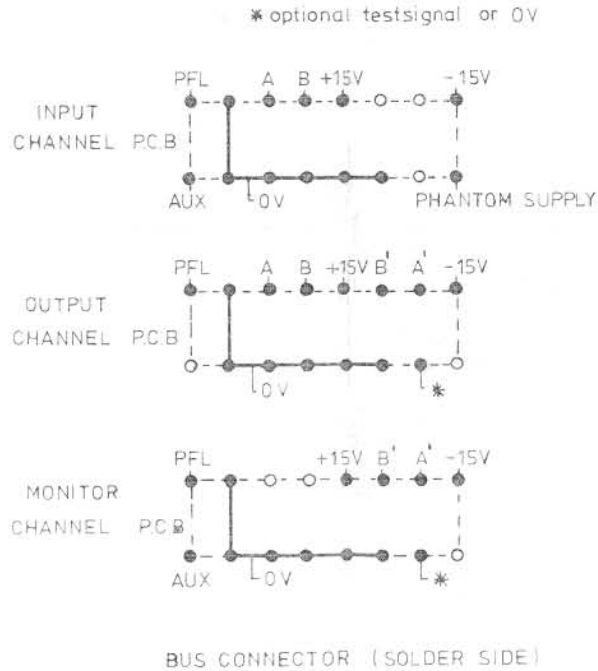


Fig. 6.5

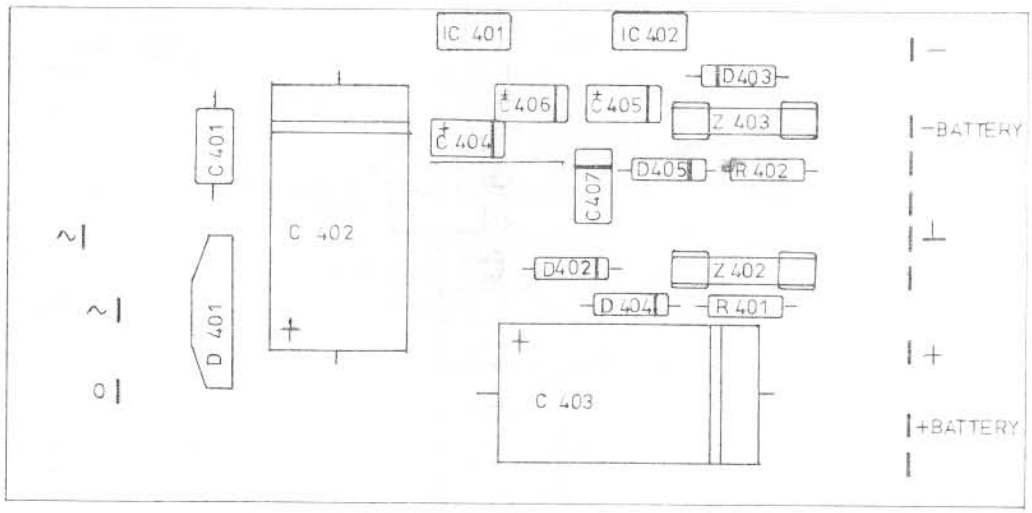


Fig. 6.4

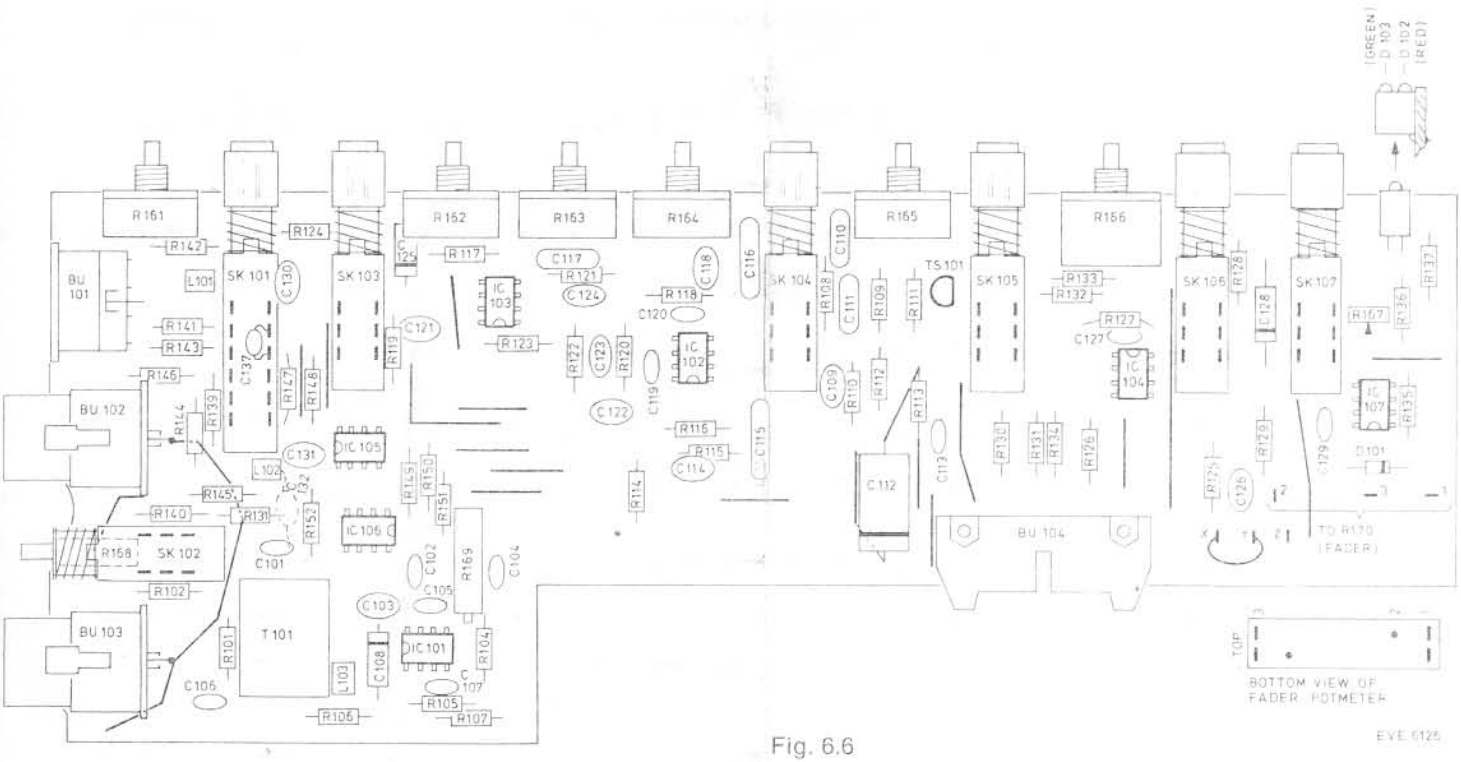
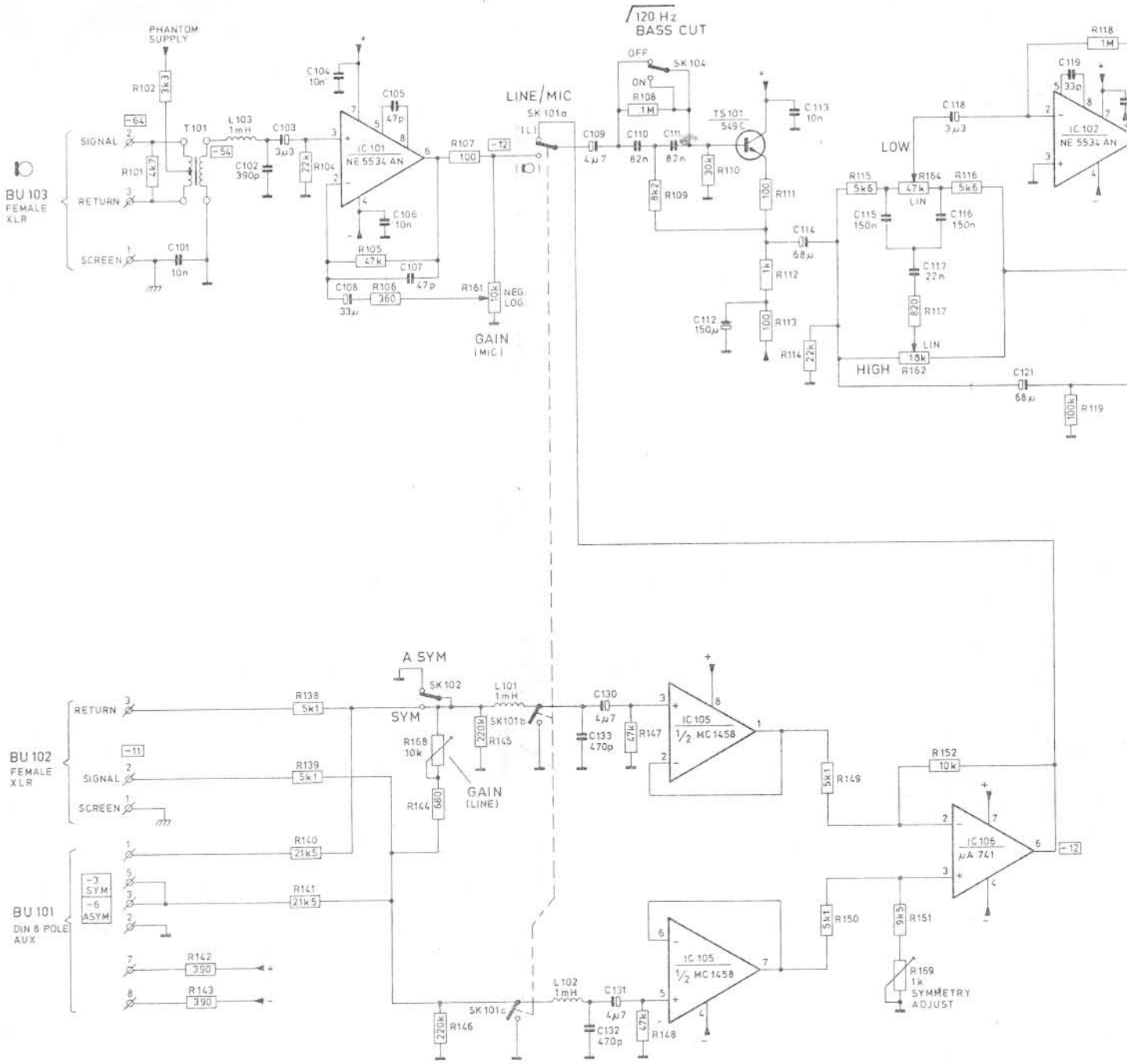
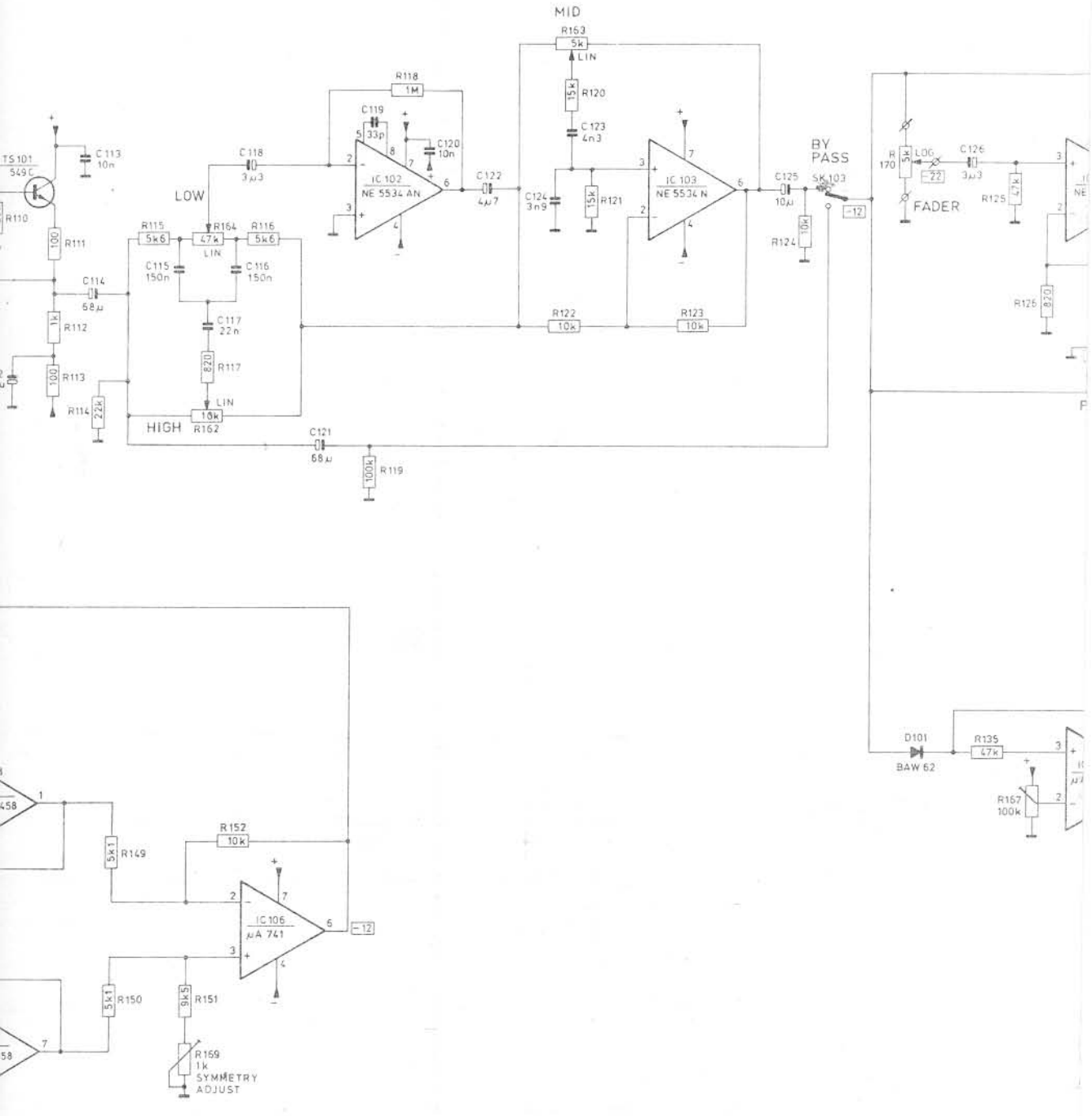
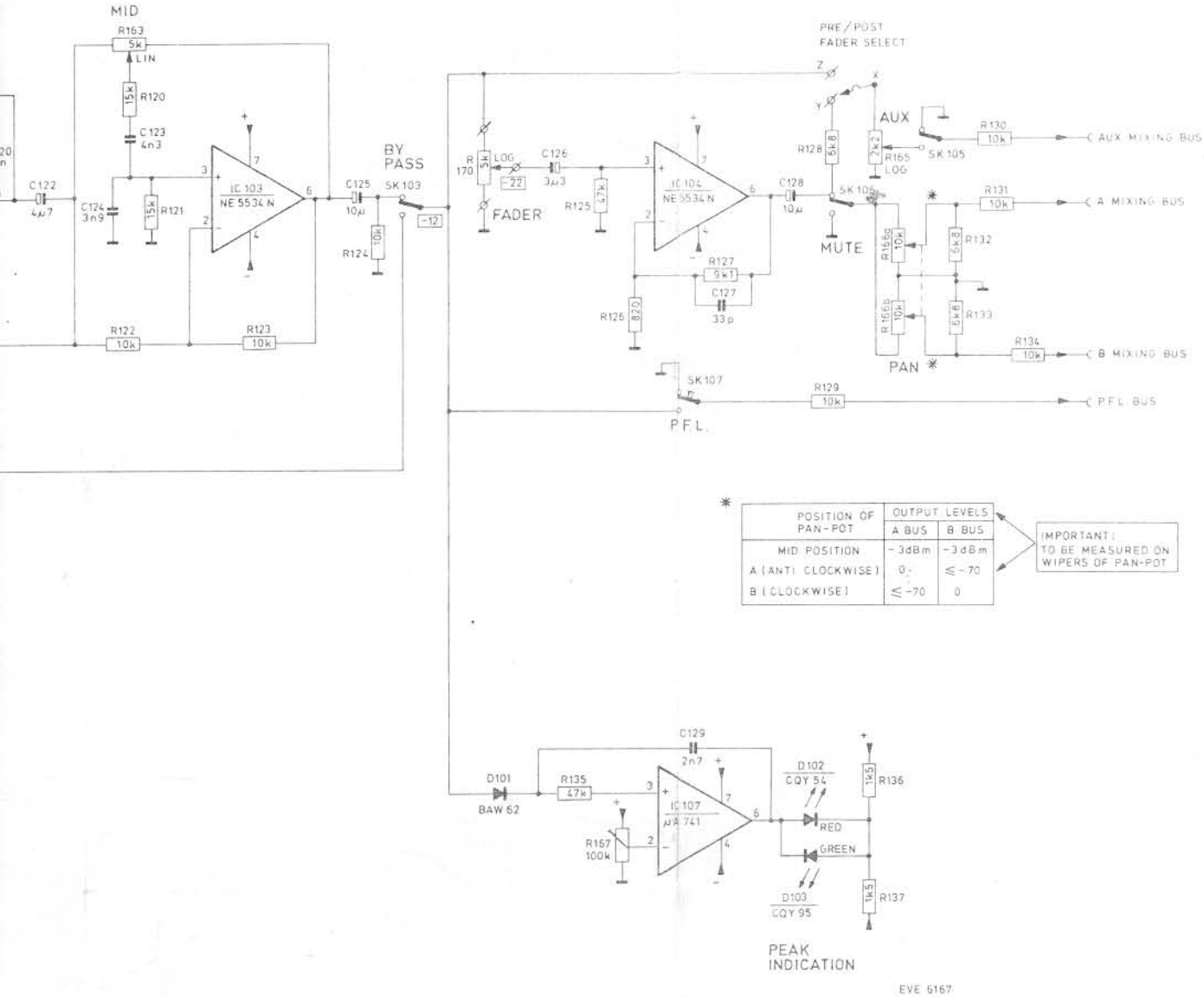


Fig. 6.6


PHANTOM SUPPLY
R102 3k3
-64
SIGNAL
RETURN
SCREEN
BU 103 FEMALE XLR
R101 4k7
T101
L103 1mH
C103 3µ3
C102 390p
-54
C101 10n
C104 10n
C105 47p
IC 101 NE 5534 AN
R104 22k
R105 47k
C107 47p
C108 33µ
R106 360
R107 100
-12
R161 10k NEG. LOG
GAIN (MIC)
LINE/MIC
SK 101a
C109 4µ7
/120 Hz BASS CUT
OFF
ON
SK 104
R108 1M
C110 62n
C111 82n
TS 101 549 C
C113 10n
R109 8k2
R110 30k
R111 100
C114 68µ
R112 1k
C112 150µ
R113 100
R114 22k
LOW
HIGH
R115 5k6
R164 47k LIN
R116 5k6
C115 150n
C116 150n
C117 22n
R117 820
R162 15k LIN
C118 3µ3
C119 33p
R118 1M
IC 102 NE 5534 AN
C121 68µ
R119 100k
A SYM
SK 102
SYM
L101 1mH
SK101b
C130 4µ7
C133 470p
R147 47k
IC 105 1/2 MC 1458
R149 5k1
R152 10k
IC 106 µA 741
-12
R168 10k
R145 220k
R144 680
GAIN (LINE)
BU 102 FEMALE XLR
-11
RETURN
SIGNAL
SCREEN
R138 5k1
R139 5k1
R140 21k5
R141 21k5
BU 101 DIN 8 POLE AUX
-3 SYM
-6 ASYM
R142 390
R143 390
SK101c
L102 1mH
C131 4µ7
C132 470p
R148 47k
R146 220k
IC 105 1/2 MC 1458
R150 5k1
R151 9k5
R159 1k SYMMETRY ADJUST


MID
R163
5k
LIN
R120
15k
C123
4n3
R118
1M
C119
33p
C120
10n
C118
3µ3
LOW
IC 102
NE 5534 AN
C122
4µ7
IC 103
NE 5534 N
C124
3n9
R121
15k
BY
PASS
SK 103
C125
10µ
R124
10k
-12
R115
5k6
R164
47k
LIN
R116
5k6
C115
150n
C116
150n
C117
22n
R117
820
LIN
10k
R162
HIGH
R122
10k
R123
10k
C121
68µ
R119
100k
C113
10n
R110
R111
100
C114
68µ
R112
1k
R113
100
R114
22k
R170
5k
LOG
-22
C126
3µ3
FADER
R125
47k
R126
820
D101
BAW 62
R135
47k
R157
100k

R152
10k
R149
5k1
IC 106
µA 741
-12
R150
5k1
R151
9k5
R159
1k
SYMMETRY
ADJUST



*

POSITION OF PAN-POT	OUTPUT LEVELS	
	A BUS	B BUS
MID POSITION	-3dBm	-3dBm
A (ANTI CLOCKWISE)	0,-	≤ -70
B (CLOCKWISE)	≤ -70	0

IMPORTANT:
TO BE MEASURED ON
WIPERS OF PAN-POT

Fig. 6.7

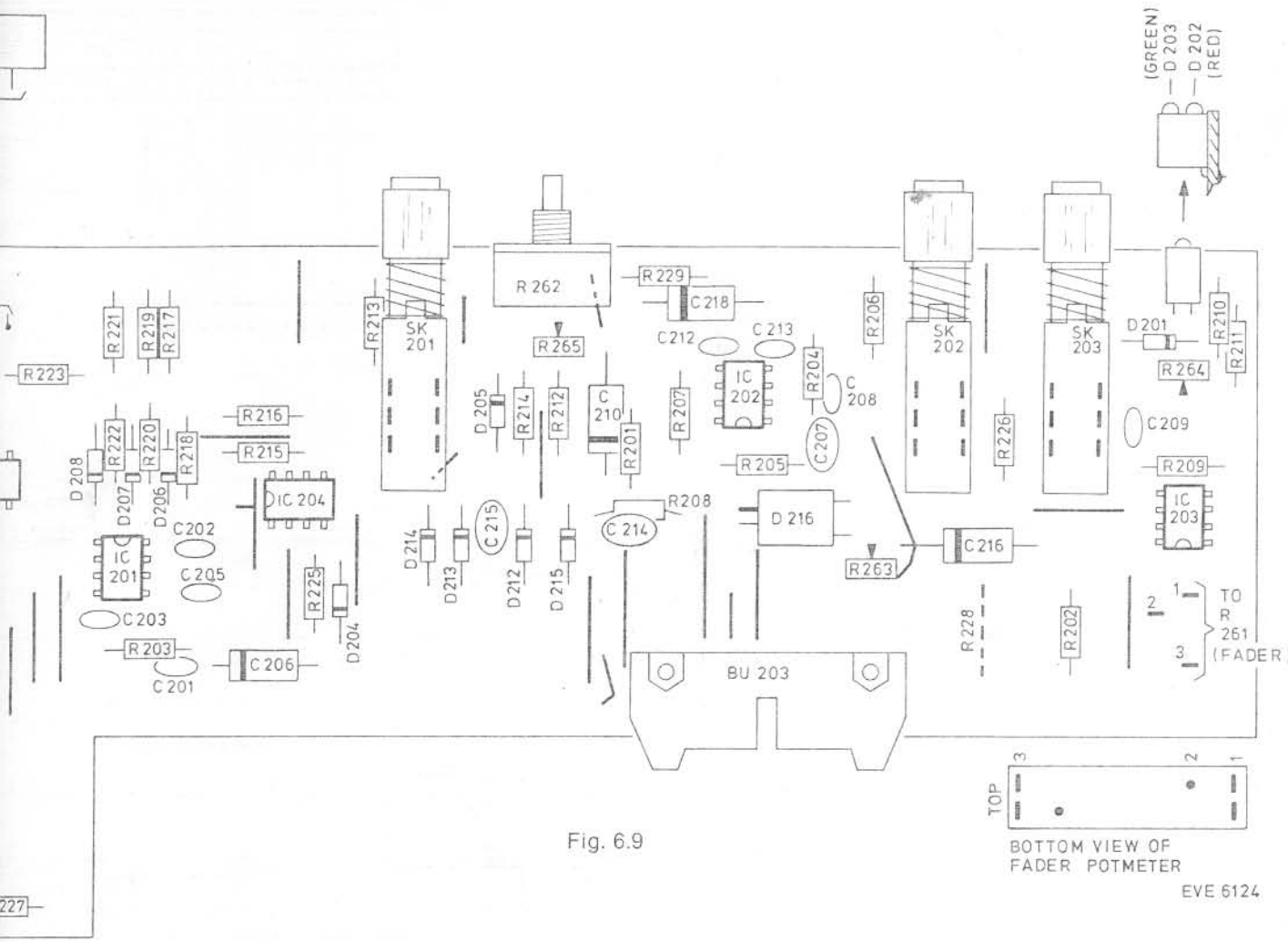


Fig. 6.9

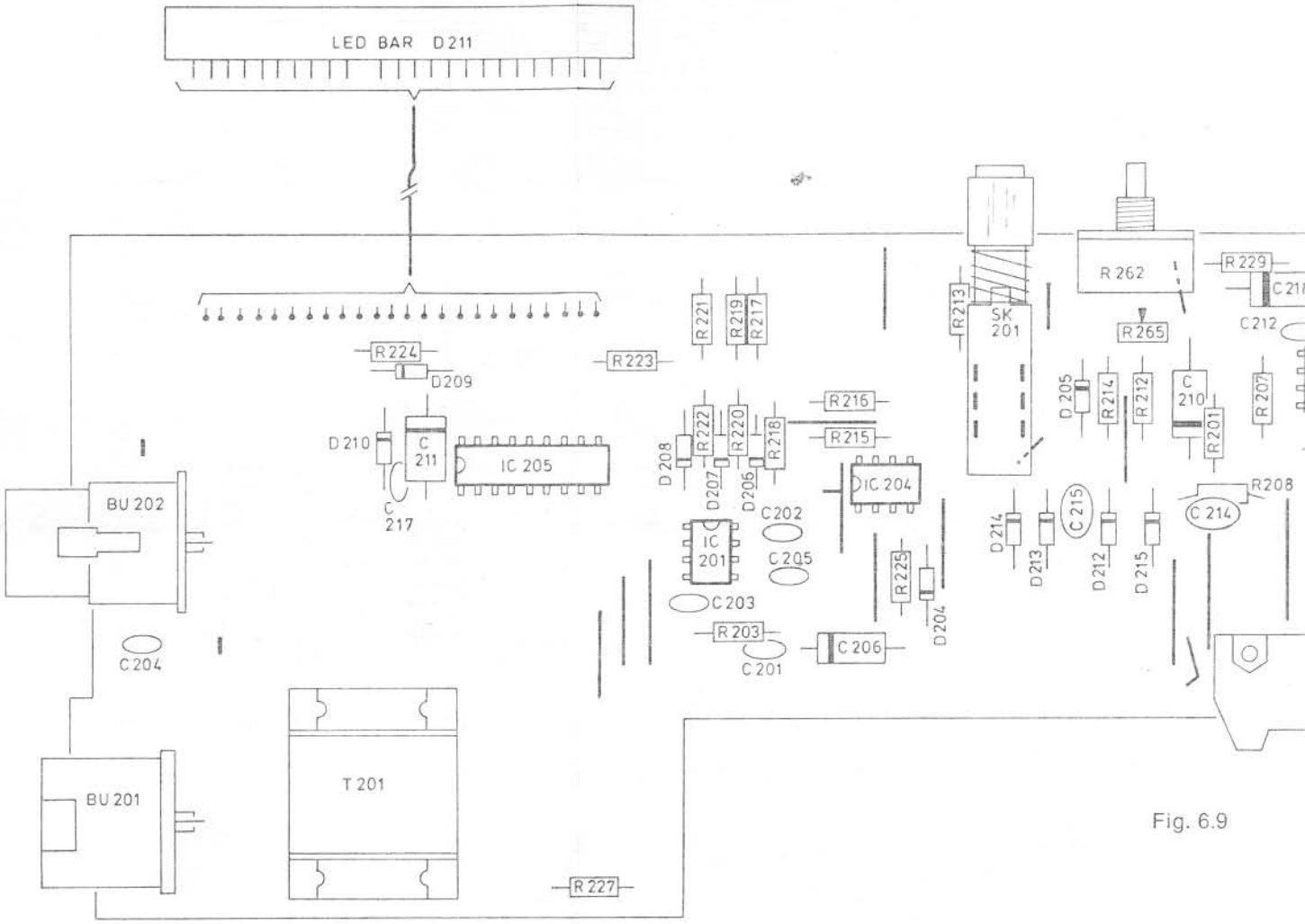
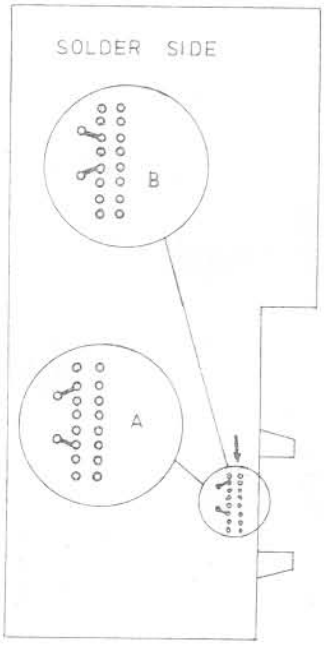
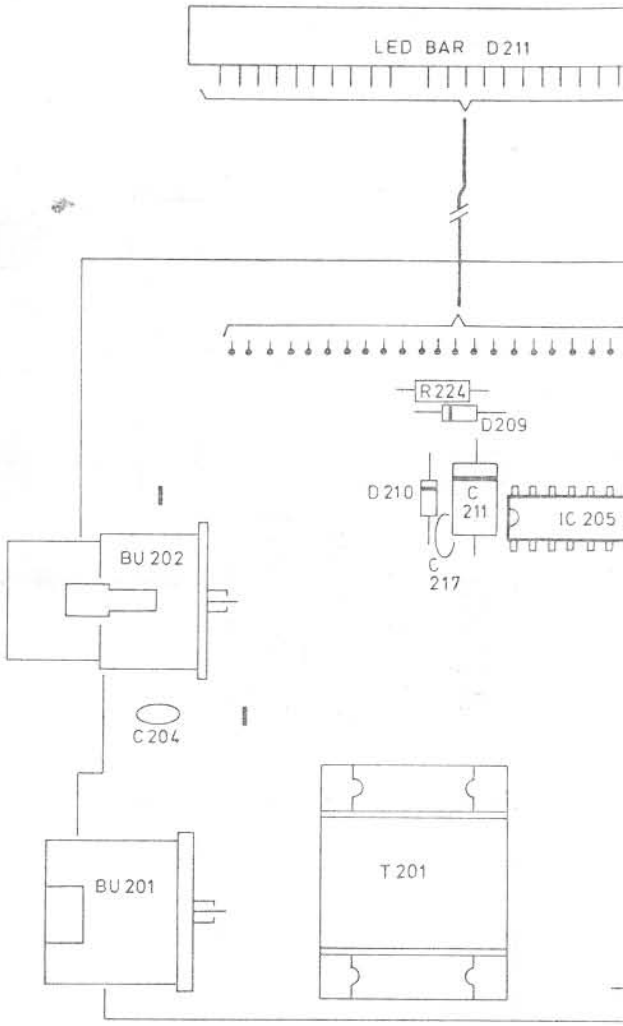


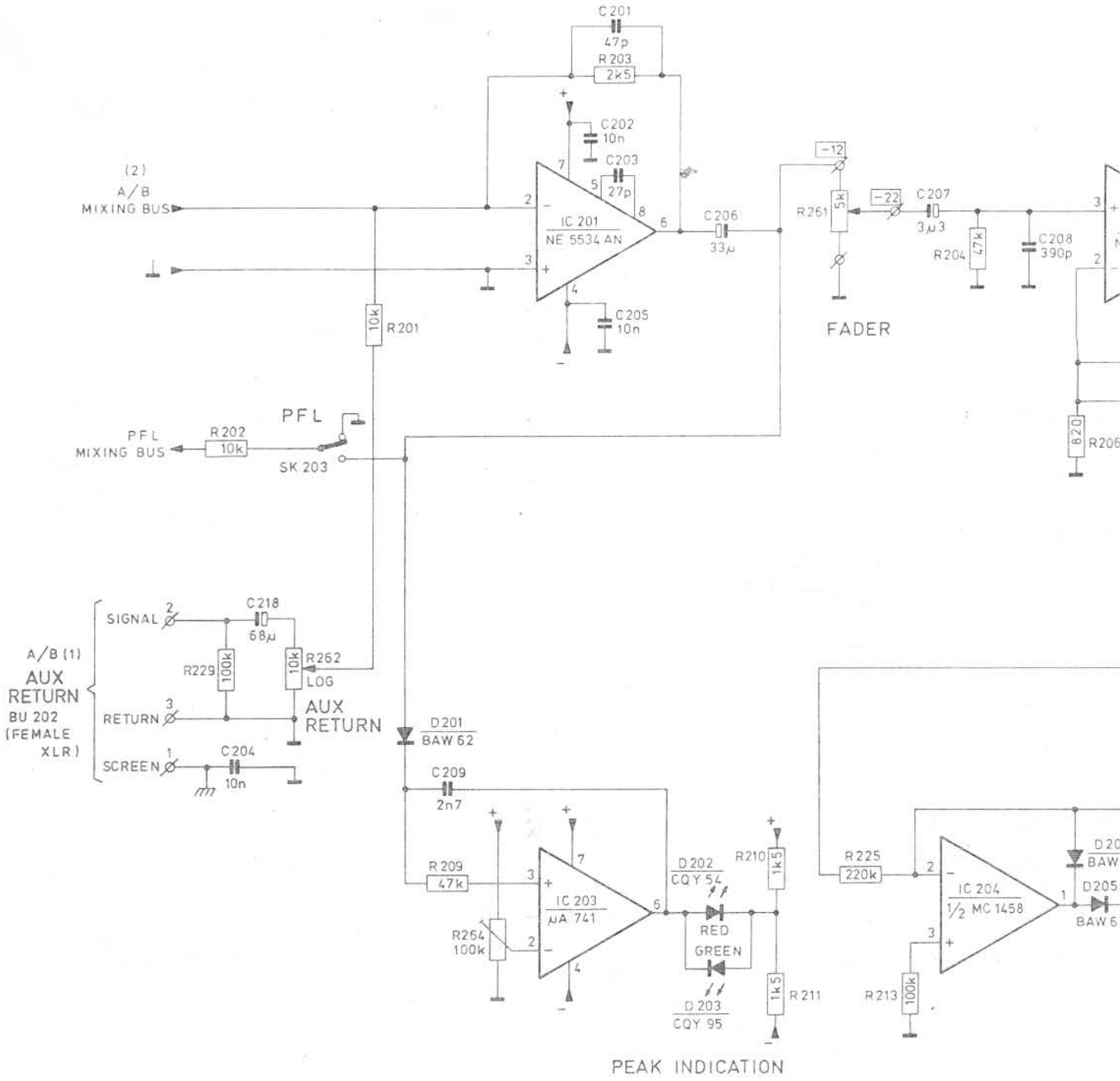
Fig. 6.9



A/B CHANNEL SECTION

Fig. 6.8

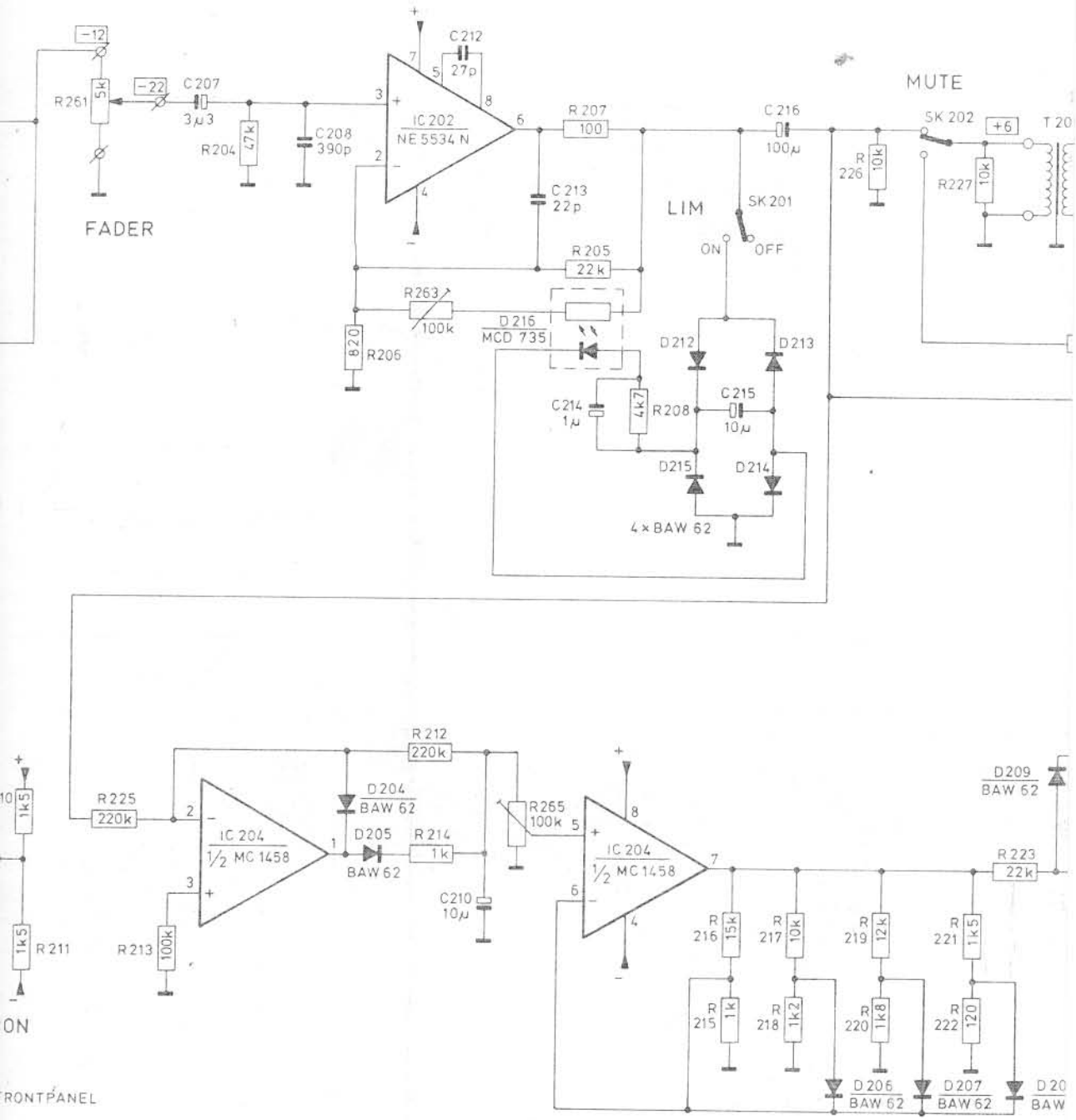




(1) A OR B DEPENDS UPON LOCATION OF THE P.C.B. ON THE FRONTPANEL

(2) A OR B DEPENDS UPON THE TWO SOLDERED PROGRAMMING LINKS ON THE P.C.B. ACCORDING TO THE LOCATION ON THE FRONTPANEL

(PAN-POT: 0dB ATTENUATION FOR THE RELEVANT CHANNEL)
(VALUE 3dB LOWER IF PAN-POT IN-MID POSITION)



ON

FRONTPANEL

LINKS
NTPANEL

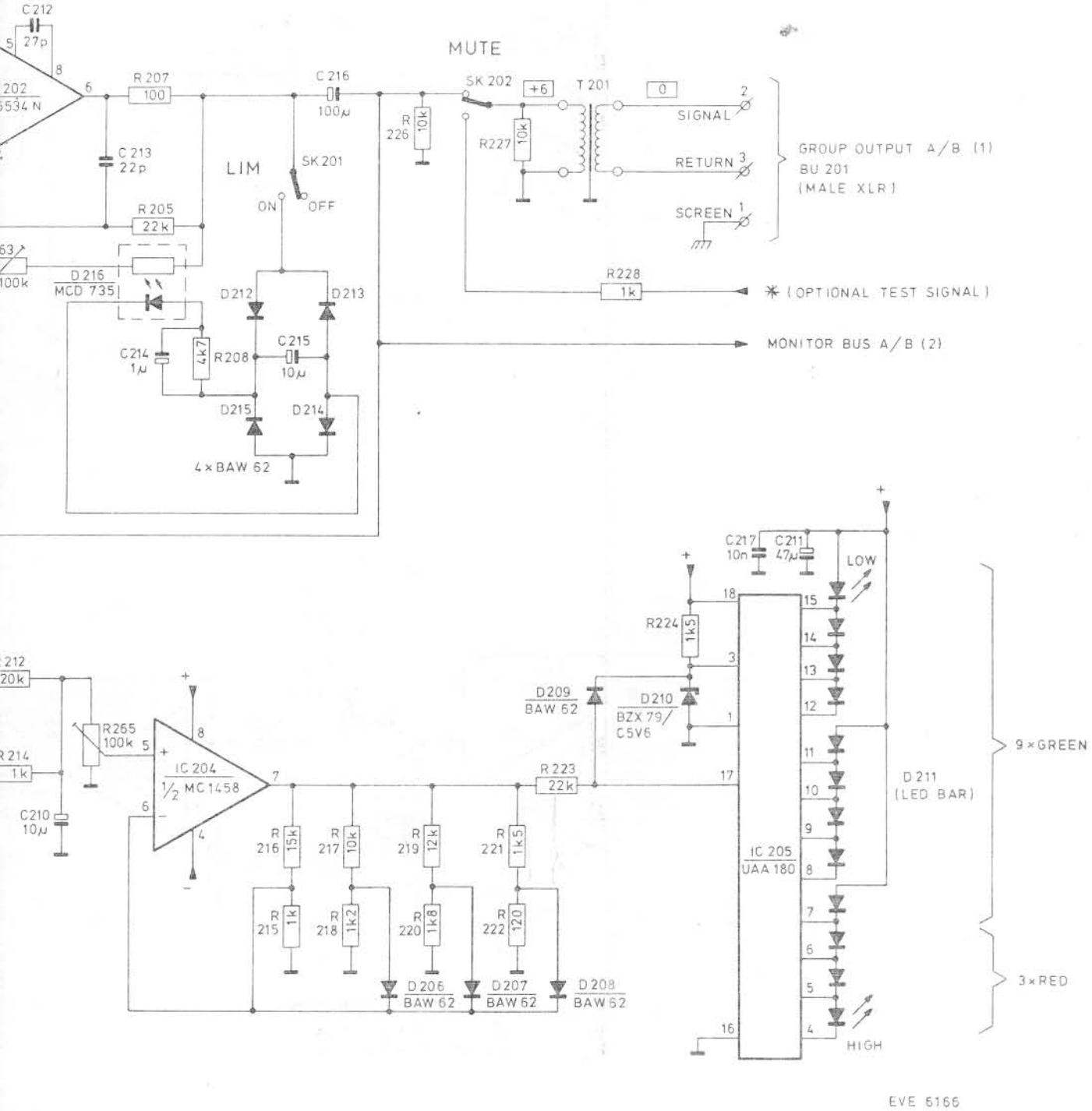
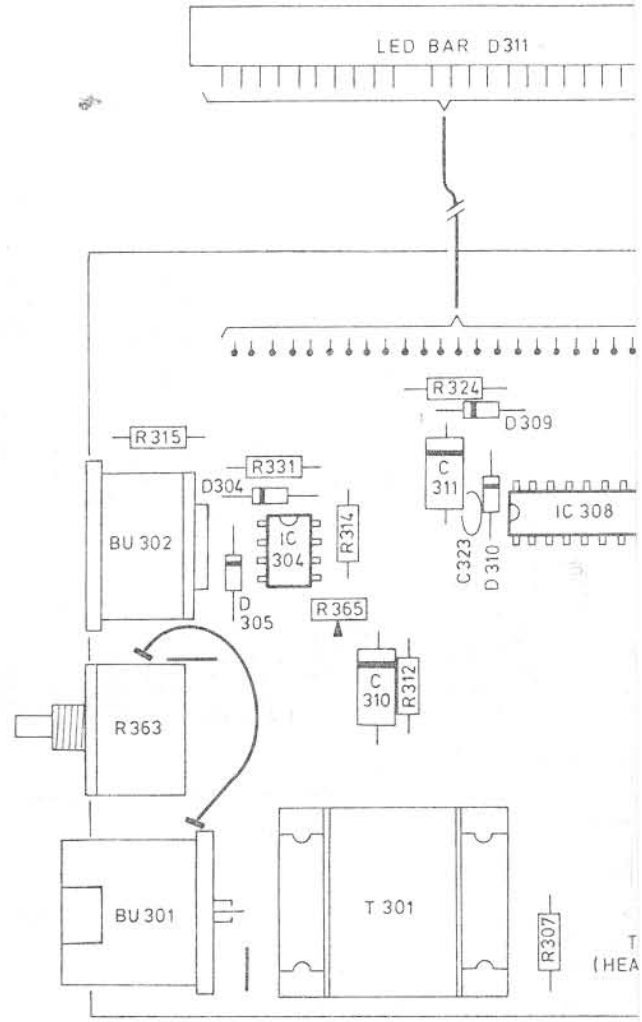


Fig. 6.10


LED BAR D311
R324
D309
R315
R331
D304
C 311
IC 308
BU 302
IC 304
R314
C323
D 310
D 305
R365
C 310
R312
R363
BU 301
T 301
R307

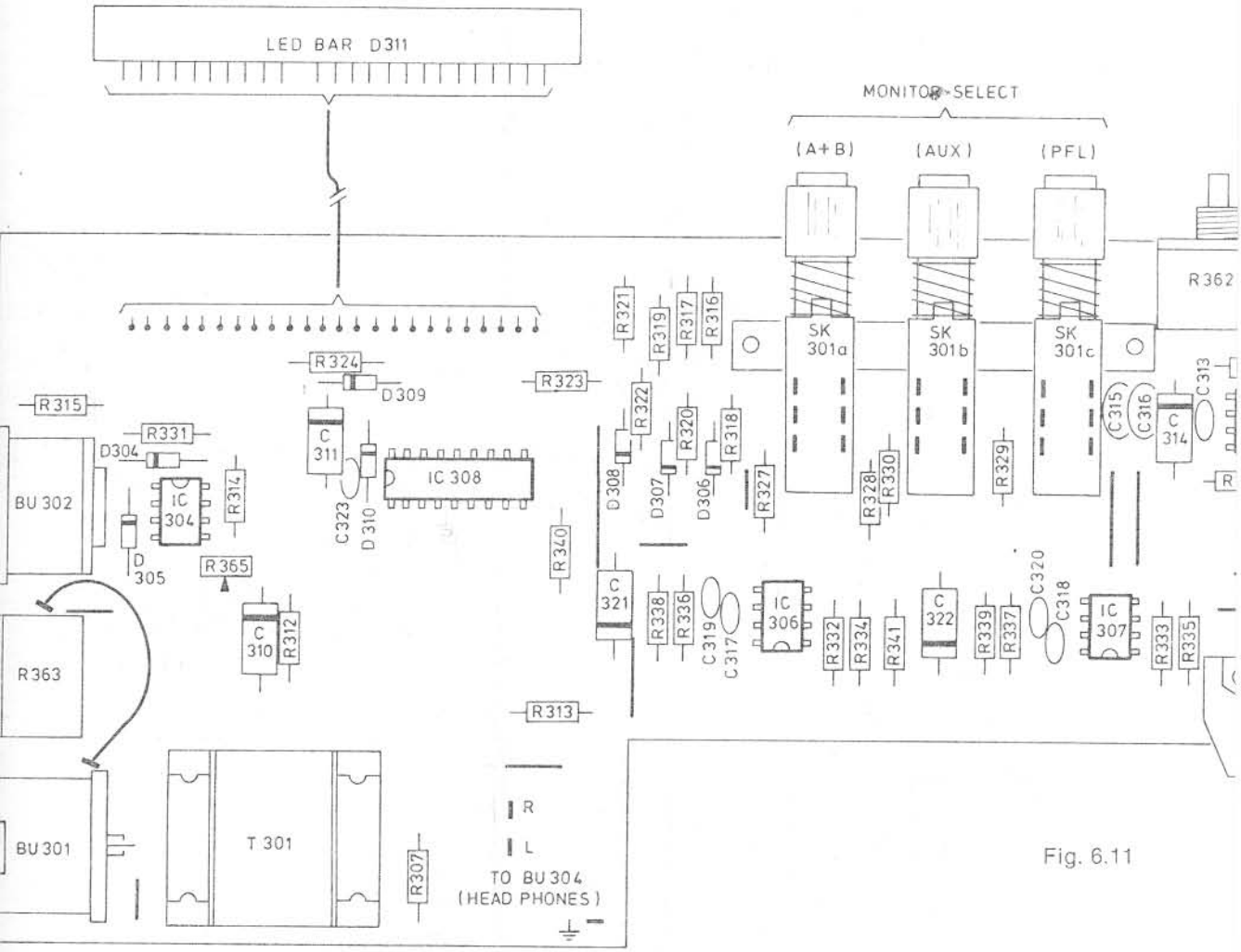


Fig. 6.11

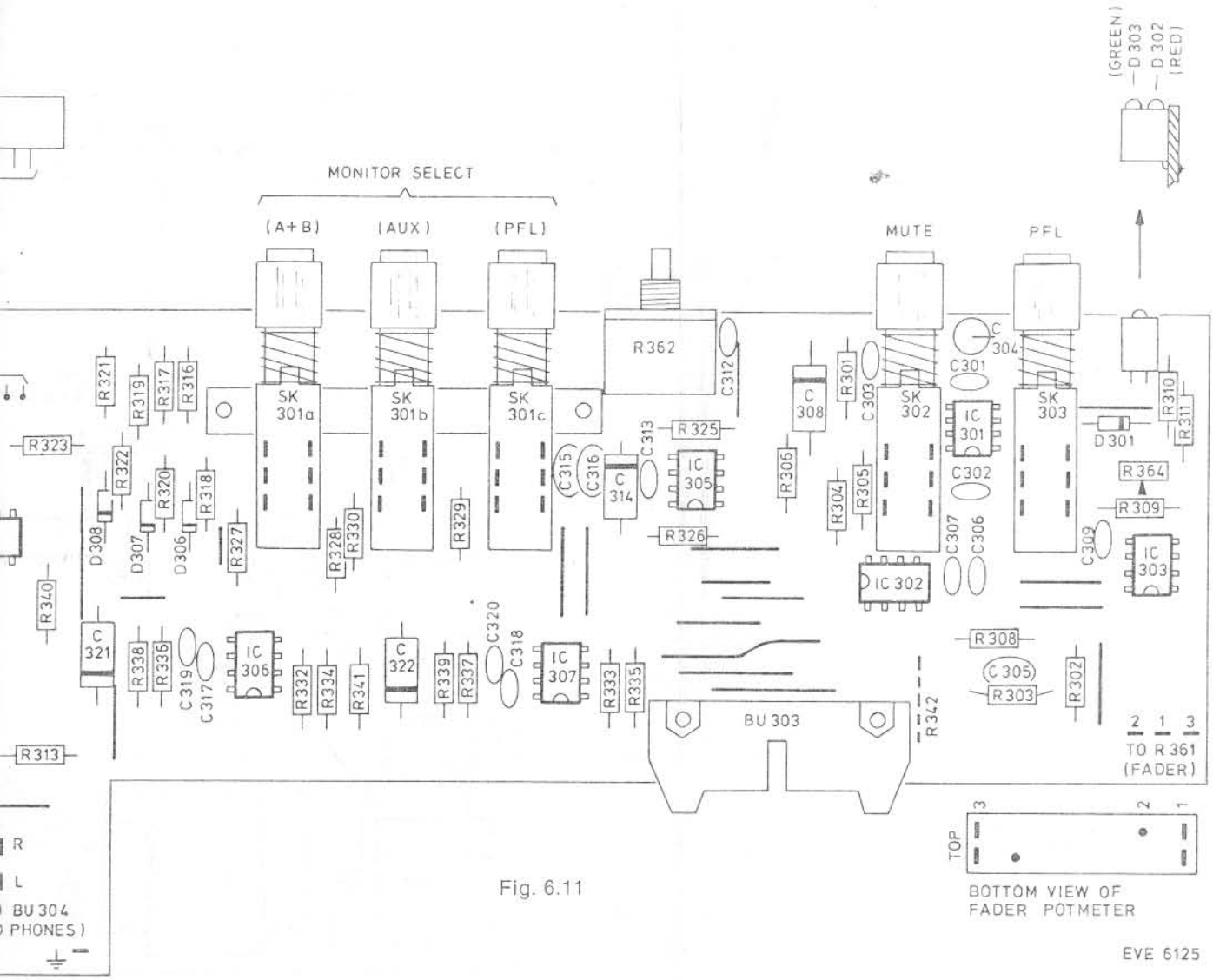
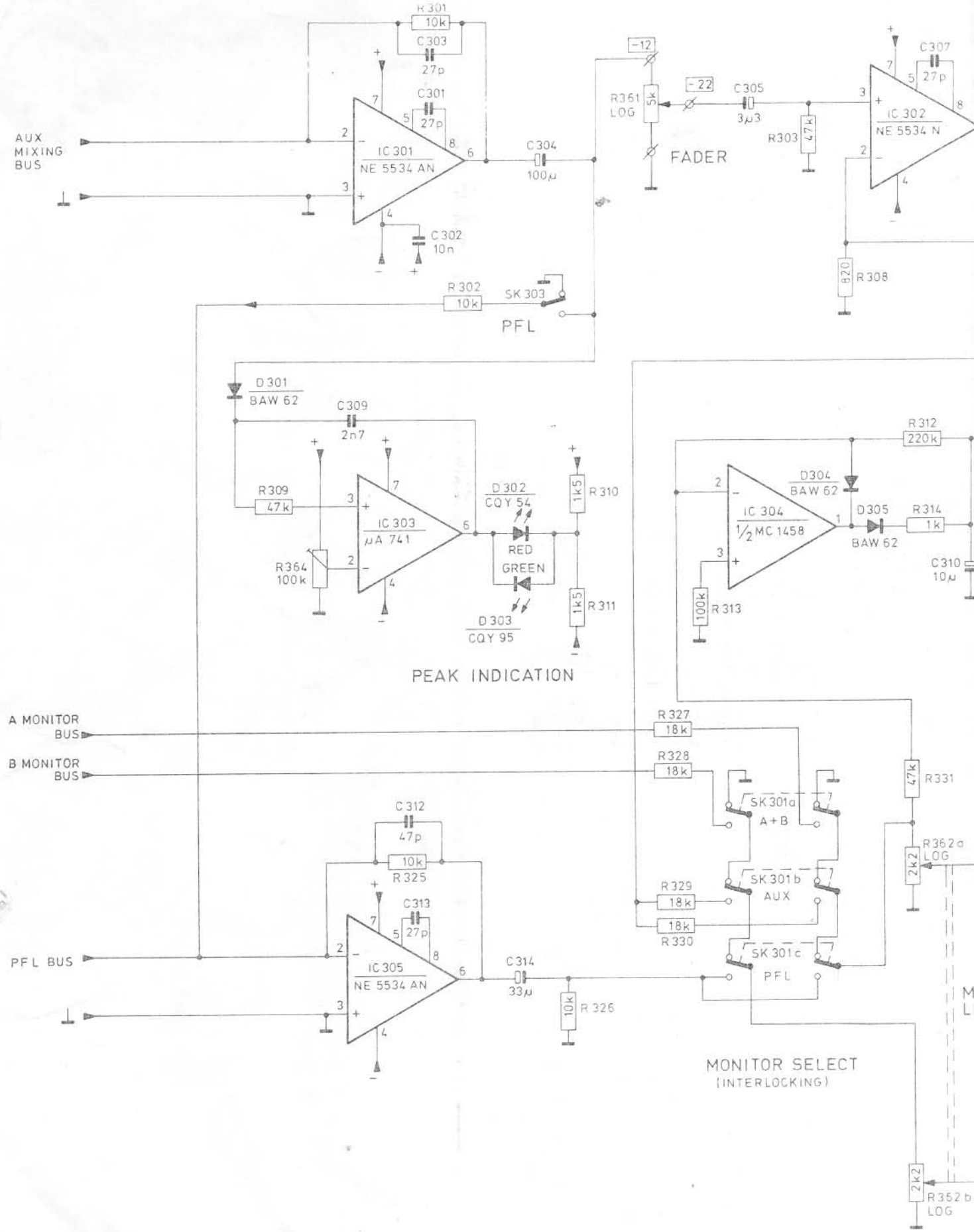
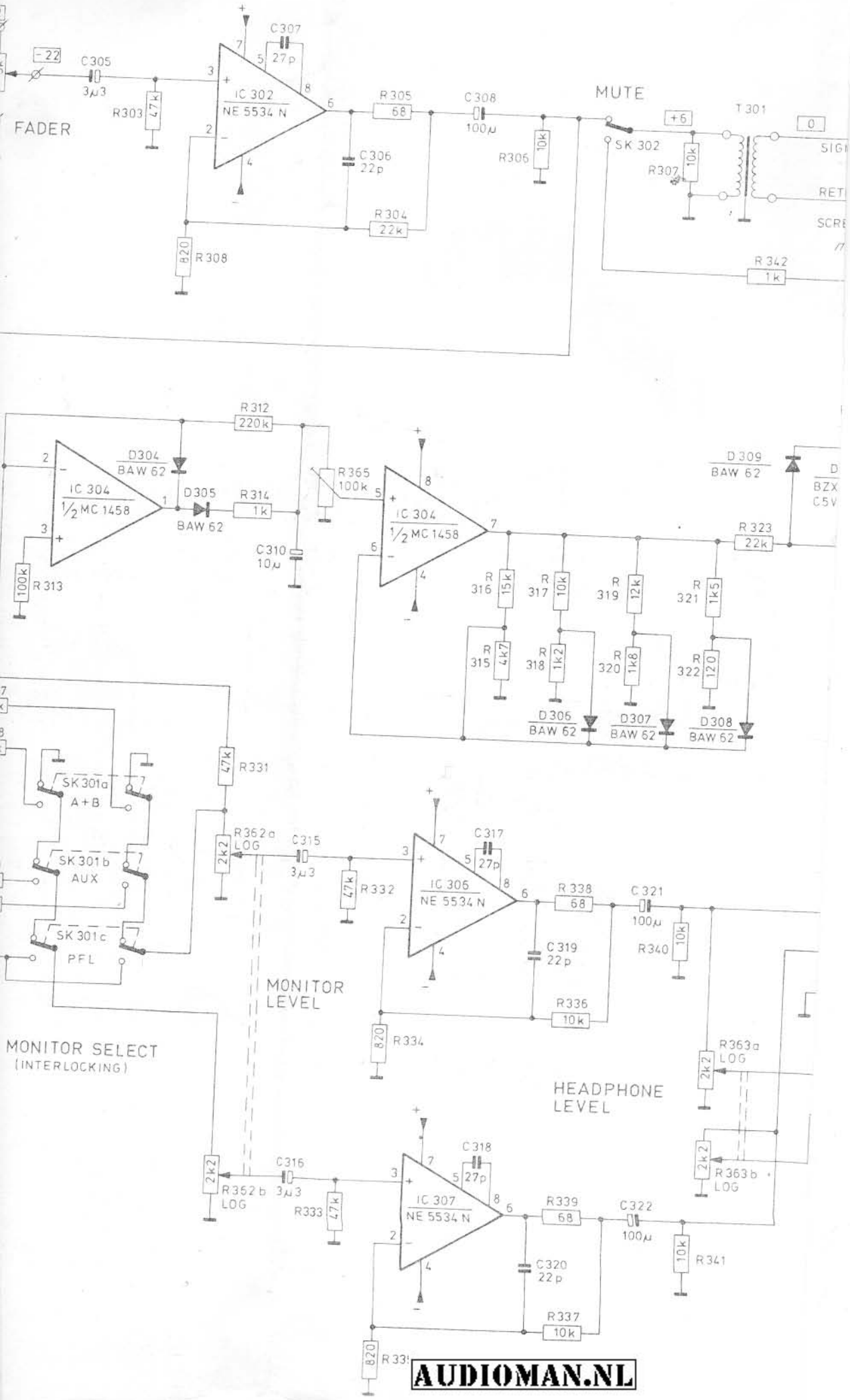


Fig. 6.11


R 301
10k
C 303
27p
C 301
27p
AUX
MIXING
BUS
IC 301
NE 5534 AN
C 304
100µ
C 302
10n
-12
R 361
LOG
5k
-22
C 305
3µ3
FADER
R 303
47k
C 307
27p
IC 302
NE 5534 N
820
R 308
R 302
10k
SK 303
PFL
D 301
BAW 62
C 309
2n7
R 309
47k
IC 303
µA 741
R 364
100k
D 302
CQY 54
RED
GREEN
D 303
CQY 95
1k5
R 310
1k5
R 311
PEAK INDICATION
R 312
220k
D 304
BAW 62
IC 304
1/2 MC 1458
D 305
BAW 62
R 314
1k
C 310
10µ
100k
R 313
A MONITOR
BUS
B MONITOR
BUS
R 327
18k
R 328
18k
SK 301a
A+B
47k
R 331
C 312
47p
10k
R 325
SK 301b
AUX
2k2
R 362a
LOG
R 329
18k
18k
R 330
C 313
27p
IC 305
NE 5534 AN
PFL BUS
C 314
33µ
10k
R 326
SK 301c
PFL
MONITOR SELECT
(INTERLOCKING)
2k2
R 362b
LOG


FADER
C305
3µ3
R303
47k
IC 302
NE 5534 N
C307
27p
R305
68
C308
100µ
C306
22p
R304
22k
820
R308
R306
10k
MUTE
SK 302
+6
R307
10k
T 301
0
SIG
RET
SCR
R 342
1k
R312
220k
D304
BAW 62
IC 304
1/2 MC 1458
D305
BAW 62
R314
1k
R365
100k
C310
10µ
100k
R313
IC 304
1/2 MC 1458
D309
BAW 62
R323
22k
R 316 15k
R 317 10k
R 319 12k
R 321 1k5
R 315 4k7
R 318 1k2
R 320 1k8
R 322 120
D306 BAW 62
D307 BAW 62
D308 BAW 62
SK 301a
A+B
SK 301b
AUX
SK 301c
PFL
MONITOR SELECT
(INTERLOCKING)
47k
R331
R362a
LOG
2k2
C315
3µ3
47k
R332
IC 306
NE 5534 N
C317
27p
R338
68
C321
100µ
R340
10k
C319
22p
R336
10k
820
R334
MONITOR
LEVEL
R363a
LOG
2k2
HEADPHONE
LEVEL
R363b
LOG
2k2
R362b
LOG
2k2
C316
3µ3
R333
47k
IC 307
NE 5534 N
C318
27p
R339
68
C322
100µ
R341
10k
C320
22p
R337
10k
820
R335

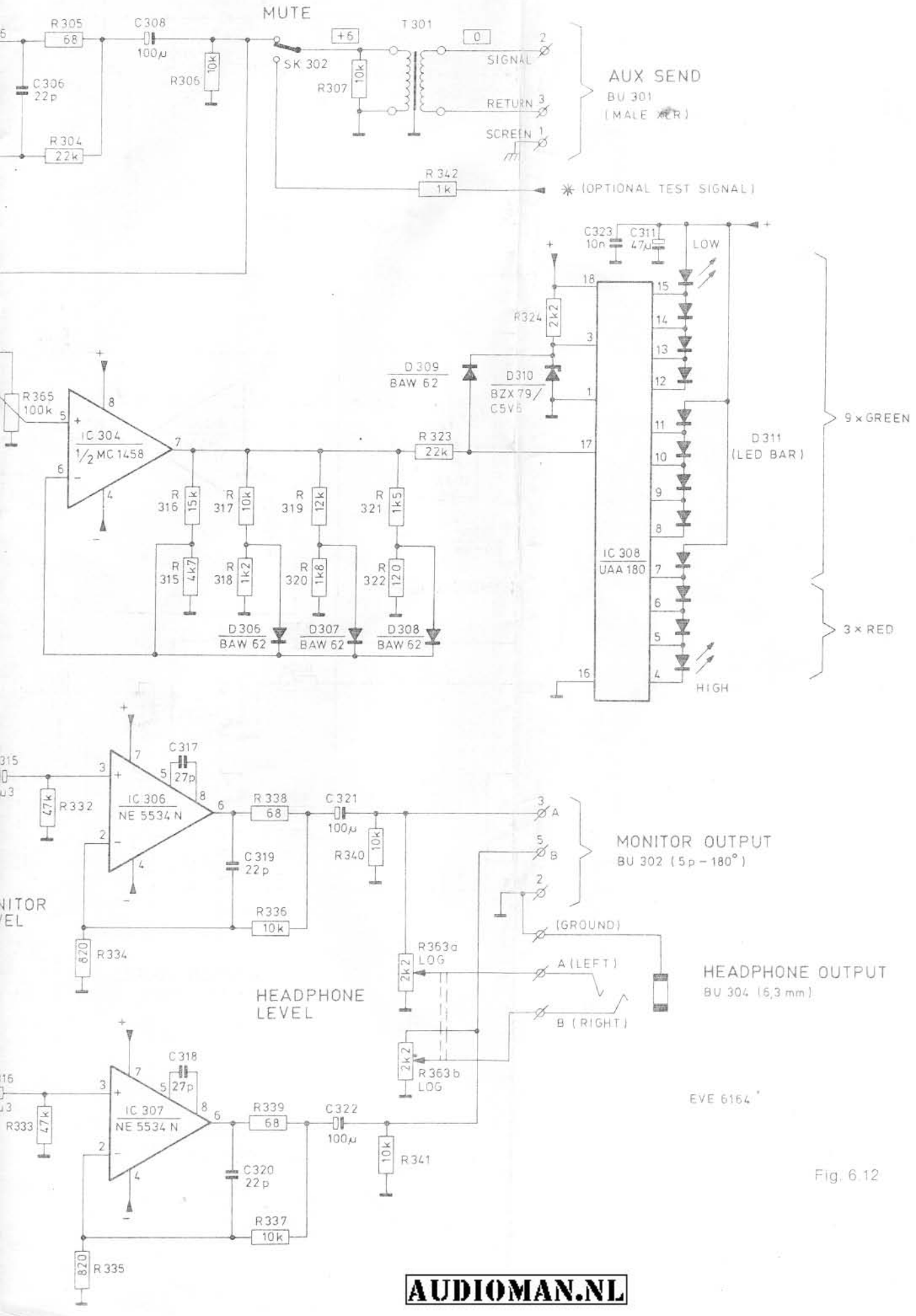


Fig. 6.12