SCAMP

High Pass **SO5**
Low Pass **SO6**

Dynamic Noise Filter

★ SELECTIVE LOW LEVEL ATTENUATION

★ DYNAMIC OR STATIC FILTERING

★ HIGH—PASS AND LOW—PASS VERSIONS

★ 0—20dB/OCT DYNAMIC SLOPE

These units enable the treatment of signal without change of level; the filter slope is programme controlled with an adjustable threshold to determine the point at which the slope commences moving from the maximum pre-set on the slope range control.

The threshold is adjusted so that the response becomes flat as soon as there is signal content to mask the noise. Units can operate imperceptibly even on classical material. There are no colouration effects due to change of slope.

Model S05 is the High—pass version and is ideal for reducing hum and rumble. Three turn-over frequencies of 100, 200 and 400Hz have been chosen.

Model S06 is a Low—pass system and is suitable for attenuating tape and general system noise (particularly electronic instruments and when reproducing LF signal) Turnover frequencies are 2, 4 and 6kHz.

Slope control side-chains are frequency selective so as to respond primarily to signals within the operating band. An input change of some 30dB is required to move the slope from 20dB/oct to a flat response.

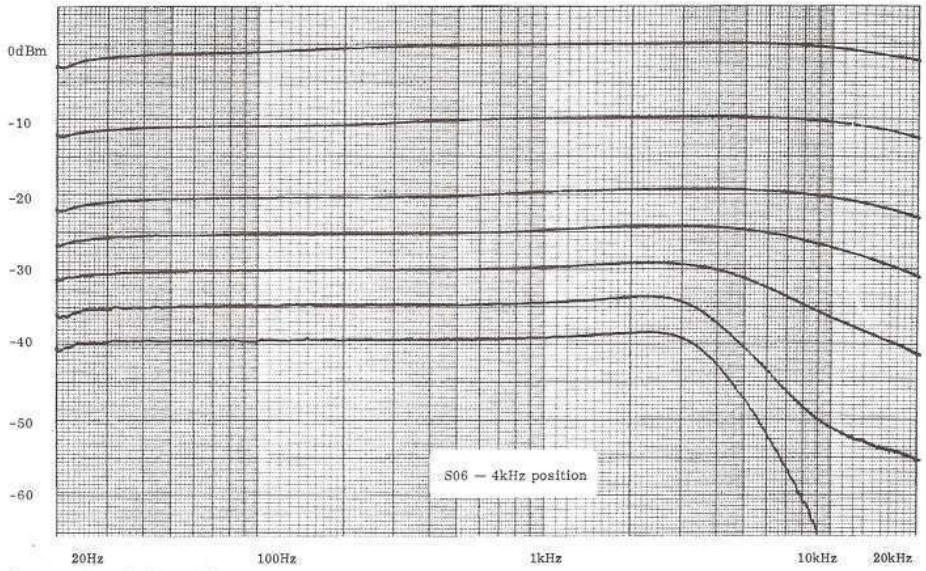
Gating Mode: Units can also operate on the full programme content and give upto 40dB attenuation. The slope range then sets maximum attenuation from 0 to 40dB.

Dual indicator lights show changing state of attenuation and slope variation.

audio & design (recording) ltd.
84 OXFORD ROAD, READING RG1 7LJ, ENGLAND

In operation, the slope range control is adjusted (with the threshold turned down) for optimum noise reduction using any of the three turn-over frequencies. The slope selected will of course also depend on the maximum permissable frequency loss at low level. The threshold control is then increased until the filter is opening on higher level signal levels (indicated by the green light). The exact point will be determined by the onset of noise masking — i. e. frequencies in the area will successfully mask the increasing noise previously attenuated at low level by the filter. A medium attack time will probably be found most successful coupled with a fast release.

The graph shows the 4kHz position on the S06 unit. Of course the threshold levels are variable and the maximum rate of slope can be pre-set to anything between 0dB and 20dB/oct. The slight rising response before turn-over is more emphasised on the 6kHz position and improves the subjective effect on the low level signal. In the 2kHz position the response remains quite flat prior to roll-off.



SPECIFICATION:

INPUT:	10k ohm balanced — unity gain
OUTPUT:	1 ohm balanced (6dB gain or unity option)
DISTORTION:	0.05% @ 1kHz THD
RESPONSE:	±1 and -3dB (worst condition) 20Hz—20kHz
NOISE:	-93dB ref +8dBm
THRESHOLD:	-26dBm and above (DNF); -35dBm (Gate)
SLOPE:	DNF: filter variable 0—20dB/oct Gate: 20:1 ratio
RANGE:	Gate mode — 20dB / 40dB
FORMAT:	Card module 1 x 8" for SCAMP rack system
POWER:	±30v rough DC (stabilised on board)
CODING:	Model S05 - High Pass T/O f. 100, 200, 400Hz Model S06 - Low Pass T/O f. 2, 4, 6kHz.

SCAMP

High Pass S05
Low Pass S06

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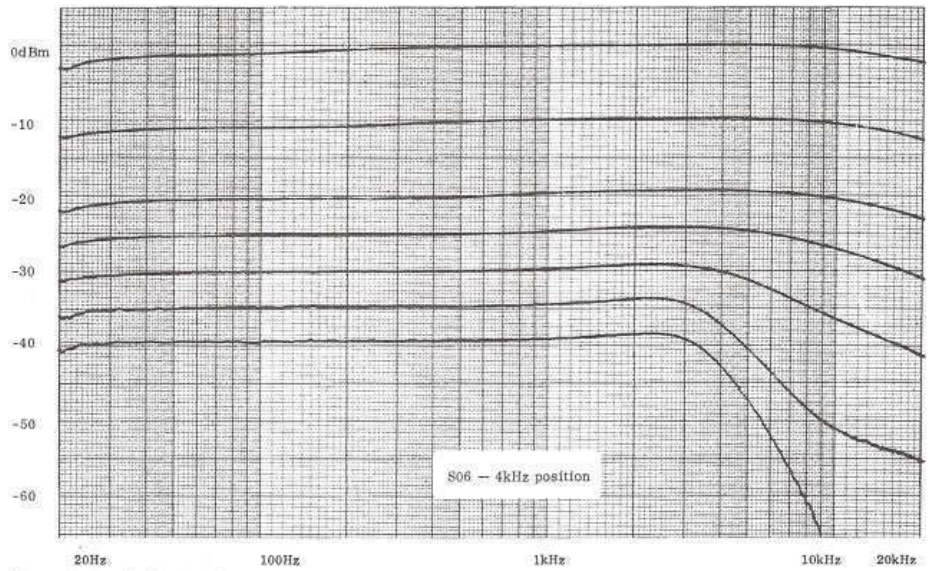
The graph shows the 4kHz position on the S06 unit. Of course the threshold levels are variable and the maximum rate of slope can be pre-set to anything between 0dB and 20dB/oct. The slight rising response before turn-over is more emphasised on the 6kHz position and improves the subjective effect on the low level signal. In the 2kHz position the response remains quite flat prior to roll-off.



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NOISE FILTERS

3. TECHNICAL SECTION

3.1 Technical Specification

INPUT:	10kΩ balanced — unity gain
OUTPUT:	1Ω balanced (6dB gain or unity option)
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RESPONSE:	±1 and -3dB (worst condition) 20Hz – 20kHz
NOISE:	-93dB ref + 8dBm
THRESHOLD:	-30dBm and above (DNF); -35dBm (Gate)
SLOPE:	DNF: filter variable 0 – 18dB/oct
	Gate: 20:1 ratio
RANGE:	Gate mode 20dB/40dB
FORMAT:	Card module 1in. x 8in. for SCAMP rack system
POWER:	±30v rough DC (stabilised on board)
CODING:	Model S 05 — High Pass T/O frq. 100, 200. 400Hz
	Model S 06 — Low Pass T/O frq. 2, 4, 6kHz.

3. TECHNICAL SECTION

3.2 Module Connections

1	+ Ve in
2	-Ve in
3	0v
4	0v
5	Stereo link S 05
6	Stereo link S 06
7	+ 48v Phantom Supply
8	0v Phantom Supply
9	Stereo link S 01
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	Output + phase
20	Output -phase
21	Chassis earth
22	
23	
24	
25	Input + phase
26	Input -phase
27	Chassis earth
28	
29	
30	
31	
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Input Connections

From *balanced*/floating source: Connect + and -phase as normal.

From *unbalanced*source: Connect - phase to signal earth of source, + phase to signal output of source, earth to chassis earth of source.

Output Connections

To *balanced*/floating load: Switch on board to *'BAL'*, connect + and - phase and chassis earth as normal.

To *unbalanced* load: Switch on board to *'UNBAL'*. Connect - phase to signal earth of load, + phase to signal input of load, earth to chassis earth of load.

N.B.. Tracks 34 through 45 should be cut with a track cutter between channels.

3. TECHNICAL SECTION

3.3 Setup Procedure

3.3.1 Common Mode Rejection

Input Amp

Set front panel controls:

System out.

i) Feed in 0dBm @ 1kHz on Pin 27 -0V and 25 Phase.

ii Connect Phase and inverted inputs together (pins 25 and 26).

iii) Adjusting pre-set VR2, read output to measure -70dBm or better.

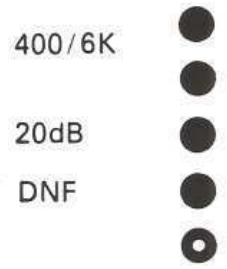
iv) Increase frequency to 10kHz and check output measures -50dBm or better.

v) Re-connect inputs for normal operation.

3.3.2 Rectifier Balance

Set front panel controls:

Attack Sw	F
Release Pot	F
Slope Pot	18dB/Oct
Threshold Pot	Low



i) Feed in 0dBm @ 1kHz for S 06, @ 300Hz for S 05

ii) Back off threshold pot until rectifier is out of saturation.

iii) Balance rectifier wave form via pre-set VR4, measure at junction of R105 & R106.

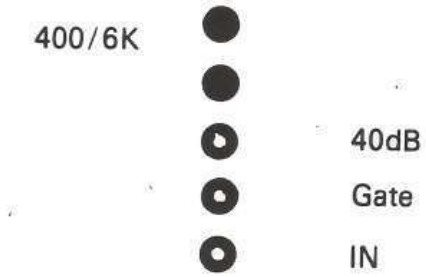
3. TECHNICAL SECTION

3.3 Setup Procedure ctd

3.3.3 Photocell Bias

Set front panel controls:

Attack Sw	F
Release Pot	S
Slope	18dB/Oct
Threshold	High



i) Feed in 0dBm @ 1kHz.

ii) Adjusting pre-set VR6 measure output to be -40dBm, with pre-set No5 fully clockwise.

iii) Switch Range from 40dB to 20dB, check output rises to -20dBm.

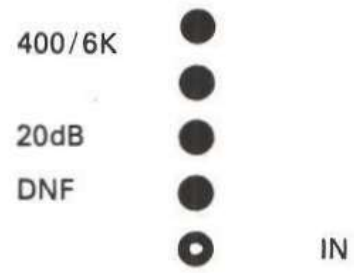
3 TECHNICAL SECTION

3.3 Setup Procedure ctd

3.3.4 DNF Sections

Set front panel controls:

Attack Sw	F
Release	F
Slope	18dB/Oct
Threshold	High



S 06	i)	Feed in 0dBm @ 6K5. Read output to measure -3dBm.
	ii)	Change frequency to 20kHz. Read output to measure -37 to -42dBm.
	iii)	Check each of the roll-off frequencies in the same manner.
	iv)	Feed in -20dBm.
	v)	Increase threshold to low.
	vi)	Adjust pre-set VR7 so that output just starts to drop 0.25dB.
S 05	i)	Feed in 0dB @ 400Hz. Read output to measure -3dBm.
	ii)	Change frequency to 50Hz, read output to measure -20 to -25dBm.
	iii)	Check each of the roll-off frequencies in the same manner.
	iv)	Feed in -20dB.
	v)	Increase threshold to low.
	vi)	Adjust pre-set VR7 so that output just starts to drop 0.25dBm.
Slope		Return Slope pot from 18dB/Oct to out, making sure filter output rises to unity in a linear fashion.

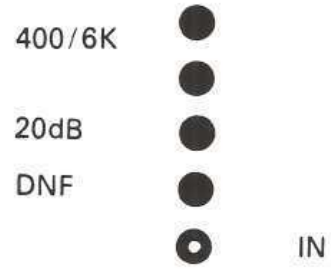
3 TECHNICAL SECTION

3.3 Setup Procedure ctd

3.3.5 Lamps

Set front panel controls:

Attack Sw	F
Release	F
Slope	18dB/Oct
Threshold	High

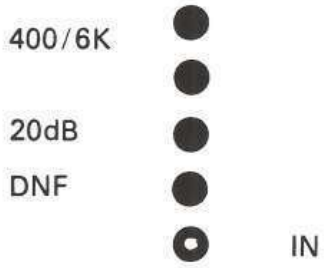


Feed in 0dB @ 20kHz for S 06
@ 100Hz for S 05
Increase threshold until output reads -10dBm. Adjust pre-set VR8 until red/amber and green lights are on by equal amounts. Decrease threshold and check green light is totally extinguished.

3.3.6 Side Chain Filters

Set front panel controls:

Attack Sw	F
Release Pot	F
Slope Pot	18dB/Oct
Threshold	Low



i) Feed in 0dB @ S 06 — 6kHz
S 05 — 400Hz.

ii) Increase Threshold until both lamps are on.

iii) Decrease frequency — red lamps comes on, green light goes off (S 06 only).
Increase frequency — amber light comes on, green light goes off (S 05 only).

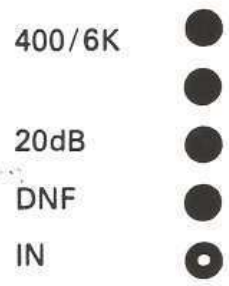
iv) Check off each of the Roll-off frequencies in the same manner.

3.3 Setup Procedure ctd

3.3.7 Attack

Set front panel controls:

Attack Sw	F
Release Pot	F
Slope Pot	18dB/Oct
Threshold	Low



i) Feed in 0dB @ 20kHz (S 06)
@ 100Hz (S 5).

ii) Reduce threshold until output drops by 15dB.

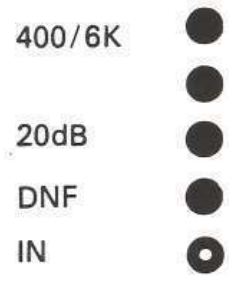
iii) Switch attack to 'S' — output should recover 1 — 2dB for S 05,
1 — 2dB for S 06.

iv) Switch Attack to 'M' — output should recover 1 — 2dB for S 05,
1 — 2dB for S 06.

3.3.8 Release

Set front panel controls:

Attack Sw	F
Release	F
Slope	18dB/Oct
Threshold	Low



i) Feed in 0dBm @ 20kHz (S 06), @ 100Hz (S 05).

ii) Reduce threshold to High — output should follow.

iii) Increase Release to 'S'.

iv) Increase Threshold to Low.

v) Reduce Threshold to High — output should drop slowly and should take approx 6 Secs to fully attenuate the output.

3 TECHNICAL SECTION

3.3 Setup Procedure ctd

3.3.9 Bal-Unbal Mode

i) Switch to Bal and Output (+ Phase) will be 6dB down on input, ie 0dBm in -6dBm out.

ii) Inverted output will be 6dB down on input, ie 0dBm in, — -6dBm out.

iii) Switch to UNBAL, + Output (Phase) will be at unity, ie 0dBm in — 0dBm out.

iv) Inverted output will be at 0V, ie grounded.

3.3.10 Frequency Response

Attack Sw	F
Release Pot	F
Slope Pot	Out
Threshold Pot	Low

400/6K ●

●

40dB ●

DNF ●

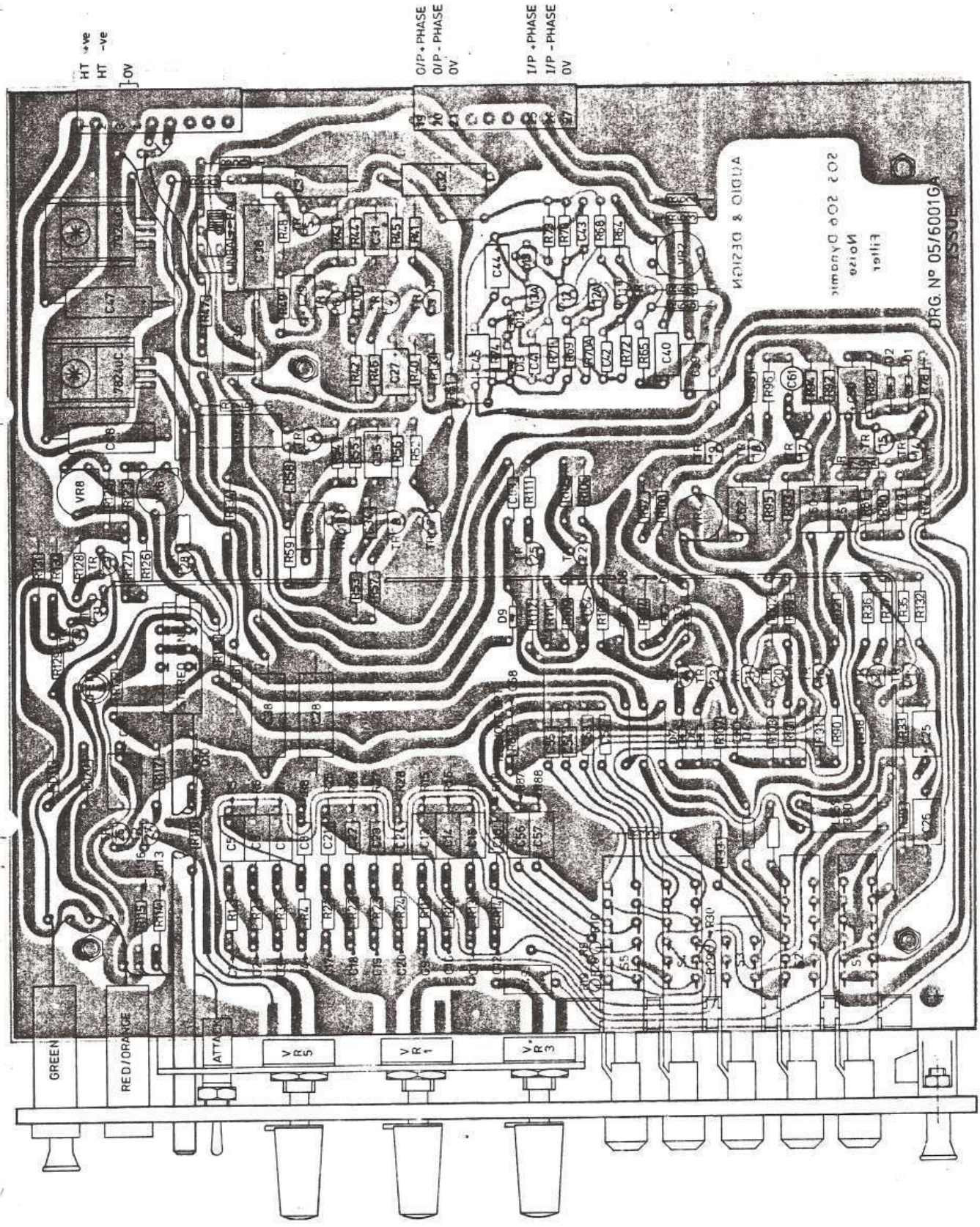
◉ IN

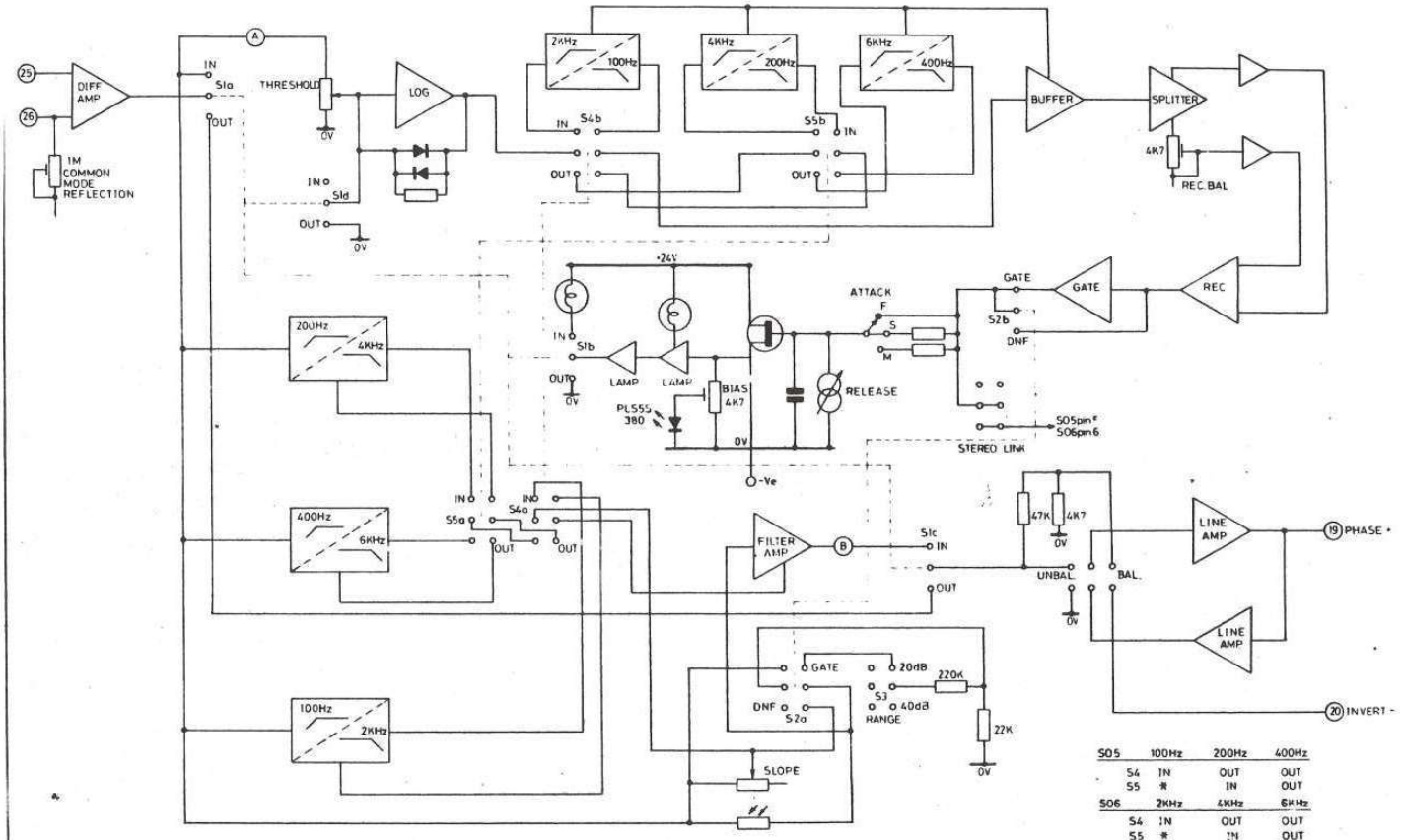
i) Feed in 0dBm @ 1kHz.

ii) Output should be 0dBm (Ref).

iii) Decrease frequency, sweeping to 20Hz. Output should not vary by more than +0 — 0.5dB.

iv) Increase frequency, sweeping to 25kHz. Output should not vary by more than +0 — 0.5dB.





S05	100Hz	200Hz	400Hz
S4	IN	OUT	OUT
S5	*	IN	OUT
S06	**2KHz**	**4KHz**	**6KHz**
S4	IN	OUT	OUT
S5	*	IN	OUT

* CAN BE EITHER 'IN' OR 'OUT'

ISS	ALTERATION	USED ON
A		

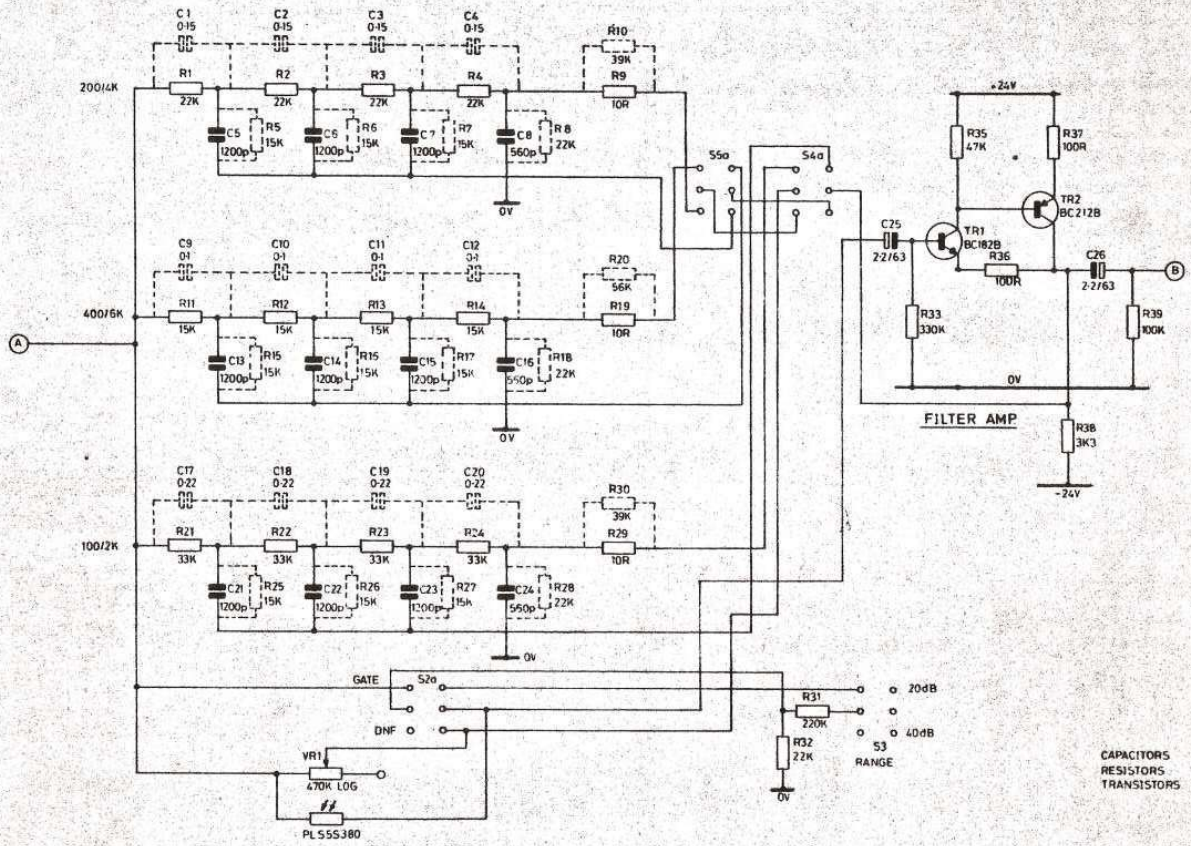
MATERIAL — FINISH — SCALE — BOM

AUDIO & DESIGN RECORDING
CRANBOURNE ASSOCIATES

DATE 6.12.77 — SIG. — ISS. 1

TITLE S05/S06 SCHEMATIC — A2

DRG No. 05/6002CD



ISS	ALTERATION	USED ON
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MATERIAL	FINISH	SCALE
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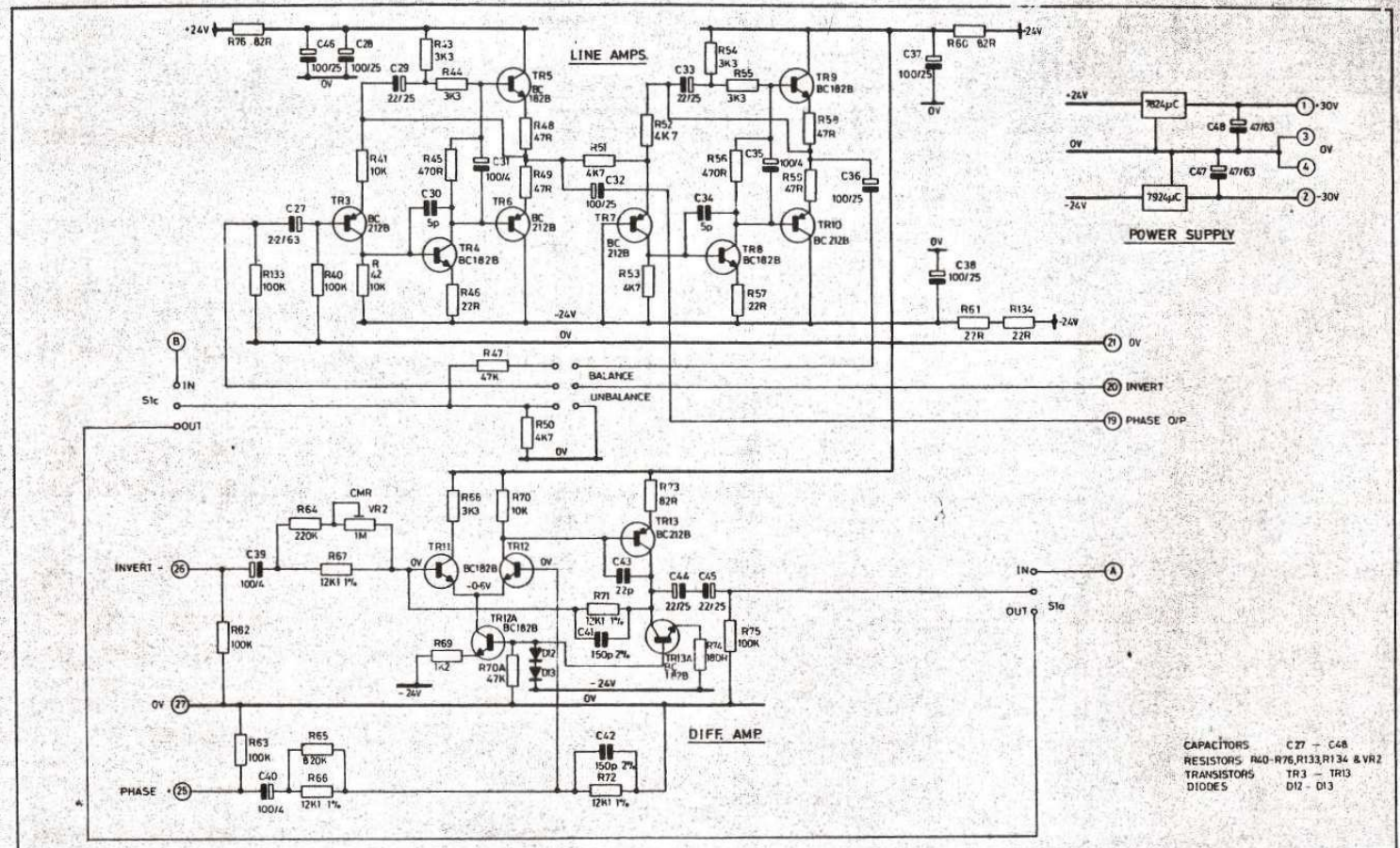
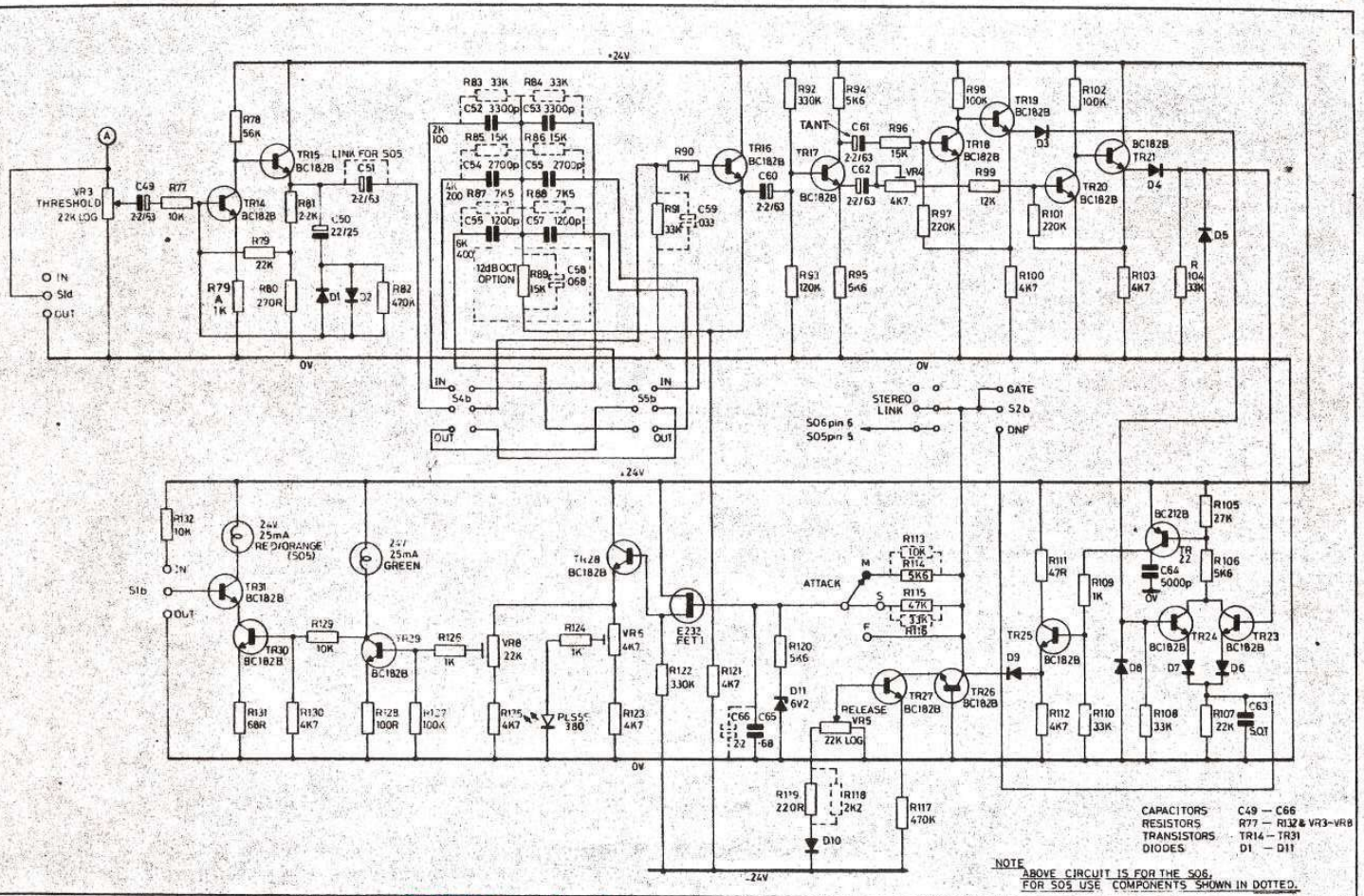
AUDIO & DESIGN RECORDING
CRANBOURNE ASSOCIATES

DATE	SIG.	ISS.
6.12.77	—	1

TITLE DNF-S06/S05 FILTERS
CIRCUIT DIAGRAM A2
DRG No 05/6003CD SHT 1 OF 3 SHTS.



A ISS	ALTERATION	USED ON	MATERIAL	FINISH		SCALE				TITLE	DNF S06/S05 DIFF.AMP/LINE AMPS CIRCUIT DIAGRAM A2
			AUDIO & DESIGN RECORDING CRANBOURNE ASSOCIATES			APP. BGM					
						CHKD					
						DATE	6.12.77	SIG.	1 ISS.	DRG No	05/6003CD SHT. 2



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MATERIAL	FINISH	SCALE
—	—	BGM

AUDIO & DESIGN RECORDING
CRANBOURNE ASSOCIATES

DATE	SIG.	ISS.
6.12.77	—	1

TITLE
DNF-S06/S05
SIDE CHAIN
CIRCUIT DIAGRAM A2
DRG. No.
05/6003CD SHT.3