

MAIN FADER DESK PANELS PA8/261A-D

Introduction

The PA8/261 is a Type-D sound equipment module designed to provide master control facilities for all-programme and ancillary circuits. Types A and B are for use in mono desks; Types C and D were designed for use in stereo desks, but have been superseded by the PA8/323A and PA8/323B, which are designed for use in all Radio desks, mono or stereo.

The equipment is mounted in a CH1/35 chassis having overall dimensions of 16 by 2¼ by 9 inches, and weighs 8 lb.

General information on the use of this module in specimen installations is given in Instruction P.9.

General Description

Mono: Types A and B (Fig. 1)

Three programme inputs (A, B and C) are provided. Inputs A and B are connected to similar circuits, each controlled by separate faders. These inputs are normally commoned, with the two faders ganged, and they provide main and clean feed outputs. For split desk working a key is operated which separates the two circuits and the faders are unganged mechanically, and they then control the two halves of the desk independently. The third input (C) feeds output C and is also connected to either output A or output B by a relay. For multiway working the outside sources are connected to the C input and local sources to inputs A and B. Thus the distant contributions are routed into the main programme output at a point beyond the main fader, which only controls the programme originating locally. Output A gives a complete programme mixture, output B gives local material only and output C gives distant material only. The main clean feed output is available for sending to the distant contributor.

The following facilities are common to Types A and B:

- Fading under normal and split working conditions.
- Prehear of main and clean feed inputs.
- Main foldback volume control and cut key.
- Prehear measuring and listening outputs, the latter having a volume control.
- Amplifier changeover key.
- Split working key.
- Noise injection when using prompt cut.

Additionally, the two assemblies have as alternative facilities:

- Type A: Public address volume control and cut key with provision for transfer of the control to a remote point.
- Type B: Main cue key and lamp.

Stereo: Types C and D (Fig. 2)

Four programme inputs, (A, B, C and D) are provided. Inputs A and B are connected to similar

circuits controlled by ganged faders and are used for stereo A and B channels. For mono working a key is operated which parallels the inputs to the two circuits, and both circuits take an (A + B) signal. An incoming stereo contribution from a remote source is connected to inputs C and D, and is then routed into the main output at a point beyond the main fader, which only controls the local material.

The following facilities are common to Types C and D:

- Fading under stereo or mono conditions.
- Prehear of A and B inputs.
- Main foldback volume control and cut key.
- Prehear measuring and listening outputs, the latter having a volume control.
- Stereo/Mono key.
- Noise injection when using prompt cut.

Additionally the two assemblies have as alternative facilities:

- Type C: Main public address volume control and cut key.
- Type D: Main cue key and lamp.

R.S.A. Insertion

On all four types, the A and B programme paths and the public address and foldback paths may all be routed through the R.S.A. insertion jackfield.

Controls

1. PA8/261A

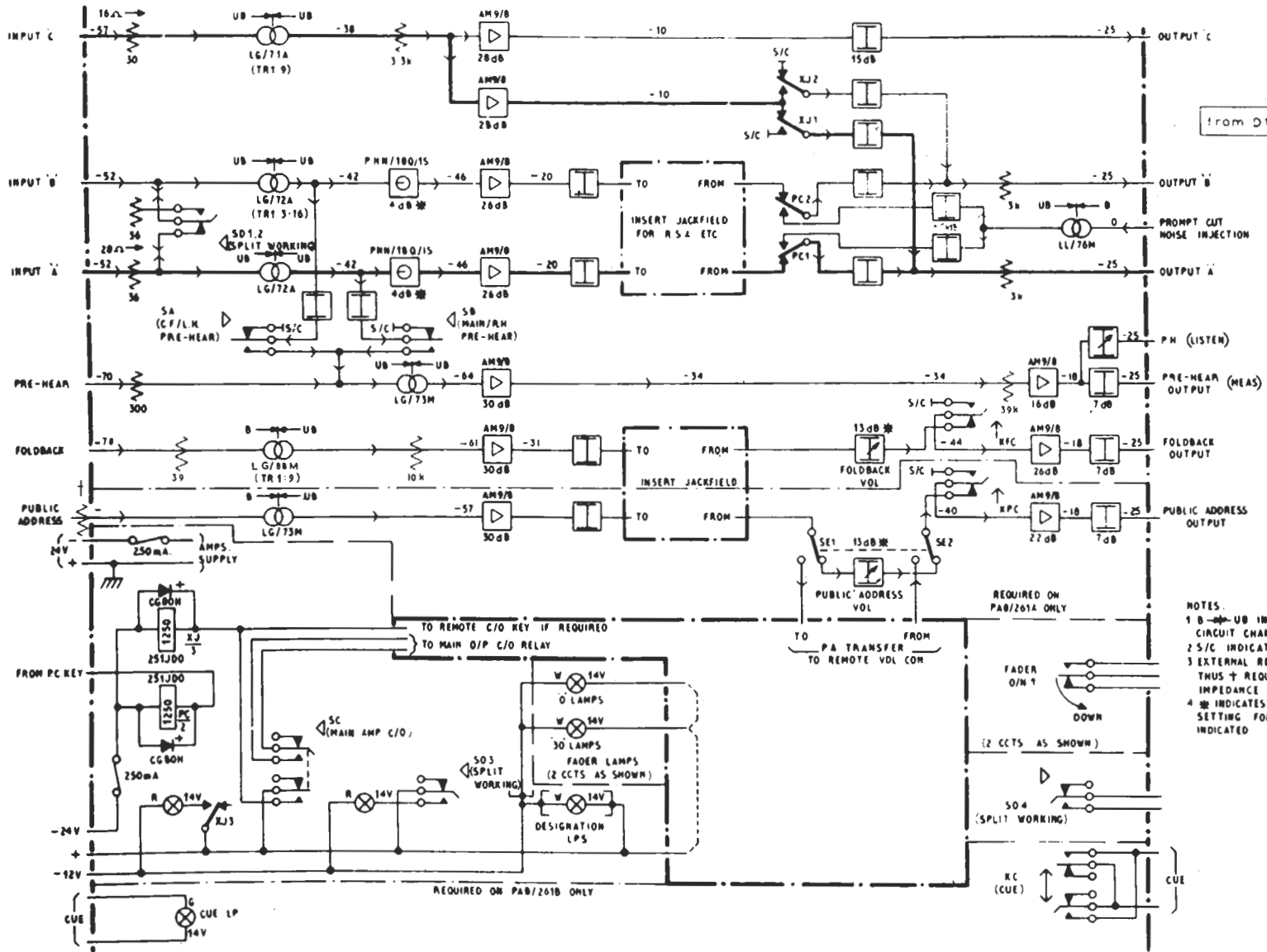
The controls available on the front panel, from top to bottom, are:

- Illuminated pushbutton key to change over A and B circuits
- Illuminated pushbutton key to separate inputs A and B for split working.
- Prehear volume control, a 5-kilohm carbon-track type.
- Foldback volume control, a 5-kilohm carbon-track type, and foldback cut key.
- Miniature toggle switch for local/remote switching of the public address volume control.
- Public address volume control, a 5-kilohm carbon-track type, and cut key.
- Two faders PNN/18Q/1S.
- Nonlocking pushbutton keys for prehear selection, on the left for input B (clean feed) and on the right for input A (main).

2. PA8/261B

The public address controls are replaced by a double-throw locking/nonlocking cue key and lamp.

from D1B971 A3 iss. 4



- NOTES.
- 1 B-UB INDICATES BALANCED CIRCUIT CHANGES TO UNBALANCED
 - 2 S/C INDICATES SHORT CIRCUIT
 - 3 EXTERNAL RESISTORS INDICATED THUS + REQUIRED TO MAKE IMPEDANCE 300 Ω
 - 4 Ω INDICATES NORMAL CONTROL SETTING FOR INPUT LEVEL INDICATED

Fig. 1. Basic Circuit of the PAB/261A and PAB/261B

3. PA8/261C

The controls are:

- Illuminated pushbutton key to connect inputs A and B for mono working.
- Prehear volume control.
- Foldback volume control and foldback cut key.
- Public address volume control and cut key.
- Two faders PNN/18Q/1S, ganged.
- Nonlocking pushbutton keys for prehear selection of the A and B signals.

4. PA8/261D

The public address controls are replaced by a double throw locking/non-locking cue key and lamp.

Internal Equipment

The equipment mounted inside the chassis is the same for Types A and C. On the left-hand side are five amplifiers AM9/8 (in order from the bottom, A1 to A5), relays XJ and PC, and input transformers T1 and T2 (LG/72A) mounted in a common monumental box. On the right-hand side are five amplifiers AM9/8 (A6 to A10), T6 (LG/73M), T5 (LG/73M), T3 (LG/76M), T7 (LG/71A) and T4 (LG/73M).

On panels PA8/261B and D the public address circuit amplifiers A9 and A10, and transformer T6, are not fitted.

Circuit Description

Programme Chain: Types A and B (Figs. 1 and 3)

Inputs A and B are taken to two identical circuits and are normally paralleled by key SD. This key is operated to separate the circuits for split desk working. In this condition the key connects a 36-ohm terminating resistor across input B. A step-up input transformer LG/72A is followed by the main fader PNN/18Q/1S and amplifier AM9/8 (A3, A6). The inputs for the prehear circuit are taken from the secondary side of the input transformers through keys SA and SB. After the amplifier the signal is taken through the R.S.A. insertion jackfield, over the contacts of the prompt-cut relay PC to the panel output terminals. Noise at zero level, attenuated by a 60-dB attenuator, may be connected to the output in place of programme when the prompt-cut relay is operated. At the inputs and outputs of amplifiers A3 and A6 there are coupling components to reduce switching clicks due to attenuator or relay contacts.

Input C is taken to a step-up input transformer LG/71A and then splits into two branches, one through an amplifier AM9/8 (A1) and 15-dB attenuator to the C output of the panel, and the other through an amplifier AM9/8 (A2) to output A or output B according to the setting of relay contacts XJ1 and XJ2, operated by the amplifier changeover key SC. Control of the signal from output C is exercised at a point in the chain before the main module.

Programme Chain: Types C and D (Figs. 2 and 4)

Inputs A and B are taken to circuits similar to those in the Type A and B modules, with the exception that the two inputs are connected together by the operation of switch SD, not separated. Inputs C and D are taken through input transformers LG/71A (T7 and T8) to amplifiers AM9/8 (A1 and A2) the outputs of which are connected across outputs A and B respectively.

Foldback

An input from the foldback busbar is taken to an input transformer (T5) and amplifier AM9/8 (A7). After the amplifier, there are connectors to and from the R.S.A. insertion jackfield, followed by the foldback volume control, the circuit cut key (KFC) and a second amplifier (A8) and output attenuator.

Public Address

On panel PA8/261A the public address circuit is identical to that for foldback except that there is a switch which cuts out the panel volume control and connects in place a control mounted remotely. On the panel PA8/261C the public address circuit is identical to the foldback circuit.

Prehear

The prehear circuit takes an input from the prehear busbar and it may also be connected to input A or input B by the operation of keys SB or SA. There are two separate prehear outputs, one for use as a measuring output and one for listening purposes. The volume control is at the output of the second amplifier and operates only on the listening output.

Switching Circuits

Fader off-normal switches are provided for studio loudspeaker switching, and cue light switching is provided on panels B and D. The prompt cut relay is energised from the studio prompt cut circuit. Further information on the wiring of this circuit is given in the instruction for panel PA8/267. Relay XJ (panels A and B), which transfers the signal on input C from output A to output B, is operated by the *Main Amp. C/O* key SC and provision is made for this relay to be operated remotely. External changeover of outputs A and B is also provided. Key SD which parallels or separates inputs A and B has an additional set of make contacts for switching purposes external to the module.

Tests

The levels under normal working conditions are given on Figs. 1 and 2. Tests on the PA8/261 are best carried out using a test panel TE1/13.

Modifications to PA8/261 (Alternative Amplifiers)

The amplifier AM9/8 has been superseded by the AM5/7, and later models of the PA8/261 series may be fitted with the newer amplifiers.

WWM(X) 12/70

from D 25613 A3

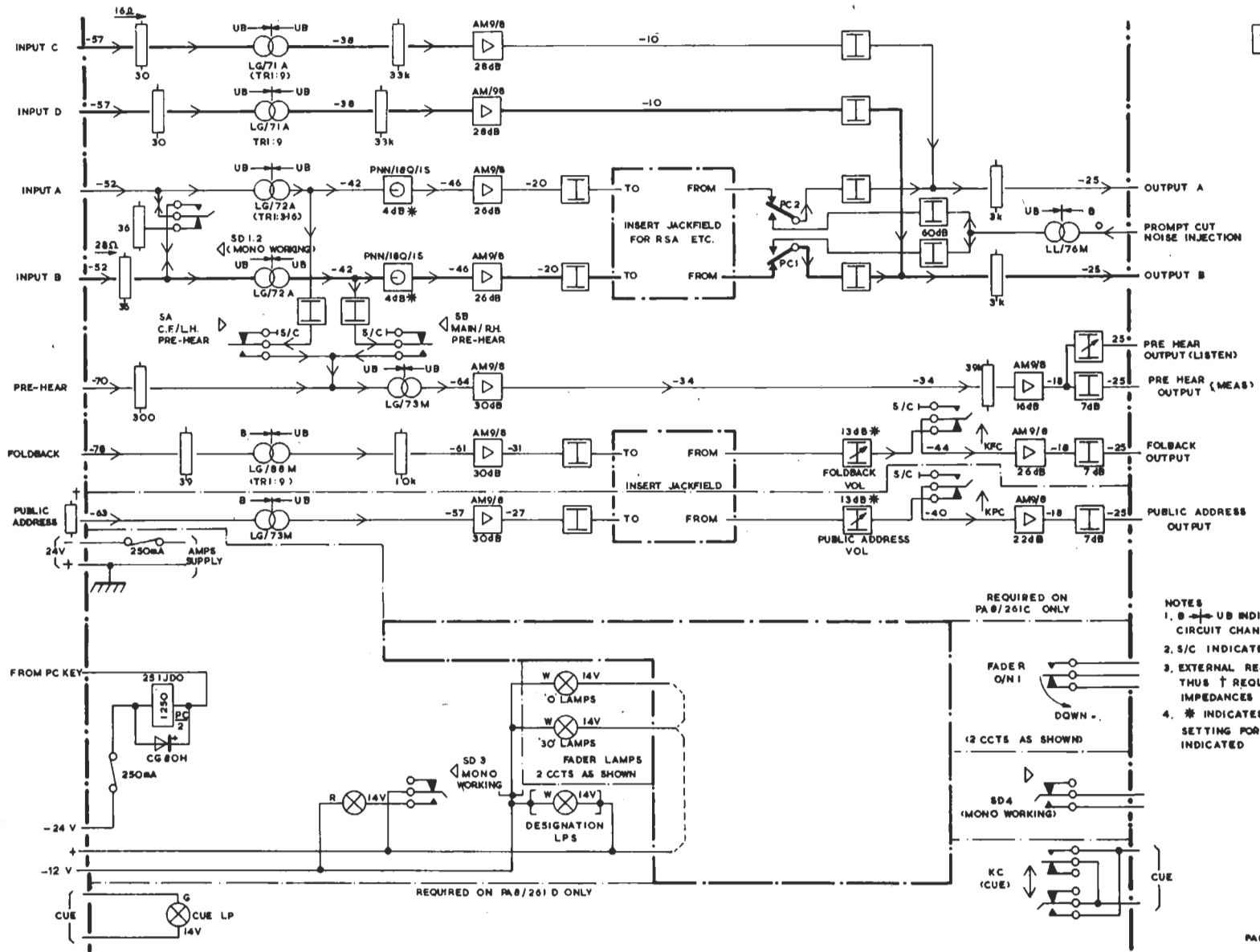


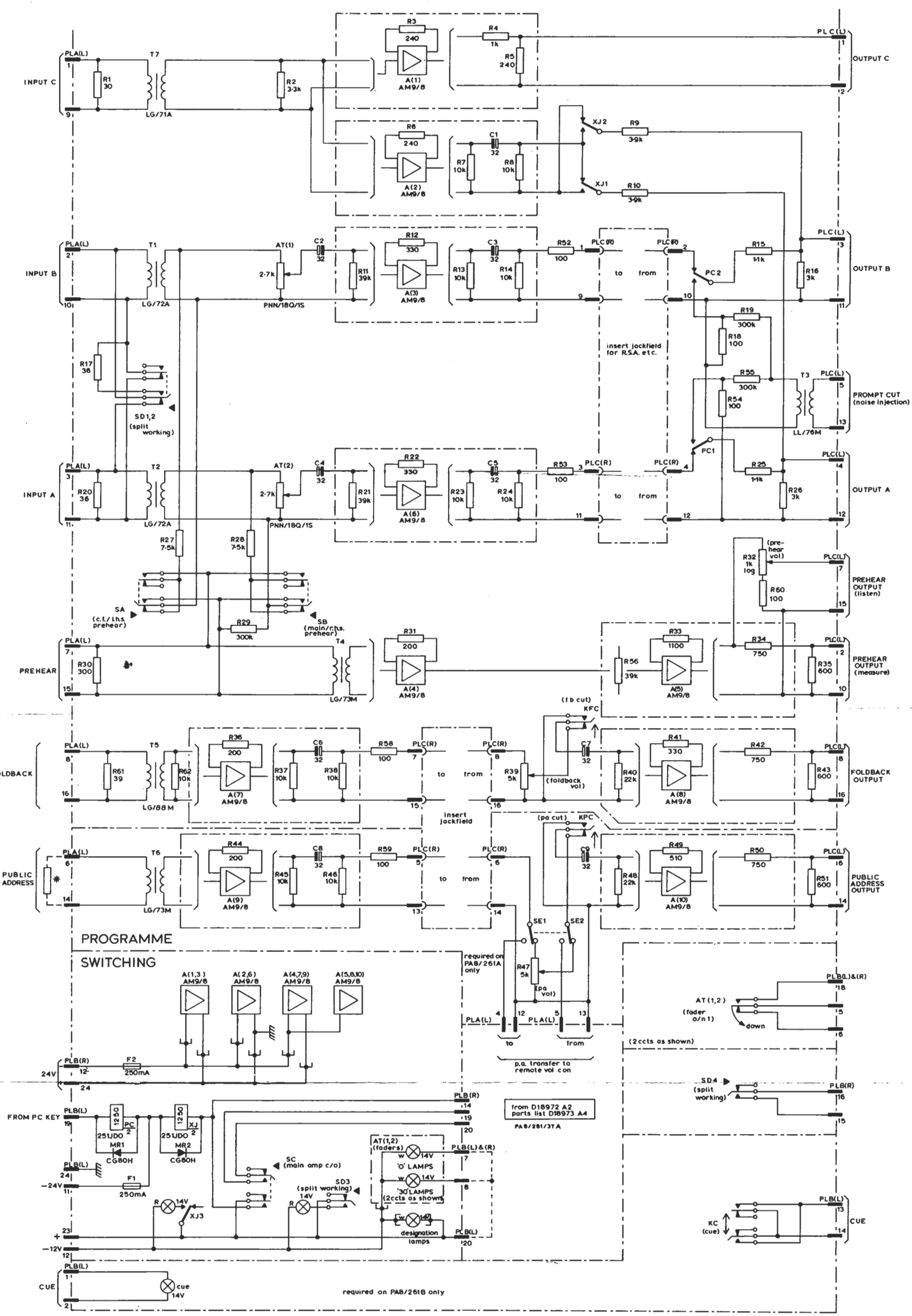
Fig. 2. Basic Circuit of the PA8/261C and PA8/261D

- NOTES
1. B \leftrightarrow UB INDICATES BALANCED CIRCUIT CHANGES TO UNBALANCED
 2. S/C INDICATES SHORT CIRCUIT
 3. EXTERNAL RESISTORS INDICATED THUS † REQUIRED TO MAKE IMPEDANCES 300Ω
 4. * INDICATES NORMAL CONTROL SETTING FOR INPUT LEVEL INDICATED

REQUIRED ON PA 8/261C ONLY

REQUIRED ON PA 8/261D ONLY

PA8/261/2 A

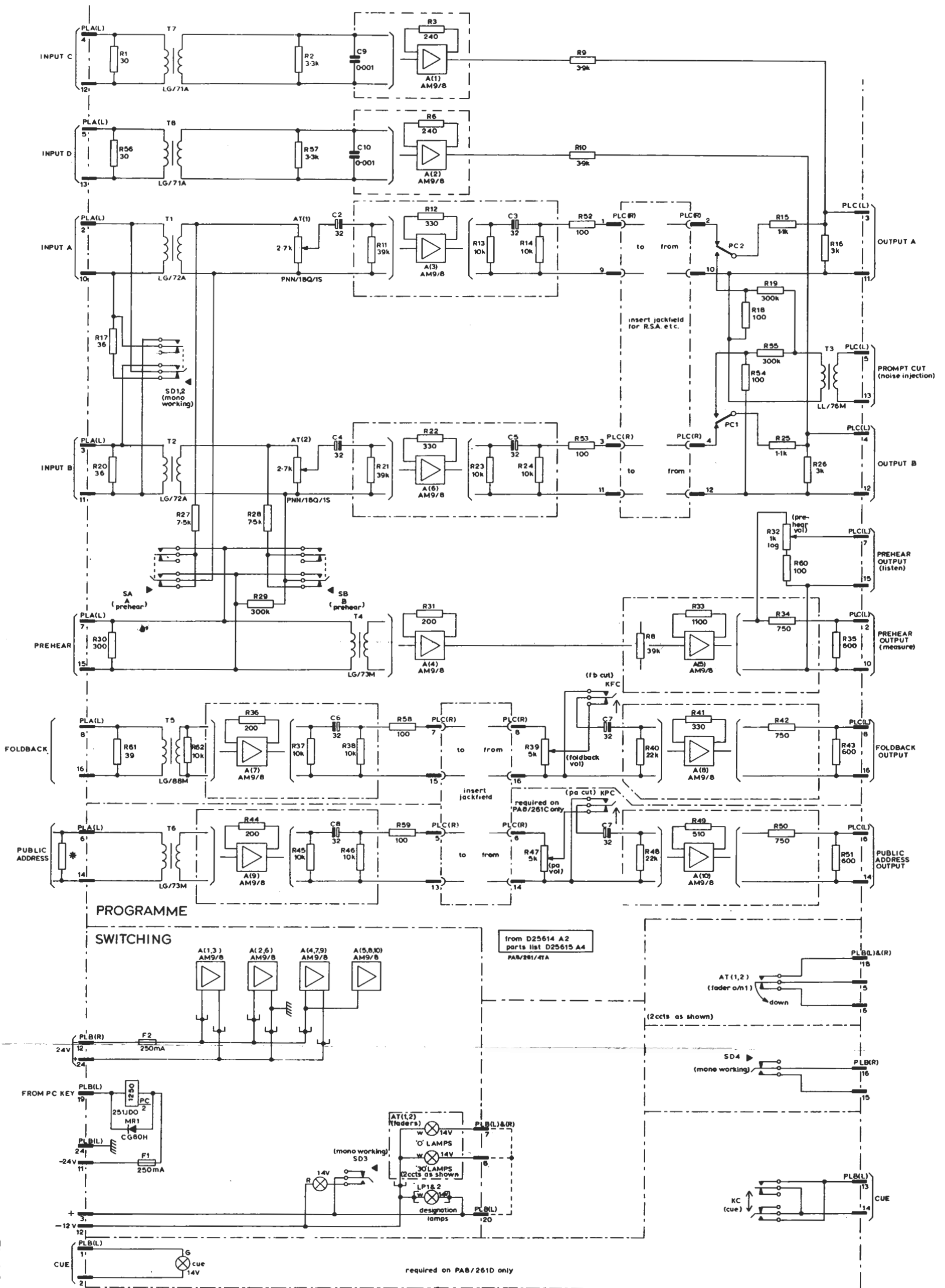


Notes. 1 (L) in circuit reference indicates LHS of module & (R) refers to RHS.

2 Resistors indicated thus * added externally to make impedance 300Ω.

required on PAB/261B only

from D18972 A2 parts list D18973 A4 PAB/281/3TA



Notes
 1 (L) in circuit reference indicates L.H.S. of module & (R) refers to R.H.S.
 2 Resistors indicated thus * added externally to make impedance 300Ω.

Fig. 4. Circuit of PA8/261C & D

TEST PROCEDURE**Apparatus Required**

Portable Routine Line Tester RLT/1P
 Tone Source TS/10
 Repeating Coil
 Amplifier Test Meter ATM/1
 Attenuator AT/30
 Loudspeaker Unit LS5/1 or similar
 Amplifier AM9/5
 Oscilloscope
 Desk Panel Tester TE1/13 including connector
 cables TE1A/2A-G

D.C. Tests*General*

Plug the module to tester TE1/13 and apply power. It is recommended that the module should be d.c. tested completely before a start is made on further tests.

D.C. Feeds

Remove the *Meter Link* from the tester and insert a milliammeter capable of reading up to about 150 mA. The total feed current, shown on the meter, should

be about 120 mA.

Lamps

The designation lamps should light when the tester is powered. Connect B7 and B8 to B(L)20 to check the fader lamps.

Panels PA8/261A and PA8/261B:- Operate the *Split Working* and the *Main Amp. C/0* pushbuttons to check their associated lamps.

Panels PA8/261C and PA8/261D:- Operate the *Mono Working* pushbutton to check its associated lamp.

D.C. Test Schedule

Remove power from the tester TE1/13 and make resistance measurements on the module in accordance with the relevant schedule given in Table 1 or 2. Resistances above 10 kilohms should be measured with the routine line tester RLT/1P in the *A/E*, *B/E* and *A/B Insulation* modes; resistances below 10 kilohms should be measured in the *E-A-E*, *E-B-E* and *Loop R(A-B)* modes.

The connector cables, TE1A/2A-G, will be needed for these checks and measurements.

TABLE 1: PA8/261A AND PA8/261B

TE1/13 Jack Nos.	RLT/IP Mode			Relevant Module Control Settings
	E-A-E or A/E	E-B-E or B/E	Loop R or A/B	
A.1.9(L)	∞	∞	$\approx 3\Omega$	
A.2.10(L)	∞/∞	∞/∞	$\approx 4\Omega/9\Omega$	normal/split working
A.3.11(L)	∞/∞	∞/∞	$\approx 4\Omega/9\Omega$	normal/split working
A.6.14(L)	∞	∞	$\approx 35\Omega$	
A.7.15(L)	$300k\Omega/35\Omega$	$300k\Omega/0$	$\approx 35\Omega/35\Omega$	normal/operate l.h. and r.h. prehear
A.8.16(L)	∞	∞	$\approx 35\Omega$	
B.5.6(L&R)	∞/∞	∞/∞	$0/\infty$	fader down/fader up
B.5.18(L&R)	∞/∞	∞/∞	$\infty/0$	fader down/fader up
B.7.12(L)	∞	∞	$\dots\Omega$	
B.8.12(L)	∞	∞	$\dots\Omega$	
B.7.14(R)	∞/∞	∞/∞	$\infty/\dots\Omega$	normal/operate main amp. c/o
B.8.14(R)	∞/∞	∞/∞	$\infty/\dots\Omega$	normal/operate main amp. c/o
B.19.20(L)	∞/∞	∞/∞	$\infty/\dots\Omega$	normal/operate main amp. c/o
B.19.20(R)	∞/∞	∞/∞	$\infty/0$	normal/operate main amp. c/o
B.1.2(L)	∞	∞	$\dots\Omega$	(PA8/261B only)
B.11.19(L)	∞	∞	$\dots\Omega$	
B.11.23(L)	∞/∞	∞/∞	$\infty/\dots\Omega$	normal/main amp. c/o
B.24-(L&R)	0	∞	∞	
B.13.14(L)	∞/∞	∞/∞	$\infty/0$	normal/cue key operated (PA8/261B)
B.15.16(R)	∞/∞	∞/∞	$\infty/0$	normal/split working
C.2.10(R)	$\approx 5k\Omega$	$\approx 6.9k\Omega$	$\approx 4.1k\Omega$	dummy plug jack C(L)3.11
C.3.11(L)	$\approx 3.9k\Omega$	$\approx 6.9k\Omega$	$\approx 3k\Omega$	dummy plug jack C(R)2.10
C.5.13(L)	∞	∞	$\approx 60\Omega$	

TABLE 2: PA8/261C AND PA8/261D

TE/13 Jack Nos.	RLT/IP Mode			Relevant Module Control Settings
	E-A-E or A/E	E-B-E or B/E	Loop R or A/B	
A.2.10(L)	∞/∞	∞/∞	$4\Omega/9\Omega$	mono working/normal
A.3.11(L)	∞/∞	∞/∞	$4\Omega/9\Omega$	mono working/normal
A.4.12(L)	∞	∞	$\approx 3\Omega$	
A.5.13(L)	∞	∞	$\approx 3\Omega$	
A.6.14(L)	∞	∞	$\approx 35\Omega$	
A.7.15(L)	$300k\Omega/35\Omega$	$300k\Omega/0$	$\approx 35\Omega/35\Omega$	normal/operate C.F. l.h.s. or main r.h.s. prehear
A.8.16(L)	∞	∞	$\approx 35\Omega$	
B.1.2(L)	∞	∞	$\approx 30\Omega$	(PA8/261D only)
B.5.6(L&R)	∞/∞	∞/∞	$0/\infty$	fader down/fader up
B.5.18(L&R)	∞/∞	∞/∞	$\infty/0$	fader down/fader up
B.7.12(L)	∞	∞	$\approx 30\Omega$	
B.8.12(L)	∞	∞	$\approx 30\Omega$	
B.11.19(L)	∞	∞	$\approx 30\Omega$	
B.24-(L&R)	0	∞	∞	
B.13.14(L)	∞/∞	∞/∞	$\infty/0$	normal/cue key operated (PA8/261D only)
B.15.16(L)	∞/∞	∞/∞	$\infty/0$	normal/mono working
C.5.13(L)	∞	∞	60Ω	

A.C. Tests (Figs. 5 and 6)

Fig. 5 gives the a.c. test circuit for panels PA8/261A and B. Fig. 6 gives the circuit for panels PA8/261C and D. The following jack connections on tester TE1/13 are required for all tests described in the remainder of this Instruction. They may be made by means of connector cables TE1A/2A or the equivalent standard cords.

Jack to Jack

C(R)1.9 C(R)2.10
 C(R)3.11 C(R)4.12
 A(L)4.12 A(L)5.13
 C(R)7.15 C(R)8.16
 *C(R)5.13 *C(R)6.14

The last connection, marked *, is required for panels PA8/261A and C only.

Circuit Transmission Tests

Repower the TE1/13 and carry out circuit transmission tests in accordance with Tables 3 and 4.

TABLE 3

Module Code	Apply tone at -50 dB to jack	Condition	Use 50-k Ω amp det to measure at jack	Level (dB)	Tolerances (dB)		
					* 40 Hz	1 kHz	* 15 kHz
PA8/261 A and B	A(L)1.9	—	C(L)1.9	-18.4	± 0.2	± 0.2	± 0.3
		Main Amp C/O not operated.	C(L)4.12	-19.1	± 0.2	± 0.2	± 0.3
		Main Amp C/O operated.	C(L)3.11	-19.1	± 0.2	± 0.2	± 0.3
	A(L)2.10	CF Fader up. Split Working pushbutton operated	C(L)3.11	-20.1	± 0.2	± 0.2	± 0.3
		Faders up. Split Working button operated.	A(L)2.10	-50		± 0.1	
		Faders up. Split Working button not operated.	A(L)2.10	-48.9		± 0.1	
PA8/261 C and D	A(L)2.10	Faders up. Mono Working button not operated.	C(L)3.11	-20.1	± 0.2	± 0.2	± 0.3
		Faders up. Mono Working button operated.	A(L)2.10	-50		± 0.1	
		Faders up. Mono Working button not operated.	A(L)2.10	-48.9		± 0.1	

*Tolerances with respect to response at 1 kHz.

TABLE 4

<i>Module Code</i>	Apply 1 kHz at -50 dB to jack	<i>Condition</i>	Use 50-k Ω amp det to measure at jack	<i>Level (dB)</i>
PA8/261 A and B	A(L)2.10	Operate Split Working and CF prehear pushbuttons. Dummy plug jack A(L)7.15.	C(L)2.10	-24.5 \pm 0.4
	A(L)3.11	As for previous test, but now operate Main prehear button.	C(L)2.10	-24.5 \pm 0.4
PA8/261 C and D	A(L)2.10	Mono Working button operated. Operate A prehear button. Dummy plug jack A(L)7.15.	C(L)2.10	-24.5 \pm 0.4
	A(L)3.11	As for previous test but now operate B prehear button.	C(L)2.10	-24.5 \pm 0.4
		Main fader up. Split Working button operated.	C(L)4.12	-20.1 \pm 0.2
		Faders up. Mono Working button not operated.	C(L)4.12	-20.1 \pm 0.2
	A(L)4.12	—	C(L)3.11	-19.1 \pm 0.2
	A(L)5.13	—	C(L)4.12	-19.1 \pm 0.2
PA8/261 A	A(L)6.14	PA transfer switch to Loc. PA Vol set to 8 or 4.	C(L)6.14	+0.5 \pm 0.4 or abt -20
		PA transfer switch to Rem.	C(L)6.14	+0.8 \pm 0.4
PA8/261 C	A(L)6.14	PA Vol set to 8 or 4	C(L)6.14	+0.5 \pm 0.4 or abt -20
PA8/261 A to D	A(L)7.15	Prehear vol set to 8 or 4.	C(L)7.15	+2.0 \pm 0.4 or abt -14.5
	A(L)8.16 (Apply -70 dB)	Foldback vol set to 8 or 4.	C(L)8.16	-4.0 \pm 0.4 or abt -24
	1 kHz at +20 dB C(L)5.13	Connect B(L)19 to B(L)23 to operate prompt cut relay PC.	C(L)3.11 C(L)4.12	-54.2 \pm 0.1 -54.2 \pm 0.1

Crosstalk and Breakthrough*General*

The measurement chain for these tests should comprise an amplifier AM9/5, wired for maximum gain and using the 600-ohm input, followed by an ATM/1 used as a 600-ohm T.P.M. An oscilloscope

connected to the listen output of the T.P.M. should be used for the breakthrough tests. The jack connections specified under *A.C. Tests* are required.

Crosstalk

Carry out the tests specified in Table 5.

TABLE 5

<i>Module Code</i>	Apply 10 kHz at -50 dB to jack	<i>Condition</i>	Check with AM9/5 and TPM at jack	<i>Level (dB)</i>
PA8/261 A and B	A(L)1.9	CF (LHS) fader up. Dummy plug jack C(L)4.12	C(L)3.11	▷ -40
		As for previous test, but now connect B(L)19 to B(L)23, operating relay PC.	C(L)3.11	▷ -55
		Disconnect B(L)19 from B(L)23. Operate Main Amp C/O pushbutton. Dummy plug jack C(L)3.11.	C(L)4.12	▷ -55
		As for previous test but now reconnect B(L)19 to B(L)23.	C(L)4.12	▷ -55
	A(L)2.10	Operate Split Working pushbutton. Faders up. Dummy plug jack C(L)3.11	C(L)4.12	▷ -45
	A(L)3.11	Operate Split Working button. Faders up. Dummy plug jack C(L)4.12	C(L)3.11	▷ -45
PA8/261 C and D	A(L)2.10	Faders up. Dummy plug jack C(L)3.11	C(L)4.12	▷ -45
	A(L)3.11	Faders up. Dummy plug jack C(L)4.12	C(L)3.11	▷ -45
	A(L)4.12	Faders up. Dummy plug jack C(L)3.11	C(L)4.12	▷ -40
		As for previous test, but now connect B(L)19 to B(L)23, operating relay PC.	C(L)4.12	▷ -55
	A(L)5.13	Disconnect B(L)19 from B(L)23. Faders up. Dummy plug jack C(L)4.12	C(L)3.11	▷ -40
		As for previous test, but now reconnect B(L)19 to B(L)23.	C(L)3.11	▷ -55

Breakthrough

Carry out the tests specified in Table 6.

TABLE 6

<i>Module Code</i>	<i>Apply 10 kHz at -50 dB to jack</i>	<i>Condition</i>	<i>Check at jack</i>	<i>Oscilloscope Observation</i>
PA8/261 A to D	A(L)2.10	Faders down.	C(L)3.11	10 kHz not visible in noise
	A(L)3.11	Faders down.	C(L)4.12	10 kHz not visible in noise
	A(L)8.16	Operate Foldback Cut key	C(L)8.16	10 kHz not visible in noise
		Foldback Vol control set to 0	C(L)8.16	10 kHz just visible in noise
PA8/261 A and C	A(L)6.14	PA Vol control set to 0.	C(L)6.14	10 kHz just visible in noise
		Operate PA Cut key.	C(L)6.14	10 kHz not visible in noise

Noise Tests

For these tests use a measuring chain comprising an amplifier AM9/5 and T.P.M. as described for *Crosstalk and Breakthrough*. Connect an oscilloscope to the listen output of the T.P.M. to check that there is minimal hum.

Make the measurements given in Table 7, with the 600-ohm T.P.M. peaked to 6. Fluctuations should be not greater than 1 dB.

Noise-free Operation of Switched and Fader Controls
General Conditions for Tests

For the following tests apply programme at a volume of -60 dB. Set the monitoring loudspeaker to loud volume when fed from the listen output of a T.P.M. registering the normal range of programme peaks.

Main Amplifier Changeover: PA8/261A and B

Apply test programme to jack A(L)1.9. Check that operating the *Main Amp. C/O* pushbutton breaks programme cleanly on jack C(L)4.12 and at the same time produces a clean output on jack C(L)3.11.

Split Working: PA8/261A and B
(A + B) Working: PA8/261C and D

With faders at maximum, operating the *Split Working* button or the *A + B Working* button should cut and restore programme cleanly on jacks C(L)3.11 and C(L)4.12 when test programme is applied to jacks A(L)3.11 and A(L)2.10 respectively.

There should also be no noise on programme when the relevant faders are operated.

Prompt Cut

Connection of B(L)19 to B(L)20 (operating relay PC), with test programme applied at jacks A(L)2.10 and A(L)3.11, should cut programme cleanly on jacks C(L)3.11 and C(L)4.12 respectively.

Public Address

Apply test programme to jack A(L)6.14. Set the *P.A. Vol.* control to maximum and check that operation of the *P.A. Cut* key breaks programme cleanly on jack C(L)6.14. Check the *P.A. Vol.* control for noise-free operation.

Prehear

Apply test programme to jack A(L)2.10. Ensure that the *Split Working* button is not operated (for PA8/261A and B), or that the *A + B Working* button is operated (for PA8/261C and D). Set the *Prehear Vol.* control to maximum and check that operation of either *Prehear* pushbutton applies programme cleanly at jack C(L)7.15. Check the *Prehear Vol.* control for noise-free operation.

Foldback

Apply test programme to jack A(L)8.16. Set the *Foldback Vol.* control to maximum and check that operation of the *F.B. Cut* key breaks programme cleanly at jack C(L)8.16. Check the *Foldback Vol.* control for noise-free operation.

TABLE 7

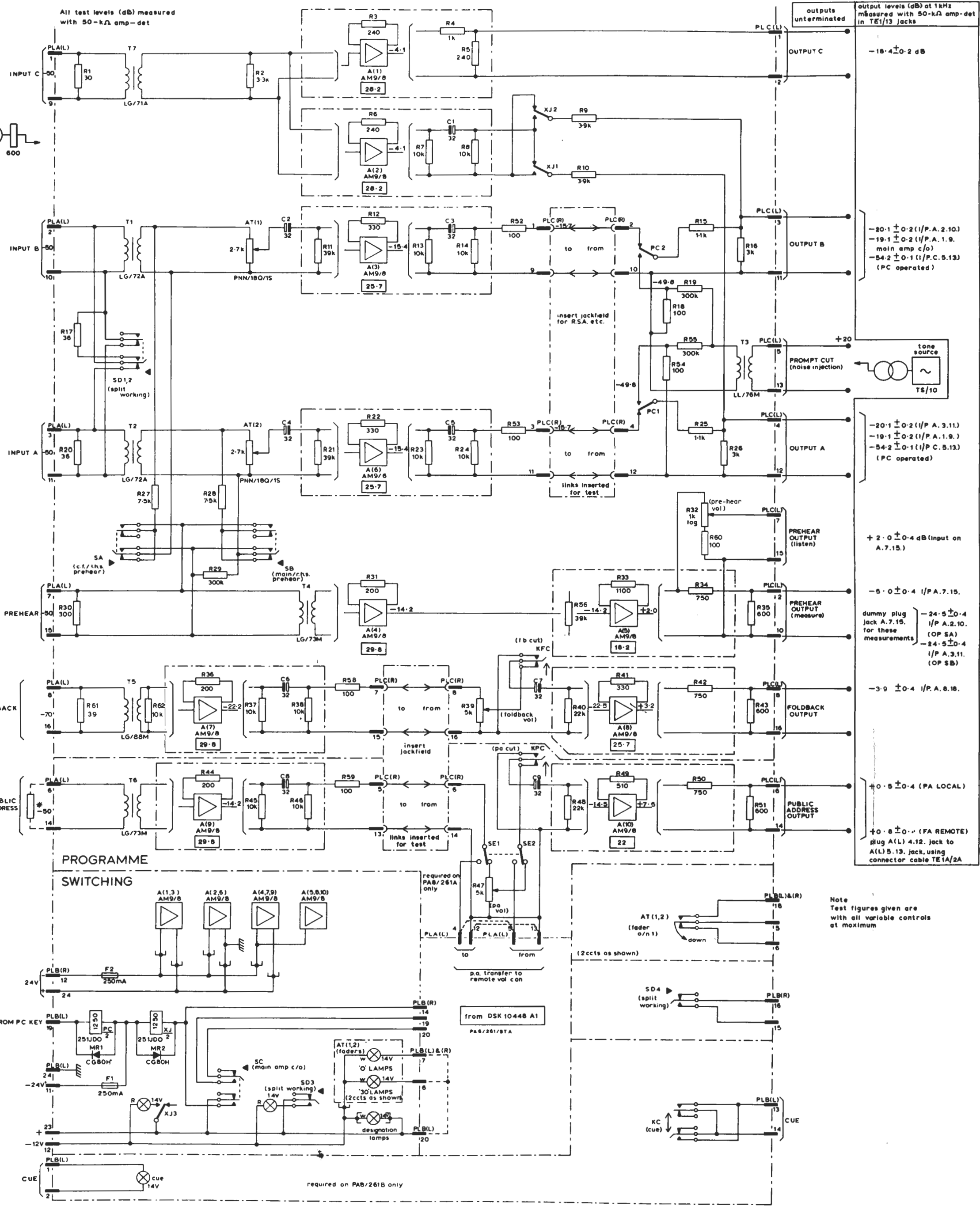
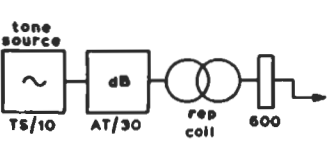
<i>Module Code</i>	<i>Check noise at jack</i>	<i>Noise Volume</i>	<i>Condition</i>
PA8/261 A and B	C(L)1.9	▷ -58	—
	C(L)3.11	▷ -60	LHS Fader up.
	C(L)4.12	▷ -57	RHS Fader up.
		▷ -60	RHS Fader down.
PA8/261 C and D	C(L)3.11	▷ -57	Fader up.
		▷ -60	Fader down.
	C(L)4.12	▷ -57	Fader up.
		▷ -60	Fader down.
PA8/261 A and C	C(L)6.14	▷ -65	Plug 300 ohms to jack A(L)6.14. PA Vol to 0.
		▷ -30	Plug 300 ohms to jack A(L)6.14. PA Vol to 8.
PA8/261 A to D	C(L)2.10	▷ -30	—
	C(L)8.16	▷ -65	Plug 300 ohms to jack A(L)8.16. Foldback Vol to 0.
		▷ -30	Plug 300 ohms to jack A(L)8.16. Foldback Vol to 8.

Phasing

Using an asymmetric test waveform, check, with an oscilloscope connected to the listen output of the ATM/1, that all outputs are in phase with all inputs.

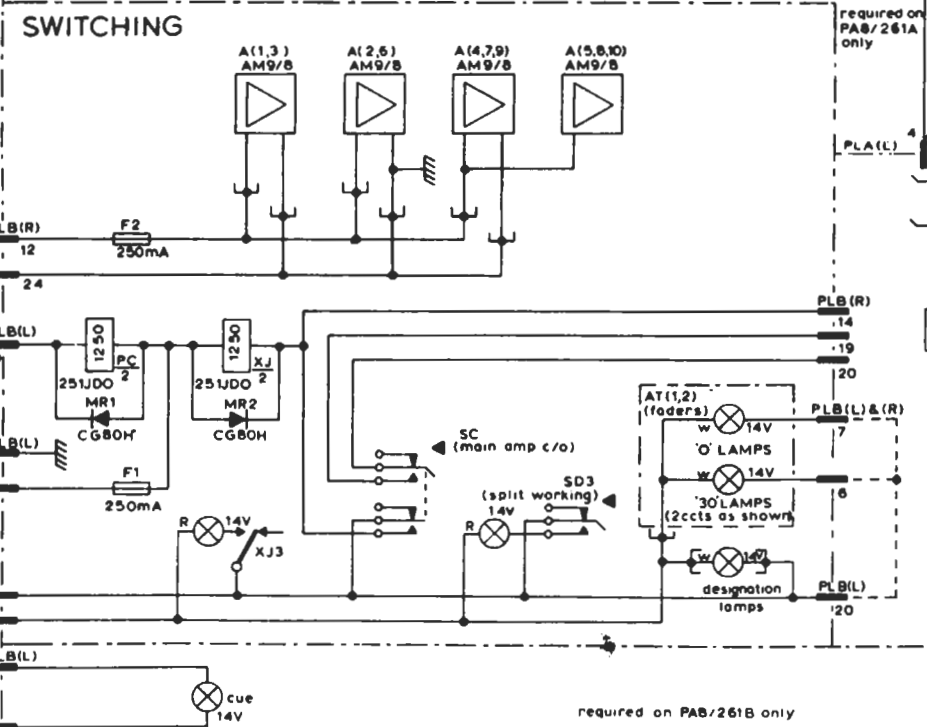
An asymmetric waveform may be produced conveniently by shunting a tone source (say a TS/10 set for +10 output) with a suitable diode (say an AAY 32).

WWM(X) 1/71



outputs	output levels (dB) at 1kHz measured with 50-kΩ amp-det in TE1/13 jacks
OUTPUT C	-18.4 ± 0.2 dB
OUTPUT B	-20.1 ± 0.2 (I/P A. 2.10) -19.1 ± 0.2 (I/P A. 1.9. main amp c/o) -54.2 ± 0.1 (I/P C. 5.13) (PC operated)
OUTPUT A	-20.1 ± 0.2 (I/P A. 3.11) -19.1 ± 0.2 (I/P A. 1.9.) -54.2 ± 0.1 (I/P C. 5.13) (PC operated)
PROMPT CUT (noise injection)	+2.0 ± 0.4 dB (input on A.7.15.)
PREHEAR OUTPUT (listen)	+2.0 ± 0.4 dB (input on A.7.15.)
PREHEAR OUTPUT (measure)	-5.0 ± 0.4 I/P A. 7.15. dummy plug Jack A.7.15. for these measurements -24.5 ± 0.4 (OP SA) -24.5 ± 0.4 (I/P A. 3.11. OP SB)
FOLDBACK OUTPUT	-3.9 ± 0.4 I/P A. 8.16.
PUBLIC ADDRESS OUTPUT	+0.8 ± 0.4 (PA LOCAL) +0.8 ± 0.4 (PA REMOTE) plug A(L) 4.12. Jack to A(L) 5.13. Jack using connector cable TE1A/2A

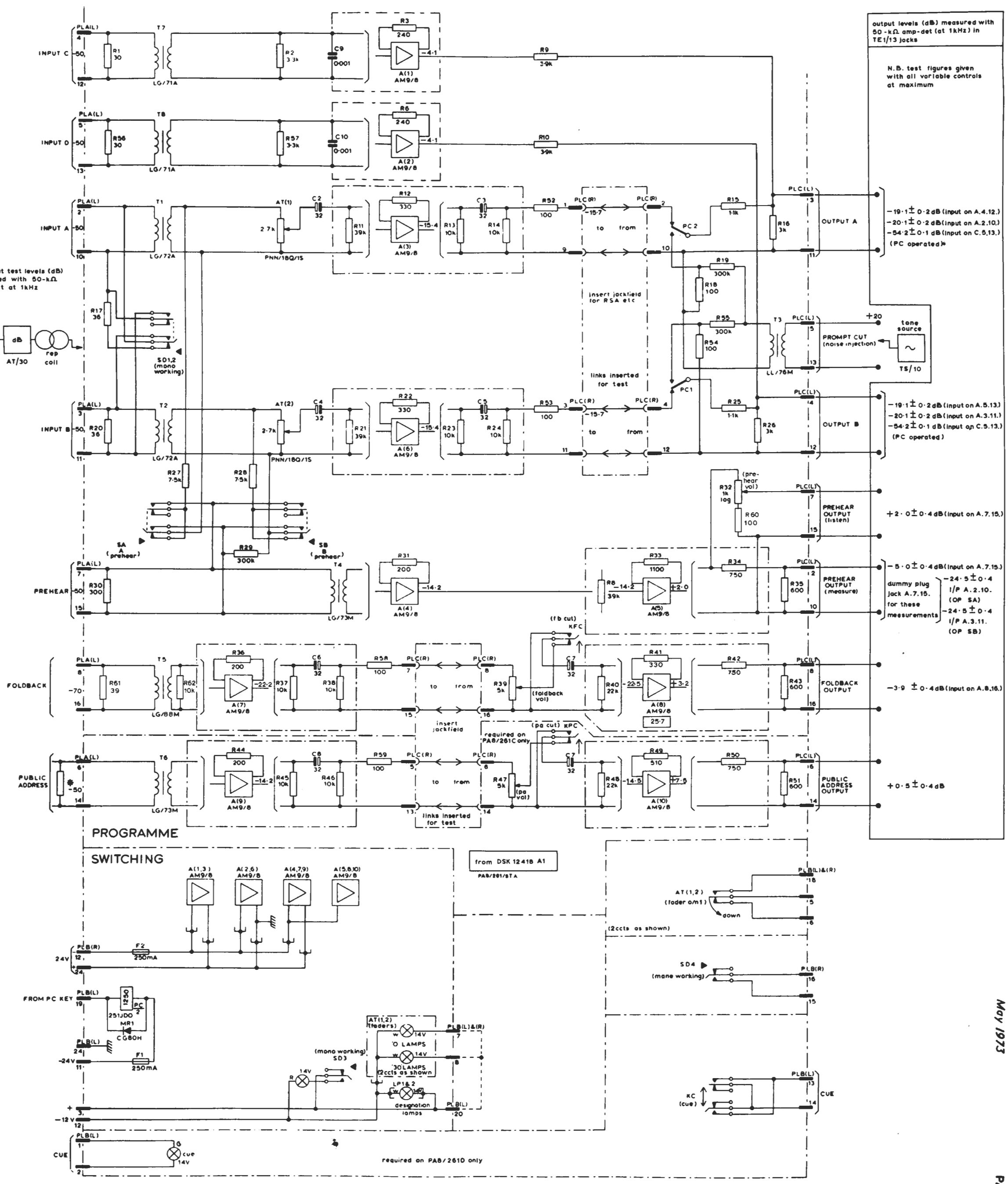
PROGRAMME SWITCHING



Notes
 1 (L) in circuit reference indicates LMS of module & (R) refers to RHS
 2 Resistors indicated thus * added externally to make impedance 300Ω

Note
 Test figures given are with all variable controls at maximum

Fig. 5. Test Circuit of PA8/261 A&B



output levels (dB) measured with 50-kΩ amp-det (at 1kHz) in TE1/13 jacks

N.B. test figures given with all variable controls at maximum

-19.1 ± 0.2 dB (input on A.4.12.)
 -20.1 ± 0.2 dB (input on A.2.10.)
 -54.2 ± 0.1 dB (input on C.5.13.)
 (PC operated)

-19.1 ± 0.2 dB (input on A.5.13.)
 -20.1 ± 0.2 dB (input on A.3.11.)
 -54.2 ± 0.1 dB (input on C.5.13.)
 (PC operated)

+2.0 ± 0.4 dB (input on A.7.15.)

-5.0 ± 0.4 dB (input on A.7.15.)
 dummy plug -24.5 ± 0.4 dB (OP SA)
 for these measurements -24.5 ± 0.4 dB (OP SB)

-3.9 ± 0.4 dB (input on A.8.16.)

+0.5 ± 0.4 dB