

**Power consumption**

7 watts max.

**Dimensions**

3.0 × 13.7 × 7.4 in.

**Connection leads**

Mains lead—9 ft long, output—4 ft long. A flex shortener is provided for each lead.

**L520 FLOOR LOUDSPEAKERS**

**Frequency range**

50–20,000 Hz.

**Drive units**

8", 2½", 2½".

**Impedance**

3.2 ohm.

**Power handling**

15 watts (DIN 45-573).

**Enclosure volume**

20.0 litres.

**Features**

Fitted with brackets for wall mounting. Front badge may be rotated.

**Dimensions**

Each—16.9 × 11.0 × 9.5 in.

**Connection leads**

Each—20 ft long. A flex shortener is provided for each lead.

**L510 SHELF LOUDSPEAKERS**

**Frequency range**

60–20,000 Hz.

**Drive units**

6½", 2½", 2½".

**Impedance**

4 ohm

**Power handling**

15 watts (DIN 45-573)

**Enclosure volume**

17.4 litres.

**Features**

Fitted with brackets for wall mounting. Front badge may be rotated.

**Dimensions**

Each—14.0 × 9.6 × 7.8 in.

**Connection leads**

Each—20 ft long. A flex shortener is provided for each lead.

**RTA2000 COMPACT**

**Transistors/Diodes**

40 transistors (including 2 Mosfets), 28 diodes.

**Record-player unit section**

**Unit**

Lenco B55 transcription deck.

**Operation**

Manual single play, infinitely variable speed adjustment between 30–86 rpm (click stops at 16⅔/33⅓/45/78 rpm), stroboscope disc, cueing device, bias compensator.

**Cartridge**

Goldring G800E 'Free Field' high compliance magnetic cartridge.

**Stylus**

Diamond, elliptical tip 0.0007" × 0.0003".

**Tracking weight**

1½–1¾ grams.

**Signal/Noise ratio**

Magnetic pick-up 70 dB, Tape playback 70 dB (at rated power output).

**Harmonic distortion**

Less than 0.6% from 40–12,500 Hz. for rated power output.

**Frequency response**

20–25,000 Hz –3 dB.

**Controls**

Volume/on-off, Bass +12 dB (50 Hz), Treble +11 –13 dB (10 KHz), Balance, Loudness control, Input selection, Mono/stereo switch.

**Inputs**

Tape playback 120 mV (100 K ohm).

**Outputs**

Tape recorder 300 mV (250 K ohm). Loudspeakers 3–15 ohm, Stereo headphones 3–50 ohm.

**Tuner Section**

**FM Coverage**

87–108 MHz.

**FM Sensitivity**

1.5 µV for 26 dB signal/noise.

**Frequency response**

20–15,000 Hz –3 dB.

**FM aerial input**

75 ohm (external FM aerial provided).

**Features**

Push button selection of 5 pre-tuned FM stations, AFC, stereo decoder, tuning meter, stereo indicator.

**General**

**Power supply**

110/130/220/240 v. AC 50 Hz.

**Power consumption**

100 watts max.

**Dimensions**

6.8 × 22.7 × 12.8 in.

**Connection lead**

Mains lead—9 ft long. A flex shortener is provided.

**TA2700 STEREO FM TUNER-AMPLIFIER**

**Transistors/Diodes**

36 transistors (including 2 Mosfets), 26 diodes.

**Amplifier Section**

**Power output**

15 watts per channel—continuous simultaneous sine wave (rms) rating and music power (IHF) rating (3.2 ohm).

**Signal/Noise ratio**

Magnetic pick-up 70 dB, Tape playback 70 dB (at rated power output).

**Harmonic distortion**

Less than 0.6% for 40–12,500 Hz. for rated power output.

**Frequency response**

20–25,000 Hz –3 dB.

**Controls**

Volume/on-off Bass ±12 dB (50 Hz), Treble +11 –13 dB (10 KHz), Balance, Loudness Control, Rumble filter, Mono/stereo switch, Loudspeaker selection, Input selection.

**Inputs**

Magnetic pick-up 3 mV (47 K ohm). Tape playback 120 mV (100 K ohm). Auxiliary inputs (× 2) 60 mV (47 K ohm).

**Outputs**

Tape recorder 300 mV (250 K ohm). Loudspeakers (2 pairs) 3–15 ohm. Stereo headphones 3–50 ohm.

**Tuner Section**

**FM Coverage**

87–108 MHz.

**FM Sensitivity**

1.5 µV for 26 dB signal/noise.

**Frequency response**

20–15,000 Hz –3dB.

**FM aerial input**

75 ohm (external FM aerial provided).

**Features**

Push button selection of 5 pre-tuned FM stations, AFC, stereo decoder, stereo/mono switch, tuning meter, stereo indicator.

**General**

**Power supply**

110/130/220/240 v AC 50 Hz.

**Power consumption**

100 watts max.

**Dimensions**

3.2 × 19.5 × 9.8 in.

**Connection lead**

Mains lead—9 ft long. A flex shortener is provided.

D.C. voltages are measured with respect to chassis.

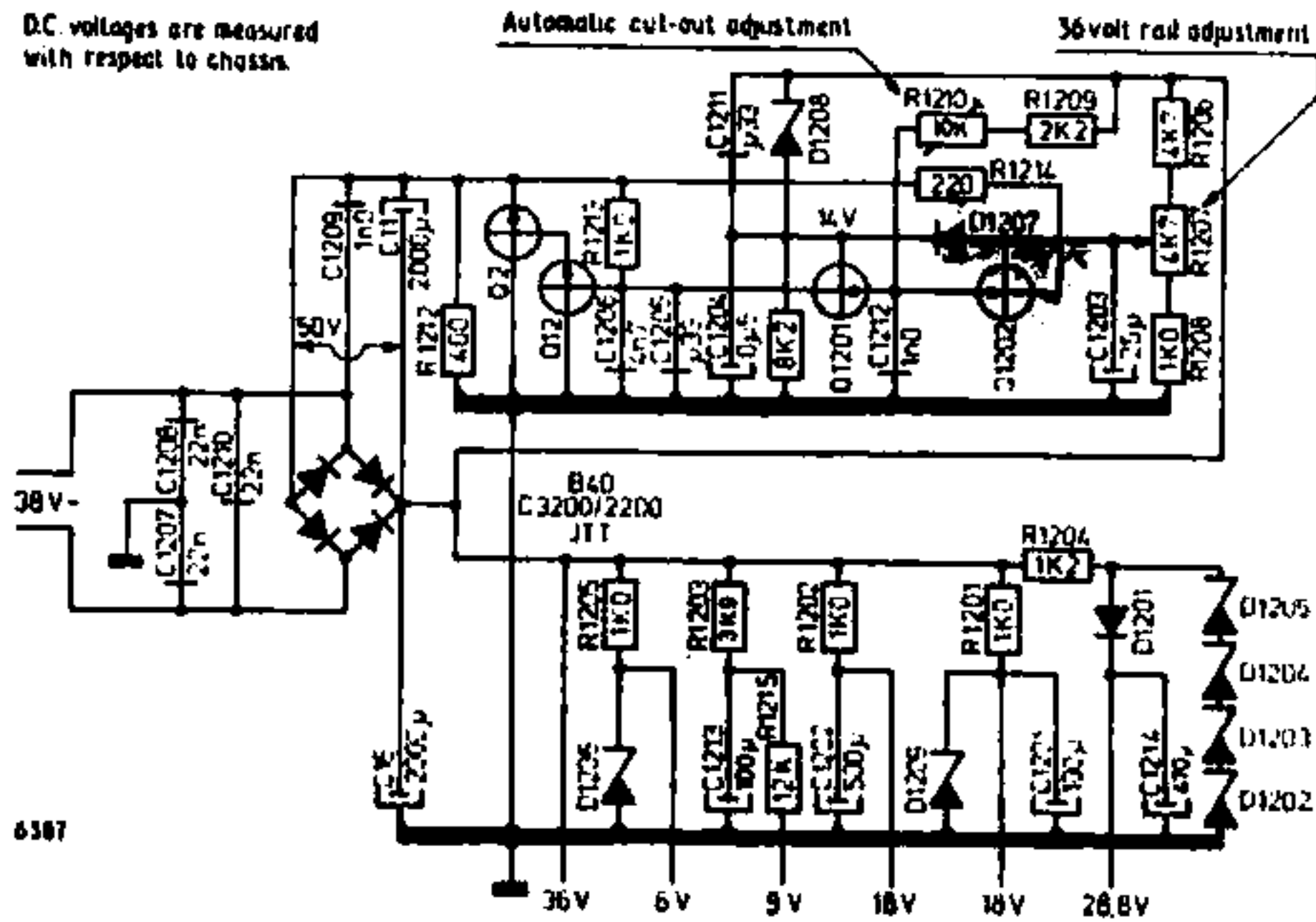


Fig. 5 Power supply circuit.

## D.C. VOLTAGES MODEL RTA2000

Before starting work on the RTA2000 the voltages indicated in Fig. 6 should be checked.

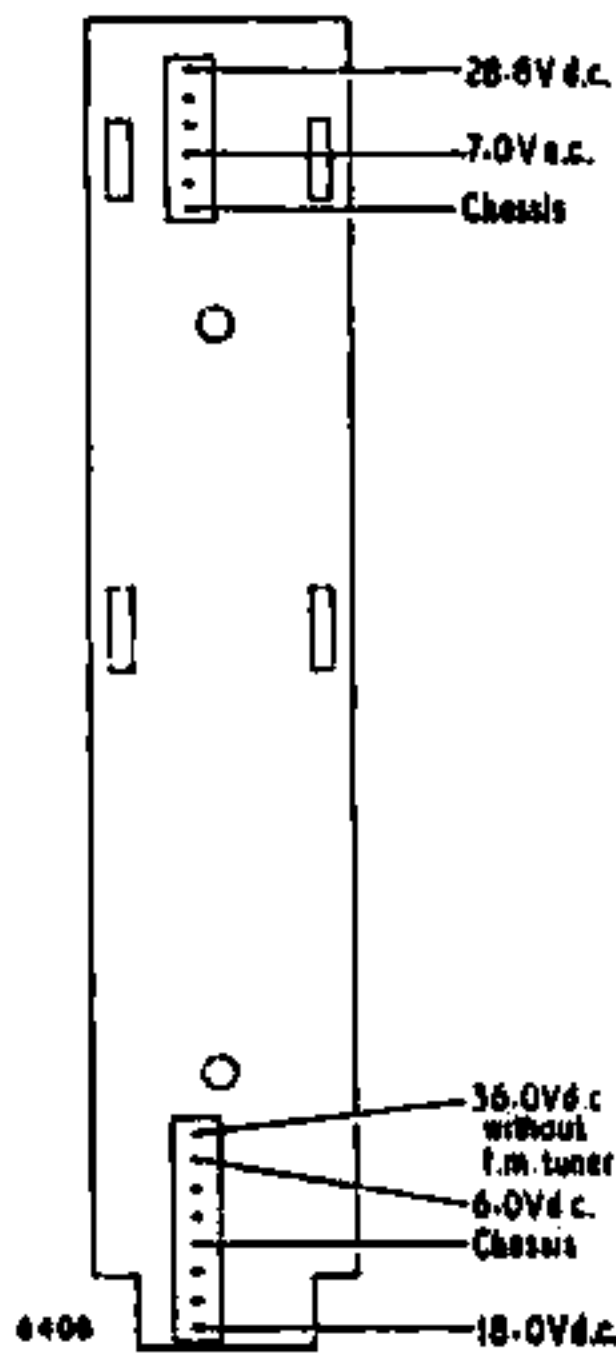
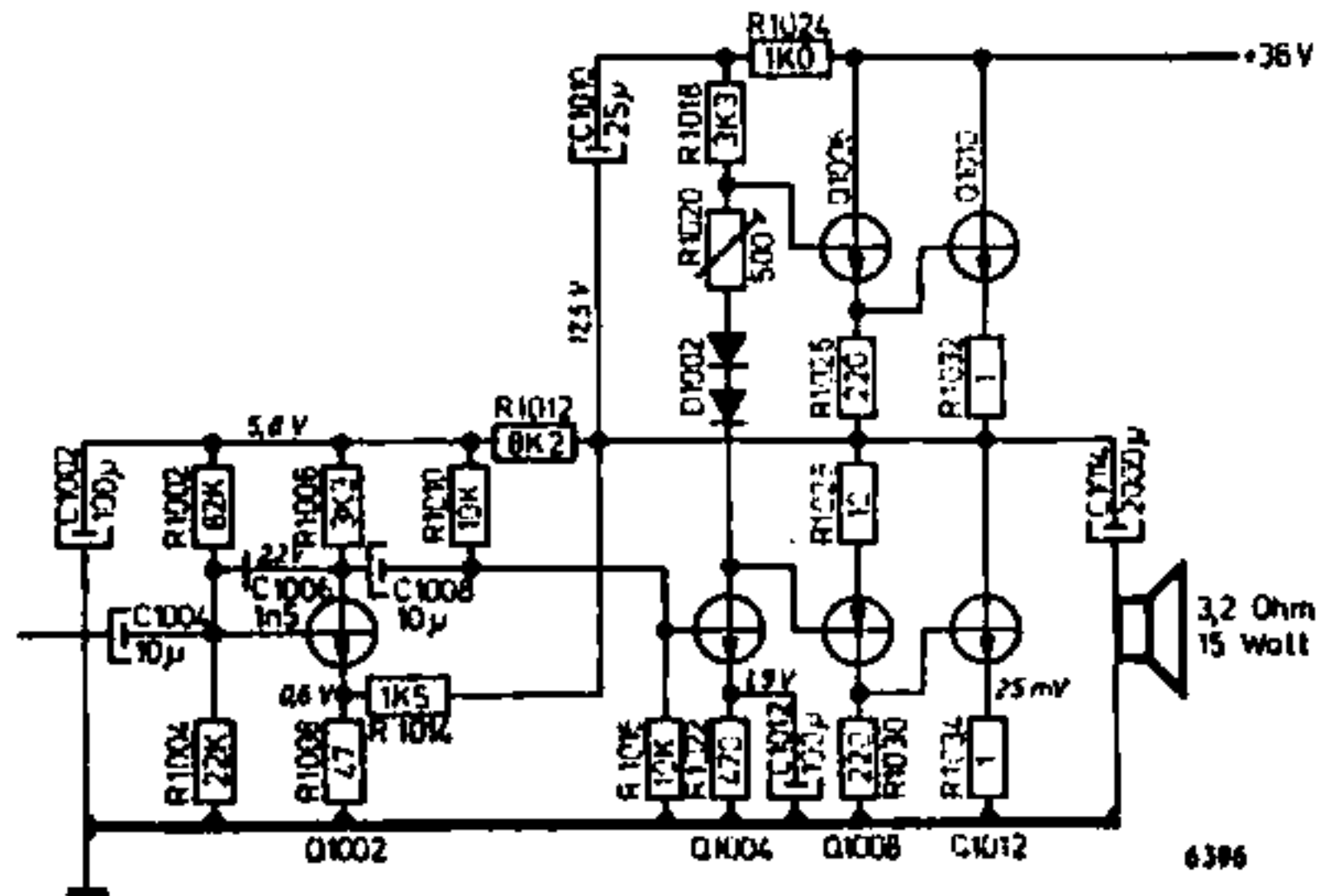


Fig. 6 Voltage readings—RTA2000

## AMPLIFIER OUTPUT STAGES

Check the voltages indicated in Figs. 7 and 8.

Fig. 7 Audio output stage.



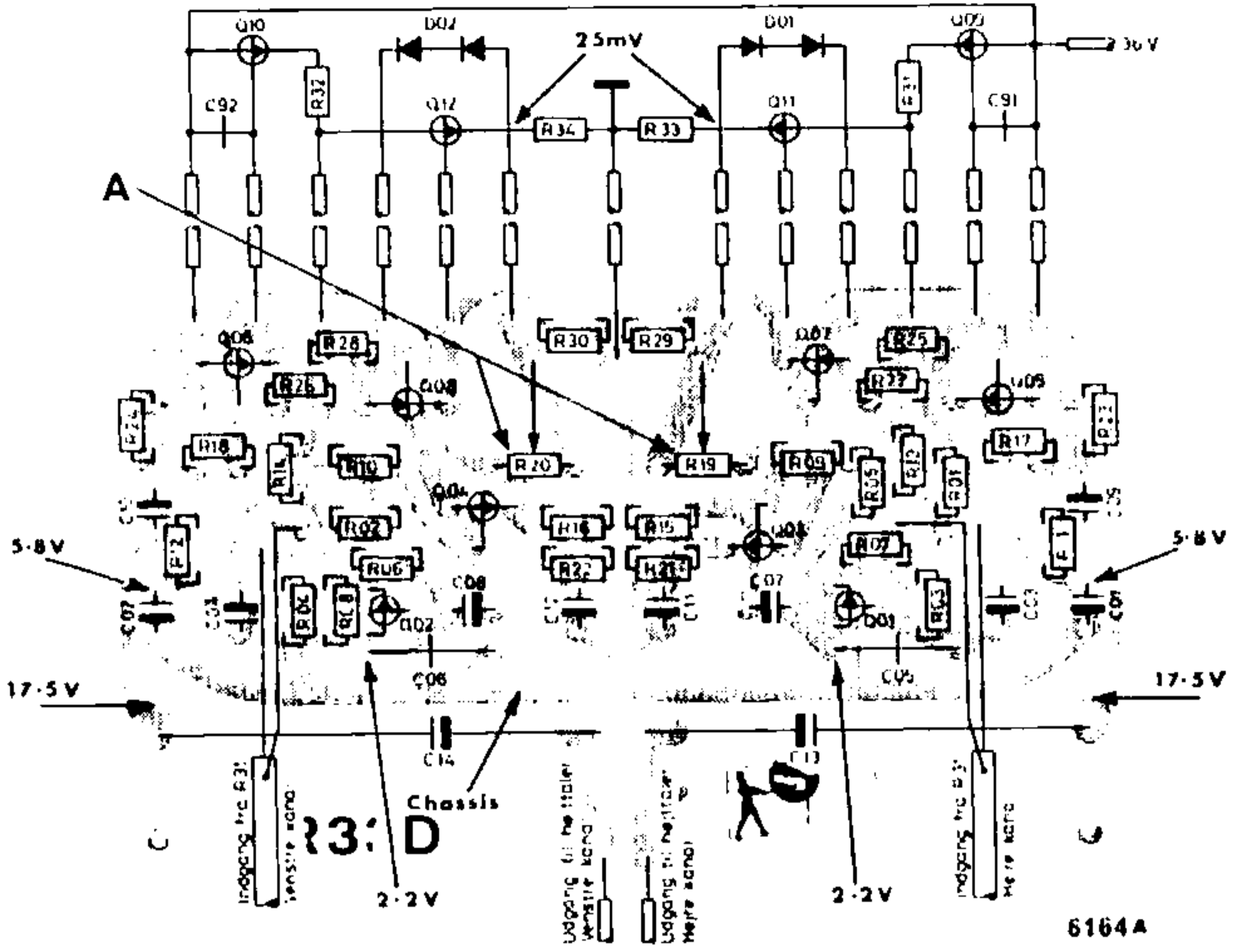


Fig. 8 Output stage panel.

## AF AMPLIFIER

Check the voltages indicated in Figs. 9 and 10.

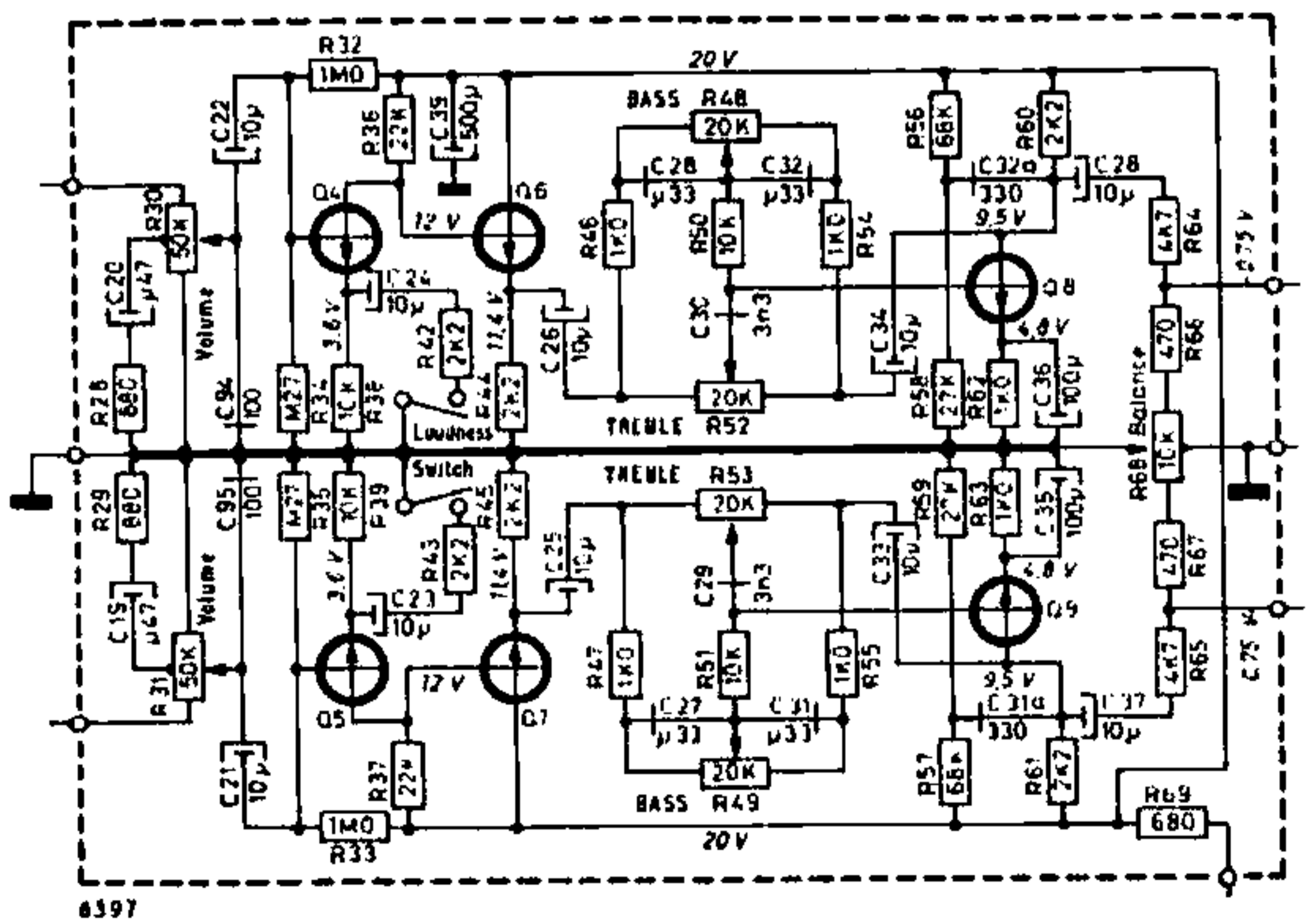


Fig. 9 Circuit diagram—A.F. amplifier panel.

$V_{in}$  120 mV, 1000 Hz.  
 $R_{in}$  370  
 $R_{out}$  1.18 V.

RM 0.1  
 UM 1.15

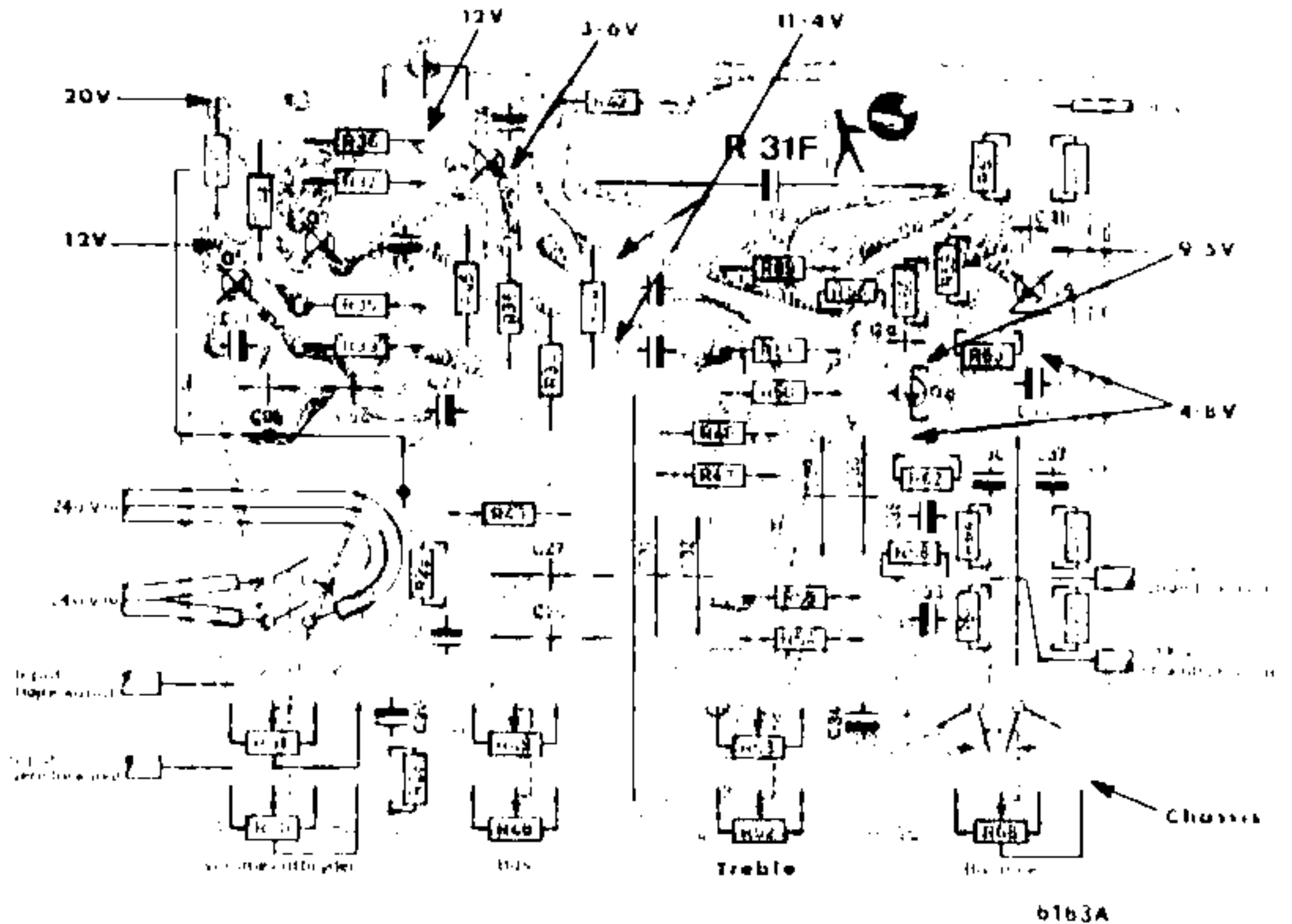


Fig. 10 A.F. amplifier panel.

## AMPLIFIER TESTING

Connect an audio generator to pin 3 or pin 5 of the tape recorder socket.

*Input signal:* 120 mV, 1000 Hz.

*Input impedance:* 100 k ohms at 1000 Hz.

Connect a suitably rated 3.2 ohm load resistor across each loudspeaker socket. Check that 6.9 volts (15 watts) is developed across each load resistor.

## PREAMPLIFIER MODULE 17

Measure the voltage at module pins 2 and 8. It should be 9.0 volts.

If module 17 draws no current, the voltage at pins 2 and 8 should be 36 volts.

## FM R.F./I.F. CHECK

### Connections

Connect an FM signal generator to the aerial input of the receiver.

*Input signal:* less than 4  $\mu$ V.

*Frequency swing:*  $\pm$ 250 kHz.

Connect the Y input of an oscilloscope to the tape recorder output (pin 1 or pin 4 of the tape recorder socket) and the X input to the signal-generator sweep voltage output.

### Procedure

*Signal:* 4  $\mu$ V.

*Frequency swing:*  $\pm$ 250 kHz.

*Y-axis:* 0.2 volt/div.

*X-axis:* 62.5 kHz/div.

Measured at 94 MHz.

If the S-curve is present, the I.F. cores should be adjusted for optimum S-curve.

Check the S-curve for straightness and symmetry.

Faulty modules can be localized by applying the I.F. signal (10.7 MHz) to the inputs of the various modules, starting at the detector (module 5).

**WARNING:** Adjustment of the R.F. stage and oscillator of module 14 should not be attempted as this will involve the risk of disturbing the tracking of the capacitance diodes. If any faults are present in module 14, replace the module.

## STEREO DECODER

1 Connect an FM signal generator that is capable of being modulated with a stereo signal (multiplex signal) to the aerial input.

2 Modulate the signal generator with a signal on the left channel and measure the signal strength on the right channel.

3 Adjust the signal for minimum response, using R 709 in module 7.

4 Modulate the signal generator with a signal on the right channel and measure the signal strength on the left channel.

5 Adjust the signal for minimum response, using R 709 in module 7.

**NOTE:** Adjustment of the channel separation by means of R 709 will be a compromise, reducing the two undesired signals as much as possible.

### 38 kHz Circuits

1 Connect the stereo generator modulated by a multiplex signal.

2 Reduce the stereo generator pilot tone so that the neon lamp of the receiver (the stereo indicator) does not come on. When the lamp is on, the circuits are loaded so that the tuning will not be possible.

3 Connect a d.c. voltmeter between pins 1 and 2 of module 7.

4 Adjust L601, L602, L701 and L603 for maximum signal at pins 1 and 2 of module 7.

# RTA2000

## CAPACITORS

Ref.	Value (Farads)	Tolerance (%)	Rating (volts)	Part Number
C1	2μ	—	12/15	2050009
C2	2μ	—	12/15	2050009
C3	25μ	—	40	2050117
C4-10	Not allocated	—	—	—
C11	2000μ	—	60/80	2050046
C12	—	—	—	—
C13	—	—	—	—
C14	—	—	—	—
C15	—	—	—	—
C16	2000μ	—	60/60	2050046
C17	—	—	—	—
C18	—	—	—	—
C19	μ47	—	63	2050037
C20	μ47	—	63	2050037
C21	10μ	—	30/35	2050079
C22	10μ	—	30/35	2050079
C23	10μ	—	30/35	2050079
C24	10μ	—	30/35	2050079
C25	10μ	—	30/35	2050079
C26	10μ	—	30/35	2050079
C27	μ33	20	100	2030002
C28	μ33	20	100	2030002
C29	3n3	20	125	2110025
C30	3n3	20	125	2110025
C31	μ33	20	100	2030002
C31a	330p	5	160	2120019
C32	μ33	20	100	2030002
C32a	330p	5	160	2120019
C33	10μ	—	30/35	2050079
C34	10μ	—	30/35	2050079
C35	100μ	—	10/12	2050044
C36	100μ	—	10/12	2050044
C37	10μ	—	30/35	2050079
C38	10μ	—	30/35	2050079
C39	500μ	—	25/30	2050042
C201	22n	20/80	30	2000000
C202	10μ	—	30/35	2050079
C203	0μ1	20	100	2030000
C204	—	—	—	—
C205	47p	2	63	2000019
C206	47p	2	63	2000019
C207	—	—	—	—
C208	650p	5	160	2120059
C301	22n	20/80	30	2000000
C302	0μ1	20	100	2030000
C303	22n	20/80	30	2000000
C304	2.5p	—	400	2200074
C305	—	—	—	—
C306	47p	2	63	2000019
C307	10μ	—	30/35	2050079
C308	47p	2	63	2000019
C309	—	—	—	—
C310	650p	5	160	2120059
C401	22n	20/30	30	2000000
C402	10μ	—	30/35	2050079
C403	0μ1	20	100	2030000
C404	650p	5	160	2120059
C405	47p	2	63	2000019
C406	47p	2	63	2000019
C407	1n8	—	—	—
C408	22n	20/80	30	2000000
C409	4n7	20/80	500	2200066
C410	10μ	—	30/35	2050079
C411	22p	5	50	2000049
C412	4.7p	—	400	2200018
C501	2μ	—	50	2050001
C502	22n	20/80	30	2000000
C503	10μ	—	30/35	2050079
C504	0μ1	20	100	2030000
C505	47p	2	63	2000019
C506	220p	5	160	2120018
C507	47p	2	63	2000019
C508	2μ	—	50	2050001
C509	220p	5	160	2120018
C601	10μ	—	30/35	2050079
C602	22n	5	250	2130034
C603	22n	5	250	2130034
C604	22n	5	250	2130034
C605	0μ1	20	100	2030000
C606	470p	10	100	2000082
C607	4n7	20/80	500	2200066
C701	22n	50	250	2130034
C702	1n	10	63	2000024
C703	1n	10	63	2000024
C704	4n7	20/80	500	2200066
C705	4n7	20/80	500	2200066
C1001	100μ	10/12	—	2050044
C1002	100μ	10/12	—	2050044
C1003	10μ	—	30/35	2050079
C1004	10μ	—	30/35	2050079
C1005	1n5	5	160	2120060
C1006	1n5	5	160	2120060
C1007	10μ	—	30/35	2050079
C1008	10μ	—	30/35	2050079
C1009	25μ	—	35/40	2050041
C1010	25μ	—	35/40	2050041

## CAPACITORS—Continued

Ref.	Value (Farads)	Tolerance (%)	Rating (volts)	Part Number
C1011	110μ	—	10/12	2050044
C1012	100μ	—	10/12	2050044
C1013	2000μ	—	35/40	2050045
C1014	2000μ	—	35/40	2050045
C1201	100μ	—	50/60	2050080
C1202	500μ	—	35/40	2050098
C1203	25μ	—	35/40	2050041
C1204	μ47	—	63	2050037
C1206	μ33	20	100	2030002
C1206	4n7	20/50	500	2200066
C1207	22n	10	250	2130013
C1208	22n	10	250	2130013
C1209	1n	10	63	2000024
C1210	22n	10	250	2130013
C1211	μ33	20	100	2030002
C1212	1n	20/50	500	2200016
C1213	100μ	—	50/60	2050080
C1214	470μ	—	25	2050122
C1400	82p	2	63	2000045
C1401	10n	20/80	30	2000015
C1402	330p	5	125	2120072
C1403	1.5p	5	250	2100009
C1404-9	Not allocated	—	—	—
C1410	330p	5	125	2120072
C1411*	2.5-6p	—	—	2060029
C1412	1n	10	63	2000024
C1413	1n	10	63	2000024
C1414-19	Not allocated	—	—	—
C1420*	2.5-6p	—	—	2060029
C1421	2.5p	—	250	2100000
C1422	330p	5	125	2120072
C1423	1n	10	63	2000024
C1424	10n	20/80	30	2000015
C1425-29	Not allocated	—	—	—
C1430*	3.3p	—	250	2100000
C1431*	2.5-6p	—	—	2060029
C1432	4n7	10	63	2000023
C1433	330p	5	125	2120072
C1434	330p	5	63	2000024
C1435	1n	10	63	2000024
C1701	10μ	—	—	2050079
C1702	10μ	—	—	2050079
C1703	680p	—	—	2000083
C1704	680p	—	—	2000083
C1705	250μ	—	—	2050048
C1706	250μ	—	—	2050048
C1707	4n3	—	—	2000084
C1708	4n3	—	—	2000084
C1709	15n	—	—	2130035
C1710	15n	—	—	2130035
C6001	0μ1	20	250	2130022
C6002	10μ	—	16/18	2050003
C6003	2μ	—	12/15	2050009
C6004	2μ	—	12/15	2050009
C6005	μ47	—	63	2050037
C6006	μ47	—	63	2050037
C6007	1n	5	160	2120034
C6008	10n	10	250	2130000
C6009	—	—	—	—
C6010	47n	20	250	2130015
C6011	22n	10	250	2130013
C-	10p	2%	63	2000031

\*Variable

## RESISTORS

Ref.	Value (ohms)	Tolerance (%)	Rating (watts)	Part Number
R1	47k	5	1/4	2500139
R2	5k5	5	1/4	2500130
R3	5k6	5	1/4	2500130
R4	47k	5	1/4	2500139
R5	220k (M22)	5	1/4	2500143
R6	220k (M22)	5	1/4	2500143
R7-27	Not allocated	—	—	—
R28	880	5	1/4	2500148
R29	880	5	1/4	2500148
R30	50k	—	—	2930055
R31	50k	—	—	—
R32	1 Meg. (1MO)	5	1/4	2500147
R33	1 Meg. (1MO)	5	1/4	2500147
R34	270k (M27)	5	1/4	2500144
R35	270k (M27)	5	1/4	2500144
R36	22k	5	1/4	2500136
R37	22k	5	1/4	2500136
R38	10k	5	1/4	2500133
R39	10k	5	1/4	2500133
R40	—	—	—	—
R41	—	—	—	—
R42	2k2	5	1/4	2500127
R43	2k2	5	1/4	2500127
R44	2k2	5	1/4	2500127
R45	2k2	5	1/4	2500127
R46	1k	5	1/4	2500124
R47	1k	5	1/4	2500124

\*Variable

RESISTORS—Continued

Ref.	Value (ohms)	Tolerance (±%)	Rating (watts)	Part Number
R48 }	20k	—	—	2930174
R49 }				
R50	10k	5	1/8	2500133
R51	10k	5	1/8	2500133
R52 }	20k	—	—	2930174
R53 }				
R54	1k	5	1/8	2500124
R55	1k	5	1/8	2500124
R56	68k	5	1/8	2500140
R57	68k	5	1/8	2500140
R58	27k	5	1/8	2500150
R59	27k	5	1/8	2500150
R60	2k2	5	1/8	2500127
R61	2k2	5	1/8	2500127
R62	1k	5	1/8	2500124
R63	1k	5	1/8	2500124
R64	4k7	5	1/8	2500129
R65	4k7	5	1/8	2500129
R66	470	5	1/8	2500122
R67	470	5	1/8	2500122
R68*	10k	—	—	2930122
R69	680	5	1/8	2500123
R70-100	Not allocated			
R101	100	5	1/8	2500118
R102	100	5	1/8	2500118
R103	4.7 (4E7)	5	1/8	2500178
R104	4.7 (4E7)	5	1/8	2500178
R201	10k	5	1/8	2500133
R202	1k	5	1/8	2500124
R203	180	5	1/8	2500119
R301	10k	5	1/8	2500133
R302	1k	5	1/8	2500124
R303	180	5	1/8	2500119
R304	22k	5	1/8	2500136
R401	8k2	5	1/8	2500132
R402	22k	5	1/8	2500136
R403	1k	5	1/8	2500124
R404	180	5	1/8	2500119
R405	6k8	5	1/8	2500131
R406	100k (M10)	5	1/8	2500142
R407	3k3	5	1/8	2500128
R408	22k	5	2/8	2500136
R501	22k	5	1/8	2500136
R502	8k2	5	1/8	2500132
R503	39k	5	1/8	2500138
R504	1k	5	1/8	2500124
R505	180	5	1/8	2500119
R506	330	5	1/8	2500121
R507	47	5	1/8	2500117
R508	180	5	1/8	2500119
R509	22k	5	1/8	1500186
R510	—	—	—	—
R611	22k	5	1/8	2500186
R601	22k	5	1/8	2500136
R602	100k (M10)	5	1/8	2500142
R603	33k	5	1/8	2500137
R604	2.2k	5	1/8	2500127
R605	10k	5	1/8	2500133
R606	100k (M10)	5	1/8	2500142
R607	15k	5	1/8	2500134
R608	1k	5	1/8	2500124
R701	10k	5	1/8	2500133
R702	100	5	1/8	2500118
R703	15k	5	1/8	2500134
R704	15k	5	1/8	2500134
R705	15k	5	1/8	2500134
R706	15k	5	1/8	2500134
R707	5k6	5	1/8	2500130
R708	2k2	5	1/8	2500127
R709*	10k	—	—	2930048
R710	5k6	5	1/8	2500130
R711	2k2	5	1/8	2500127
R1001	82k	5	1/8	2500141
R1002	82k	5	1/8	2500141
R1003	22k	5	1/8	2500136
R1004	22k	5	1/8	2500136
R1005	3k3	5	1/8	2500128
R1006	3k3	5	1/8	2500128
R1007	47	5	1/8	2500117
R1008	47	5	1/8	2500117
R1009	10k	5	1/8	2500133
R1010	10k	5	1/8	2500133
R1011	8k2	5	1/8	2500132
R1012	8k2	5	1/8	2500132
R1013	1k5	5	1/8	2500126
R1014	1k5	5	1/8	2500126
R1015	10k	5	1/8	2500133
R1016	10k	5	1/8	2500133
R1017	3k3	5	1/8	2500128
R1018	3k3	5	1/8	2500128
R1019*	500	—	—	2930048
R1020*	500	—	—	2930048
R1021	470	5	1/8	2500122
R1022	470	5	1/8	2500122
R1023	1k	5	1/8	2500124
R1024	1k	5	1/8	2500124

\*Variable

RESISTORS—Continued

Ref.	Value (ohms)	Tolerance (±%)	Rating (watts)	Part Number
H1025	220	5	1/8	2500120
R1026	220	5	1/8	2500120
R1027	10	5	1/8	2500115
R1028	10	5	1/8	2500115
R1029	220	5	1/8	2500120
R1030	220	5	1/8	2500120
R1031	1.0	10	1	2710001
R1032	1.0	10	1	2710001
R1033	1.0	10	1	2710001
R1034	1.0	10	1	2710001
R1201	1k	10	1/8	2600015
R1202	1k	10	1/8	2600015
R1203	3k9	10	1/8	2600048
R1204	1k2	10	1/8	2600111
R1205	1k	10	1/8	2600015
R1208	4k7	10	1/8	2600031
R1207*	4k7 Lin.	—	—	2930047
R1208	1k	5	1/8	2600064
R1209	2k2	10	1/8	2600016
R1210*	10k	—	—	2930116
R1211	8k2	10	1/8	2600027
R1212	400	10	5	2910022
R1213	1k	5	1/3	2600015
R1214	220	10	4	2910023
R1215	12k	10	1/2	2600049
R1400	220	10	1/6	2500159
R1401-9	Not allocated			
R1410	100k (M10)	10	1/6	2500165
R1411	220	10	1/6	2500159
R1412	220	10	1/6	2500159
R1413-19	Not allocated			
R1420	100k (M10)	10	1/6	2500165
R1421	100k (M10)	10	1/6	2500165
R1422	330	10	1/6	2500160
R1423	680	10	1/6	2500161
R1424-29	Not allocated			
R1430	8k2	10	1/6	2500163
R1431	15k	10	1/6	2500164
R1432	4k7	10	1/6	2500162
R1433	100k (M10)	10	1/6	2500165
R1434	100k (M10)	10	1/6	2500165
R1701	68k	5	1/8	2500140
R1702	68k	5	1/8	2500140
R1703	1k2	5	1/8	2500126
R1704	1k2	5	1/8	2500126
R1705	47k	5	1/8	2500139
R1706	37k	5	1/8	2500139
R1707	18k	5	1/8	2500135
R1708	18k	5	1/8	2500135
R1709	5k6	5	1/8	2500130
R1710	6k6	5	1/8	2500130
R1711	1k	5	1/8	2500124
R1712	1k	5	1/8	2500124
R1713	220k (M22)	5	1/8	2500143
R1714	220k (M22)	5	1/8	2500143
R6001	47	5	1/8	2500117
R6002	100	5	1/8	2500118
R6003	100	5	1/8	2500118
R6004	1k	5	1/8	2500124
R6006	2k2	5	1/8	2500127
R6006	2k2	5	1/8	2500127
R6007	10k	5	1/8	2500133
R6008	47k	5	1/8	2500139
R6009	220k (M22)	5	1/8	2500143
R6010	100k (M10)	5	1/8	2500142
R6011	220k (M22)	5	1/8	2500143
R6012	270k (M27)	5	1/8	2500144
R6013	470k (M47)	5	1/8	2500146
R6014	470k (M47)	5	1/8	2500146
R6015*	100k Lin.	—	—	2930090
R6018*	10k Lin.	—	—	2930048
R6017	2k2	5	1/8	2500127
R6018*	10k Lin.	—	—	2930048
R6019	820	5	1/8	2500148

\*Variable

COILS AND TRANSFORMERS

Ref.	Title	Part Number
L201	10.7 MHz trans.	1740012
L202		
L301		
L302	10.7 MHz trans.	1740012
L401		
L402	10.7 MHz trans.	1740012
L403		
L404		
L501	AM transformer not used	1741024
L502	10.7 MHz trans.	1741022
L601		
L602		
L603	19 kHz coils	1741009
	38 kHz coil	1740004

## COILS AND TRANSFORMERS—Continued

Ref.	Type	Part Number
L701	38 kHz trans.	1741010
L1400	FM I.F. coil	1701018
L1401	FM choke	1700034
L1410	FM Aerial coil	1750023
L1420	FM R.F. coil	1750023
L1430	FM Osc. coil	1750030
L6001	38 kHz coil	1741034
L6002	Filter coil	1760016
L6003	Filter coil	1750016
T1	Mains transformer	1763024

## TRANSISTORS

Ref.	Type	Part Number
Q2	2N3055	1367005
Q4	} BC239C or BC409C or BC173C }	1367042
Q6		
Q8		
Q9		
Q12	HD187	1367057
Q201	BF167H/BF198H	1367044
Q301	BF167H/BF198H	1367044
Q401	BF167/BF198	1367058
Q501	BF167/BF198	1367058
Q601	BC171B	1367057
Q602	BC171B	1367057
Q701	BC171B	1367057
Q702	BC171B	1367057
Q703	BC171B	1367057
Q1001	BC239C	1367042
Q1002	BC239C	1367042
Q1003	HD102	1367047
Q1004	HD102	1367047
Q1005	BC160	1367034
Q1006	BC160	1367034
Q1007	BC140	1367048
Q1008	BC140	1367048
Q1009	60201	1367009
Q1010	60201	1367009
Q1011	60201	1367009
Q1012	60201	1367009

## TRANSISTORS—Continued

Ref.	Type	Part Number
Q1201	E1044/2N2905	1367045
Q1202	E1044/2N2905	1367045
Q1410	40488A	1367078
Q1420	3N128	1367083
Q1430	BF167/BF198	1367058
Q1701	BC239C	1367042
Q1702	BC239C	1367042
Q1703	BC239C	1367042
Q1704	BC239C	1367042
Q8001	BC239C	1367042
Q8002	BC239C	1367042

## DIODES

Ref.	Type	Part Number
D301	AA143	1271045
D401	AA143	1271045
D402	AA143	1271045
D501	AA143	1271045
D602	AA143	1271045
D603	AA143	1271045
D601	AA143	1271045
D802	AA143	1271045
D701	AA143	1271045
D702	AA143	1271045
D703	AA143	1271045
D704	AA143	1271045
D1001	1V5	1271031
D1002	1V6	1271031
D1201	AA143	1271045
D1202	ZF8-2	1271021
D1203	ZF8-2	1271018
D1204	ZF8-2	1271021
D1205	ZF8-2	1271018
D1206	ZF8-2	1271018
D1207	AA143	1271045
D1208	ZF22	1271008
D1209	Zener 18V., 5%, 1W.	1271054
D1410	8B141	1271051
D1420	8B141	1271051
D1430	8B141	1271051
—	Bridge Rectifier B40 3200/2200	1260003

## TA2700

## CAPACITORS

Ref.	Value (Farads)	Tolerance (±%)	Rating (volts)	Part Number
C1	—	—	—	—
C2	—	—	—	—
C3	—	—	—	—
C4	0μ1	20	100	2030000
C5	μ47	—	63	2050037
C6	10n	20/80	30	2000015
C7	2μ	—	12/15	2050009
C8	2μ	—	12/15	2050009
C9	2μ	—	12/15	2050009
C10	2μ	—	12/15	2050009
C11	2000μ	—	50/80	2050046
C12	μ47	—	63	2050037
C13	—	—	—	—
C14	—	—	—	—
C15	47n	20	250	2130015
C16	2000μ	—	50/80	2050046
C17	25μ	—	40	2050117
C18	—	—	—	—
C19	μ47	—	63	2050037
C20	μ47	—	63	2050037
C21	10μ	—	30/35	2050079
C22	10μ	—	30/35	2050079
C23	10μ	—	30/35	2050079
C24	10μ	—	30/35	2050079
C25	10μ	—	30/35	2050079
C26	10μ	—	30/35	2050079
C27	μ33	20	100	2030002
C28	μ33	20	100	2030002
C29	3n3	20	125	2110025
C30	3n3	20	125	2110025
C31	μ33	20	100	2030002
C31a	330p	5	160	2120019
C32	μ33	20	100	2030002
C32a	330p	5	160	2120019
C33	10μ	—	30/35	2050079
C34	10μ	—	30/35	2050079
C35	100μ	—	10/12	2050044
C36	100μ	—	10/12	2050044
C37	10μ	—	30/35	2050079
C38	10μ	—	30/35	2050079
C39	500μ	—	25/30	2050042
C40	10μ	—	18/18	2050003
C41	470p	—	—	2220038
C42-72	Not allocated	—	—	—
C73	4n7	10	63	2000023

## CAPACITORS—Continued

Ref.	Value (Farads)	Tolerance (±%)	Rating (volts)	Part Number
C74	—	—	—	—
C75	—	—	—	—
C76	0μ1	20	100	2030000
C77-83	Not allocated	—	—	—
C84	22n	20/80	30	2000000
C85-92	Not allocated	—	—	—
C93	18p	—	—	2200030
C94	100p	5	160	2120062
C95	100p	5	160	2120062
C96	0μ1	10	250	2130002
C97	0μ1	10	250	2130002
C98	27p	—	—	2200061
C99	1n	10	63	2000024
C100	22n	20/80	30	2000000
C201	22n	20/80	30	2000000
C202	10μ	—	30/35	2050079
C203	0μ1	20	100	2030000
C204	—	—	—	—
C205	47p	2	63	2000019
C206	47p	2	63	2000019
C207	—	—	—	—
C208	650p	5	160	2120059
C301	22n	20/80	30	2000000
C302	0μ1	20	100	2030000
C303	22n	20/80	30	2000000
C304	2.5p	—	400	2200074
C305	—	—	—	—
C306	47p	2	63	2000019
C307	10μ	—	30/35	2050079
C308	47p	2	63	2000019
C309	—	—	—	—
C310	650p	5	160	2120059
C401	22n	20/30	30	2000000
C402	10μ	—	30/35	2050079
C403	0μ1	20	100	2030000
C404	650p	5	160	2120059
C405	47p	2	63	2000019
C406	47p	2	63	2000019
C407	1n8	—	—	—
C408	22n	20/80	30	2000000
C409	4n7	20/80	600	2200068
C410	10μ	—	30/35	2050079
C411	22p	5	50	1000049
C412	4.7p	—	400	2200018
C501	2μ	—	50	2050001

# ELECTRICAL TESTS AND ADJUSTMENTS

## MODELS RTA 2000, TA 2700 & TA 2800

### MAINS VOLTAGE ADJUSTMENT

The receiver can be switched between 110, 130, 220, and 240 volts. Switching is carried out by turning the selector on the back of the chassis, which should be set so that the desired voltage appears in the window adjacent to the selector.

#### IMPORTANT

Keep in mind the voltage adjustment must be carried out both on the motor and on the amplifier on the RTA2000.

### POWER SUPPLY

The power supply delivers 36 volts of stabilized output. An electronic protection circuit turns off the power if the current drawn from the power supply exceeds approximately 3 amps (corresponding to 15 watts of audio output).

Check the voltages indicated in Fig. 3.

The two voltages marked \* will have the values indicated only if normal current is drawn from the stereo decoder (18 volts) or from module 17 (9 volts). If the FM section or module 17 is removed, 36 volts should be present at both points.

### 36 VOLT D.C. RAIL

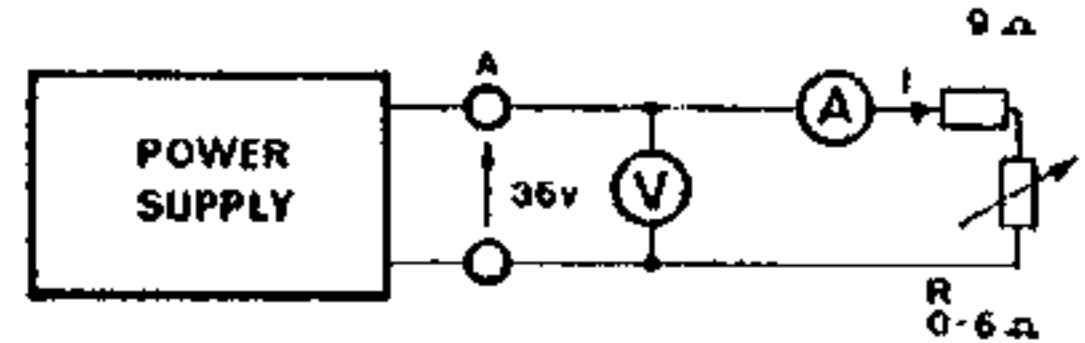
The main 36 volt d.c. rail is adjusted by R(12)07 (see Fig. 3). This adjustment should be carried out under no-signal conditions.

### ELECTRONIC PROTECTION CIRCUIT

- 1 Connect a measuring circuit (shown in Fig. 4) to the main power-supply voltage (36 volts, Fig. 3).
- 2 Check that 36 volts is present.
- 3 Increase the load until a current of 3 amps. is measured.
- 4 Adjust (12)R10 so that the voltage (36 volts) is reduced to zero at approximately 3 amps.

### STABILIZATION CHECK

- 5 Check that the 36 volt d.c. rail does not vary by more than approximately 10% (3-4 volts) when the load current varies from 0 to 2.5 amps.



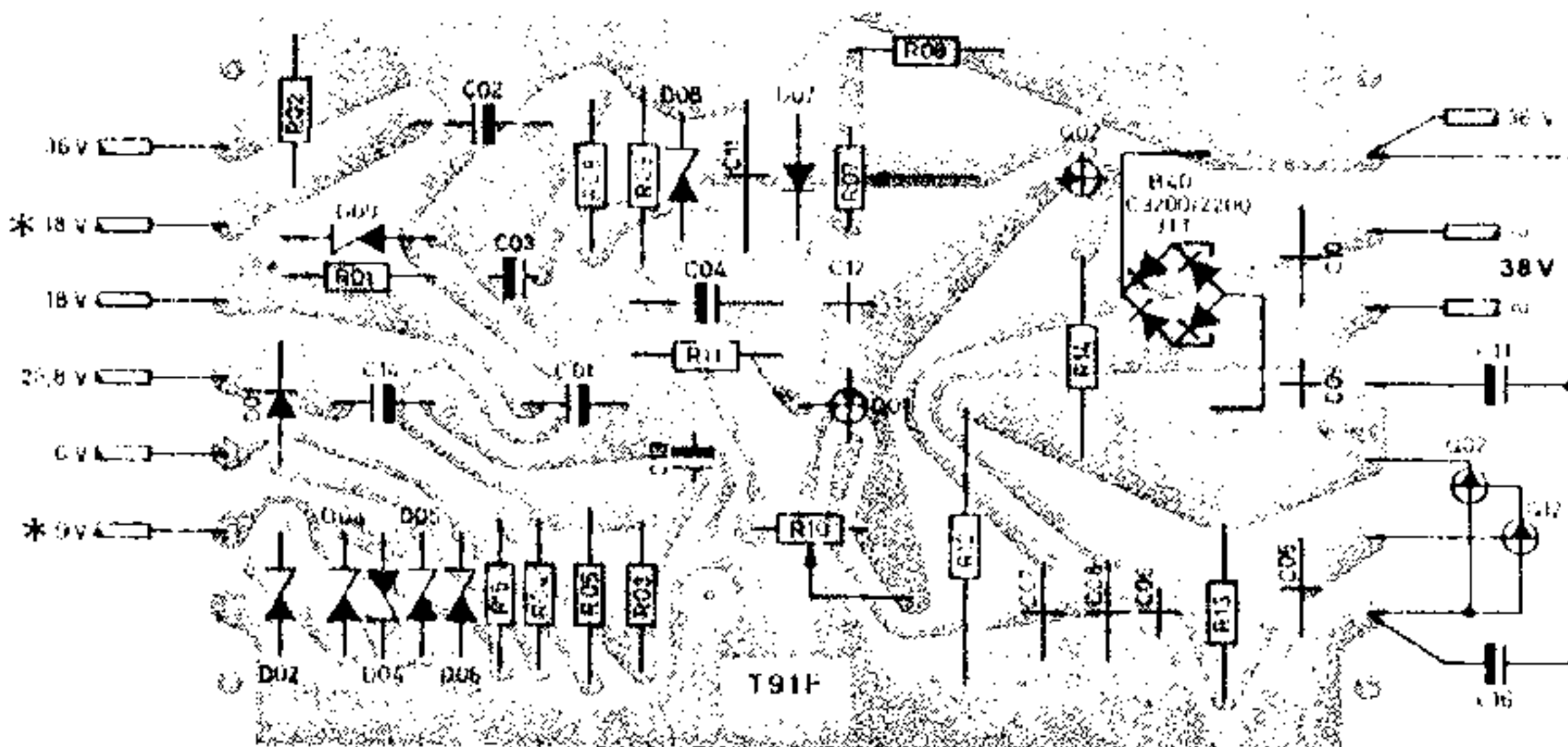
6395

Fig. 4 Interconnection diagram.

### OUTPUT AMPLIFIER NO-SIGNAL CURRENT

- 1 Apply power to the set and make the adjustment without delay.
- 2 Measure the voltages across R (10) 33 and R (10) 34 Fig. 8.
- 3 Adjust the voltage to 25 mV by means of R (10) 19 and R (10) 20, respectively (A) Fig. 8.

**NOTE:** The no-signal current should be checked whenever a replacement has been made in the output stage.



6165A

Fig. 3 Power supply panel.



# FM R.F. ALIGNMENT

## Adjustment Procedure RTA2000

- 1 Connect an FM signal generator to the aerial socket.
- 2 Set R6016 to approximately the middle of the control range.
- 3 Select one of the FM tuning buttons and set the receiver tuning to 102 MHz. Switch off the AFC.
- 4 Set the signal generator to 102 MHz (10-500µV).
- 5 Adjust R6018 for maximum output.
- 6 Set the receiver and generator to 90 MHz and adjust R6016 for maximum output.
- 7 Repeat operations 3 to 6 until the calibration is correct at both points.

## Adjustment of tuning-diode voltage

Adjustment potentiometers are located directly behind the preomat.

## Adjustment Procedure TA2700 and TA2800

- 1 Connect an FM signal generator to the aerial input socket.
- 2 Set the receiver tuning control so that the dial pointer is at 102 MHz. Switch off the AFC.
- 3 Set R1108 to approximately the middle of its control range.
- 4 Set the signal generator to 102 MHz (10-500 µV).
- 5 Adjust R1110 for maximum output.
- 6 Set the receiver and generator to 90 MHz and adjust R1108 for maximum output.
- 7 Repeat operations 3 to 5 until the calibration is correct at both points.

# AM ALIGNMENT TA2800

## I.F. Circuits

- 1 Connect a signal generator to pin 8 of module 2. Input signal: 470 kHz, 30% modulation at 400 Hz.
- 2 Set the volume control to maximum.
- 3 Increase the signal generator output until a signal can be measured at the speaker output sockets using a voltmeter connected across 3-2 ohms.
- 4 Adjust the AM-I.F. cores of modules 2, 3, and 4 for maximum output.

## R.F. Circuits

**NOTE:** The R.F. circuits should only be aligned if the I.F. and A.F. sections have been checked and found to be in order.

- 1 Connect a signal generator to the aerial input socket via a dummy aerial.

**Input Signal:** Frequency, see table below.

**Modulation frequency:** 400 Hz.

**Modulation depth:** 30%.

**Signal level:** 100-200 µV.

- 2 Connect a voltmeter or wattmeter across 3-2 ohms at the loudspeaker sockets.
- 3 Alignment should be carried out on all wavebands in the following order.

Waveband	LW■*		MW■	
	180	270	650	1400
Frequency (kHz)				
Adjust for max.	L10 L4	C45 C51	L13 L7	C46 C52
Waveband	FB (SW2)▼		KB (SW1)●	
	1600	3700	5900	6200
Frequency (kHz)				
Adjust for max.	L16 L8	C49 C53	L17 L9	C50 C54

\*Adjust the receiver tuning so that the scale pointer registers with the appropriate symbol on the tuning scale back plate.

## Filter Coils

**NOTE:** Filter coils L11 and L13a are fixed tuned and require no adjustment.

- 1 Connect a signal generator to the aerial input socket.  
**Input signal:** Frequency, 470 kHz.  
**Modulation:** 30% mod 400 Hz.
- 2 Increase the input signal until a measurable output signal is obtained at the speaker output.
- 3 Adjust the parallel trap (L6 and C65) and series trap (L5 and C64) for minimum output signal. Adjust L6 and L5 in that order.
- 4 Because the two circuits interact to some extent it is suggested that they be adjusted "roughly" without tuning them for minimum response each time. The input signal level should be kept relatively low to begin with and increased gradually as the adjustment is improved.

## Ferrite Aerial

The ferrite aerial should be adjusted at the frequencies listed in the table below.

Waveband	LW■		MW■	
	180	270	650	1400
Frequency (kHz)				
Adjust	L14	C47	L15	C48

