

# SERVICE MANUAL

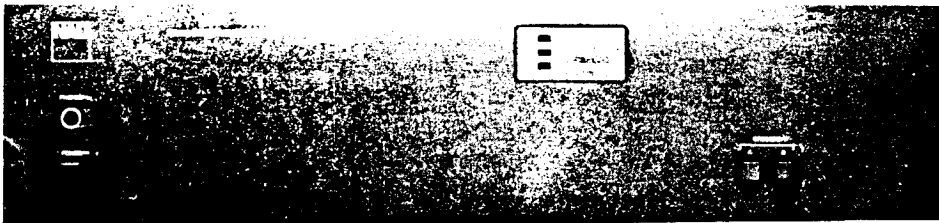
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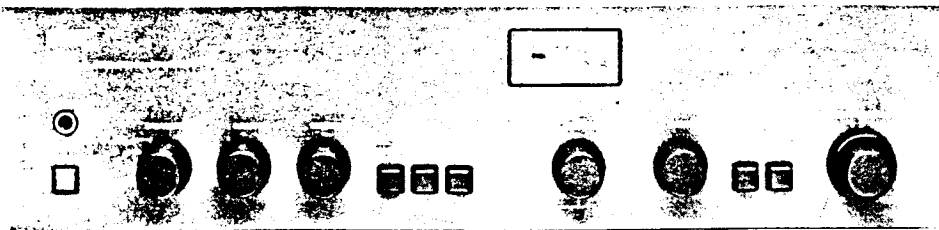
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Oxon OX9 4QY  
Tel:- 01844-351694 Fax:- 01844-352554  
Email:- enquiries@mauritron.co.uk

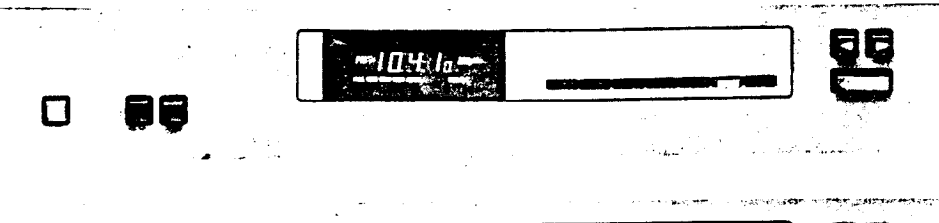


MODELS

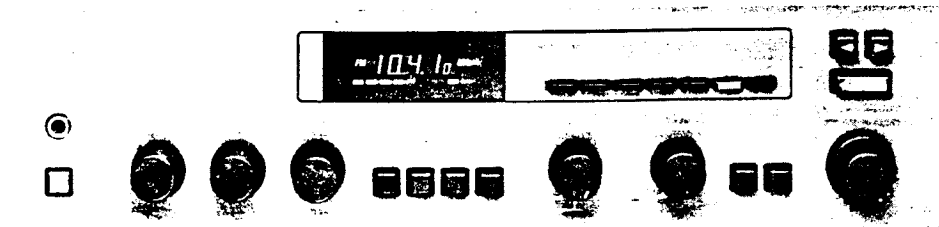
2150



3150



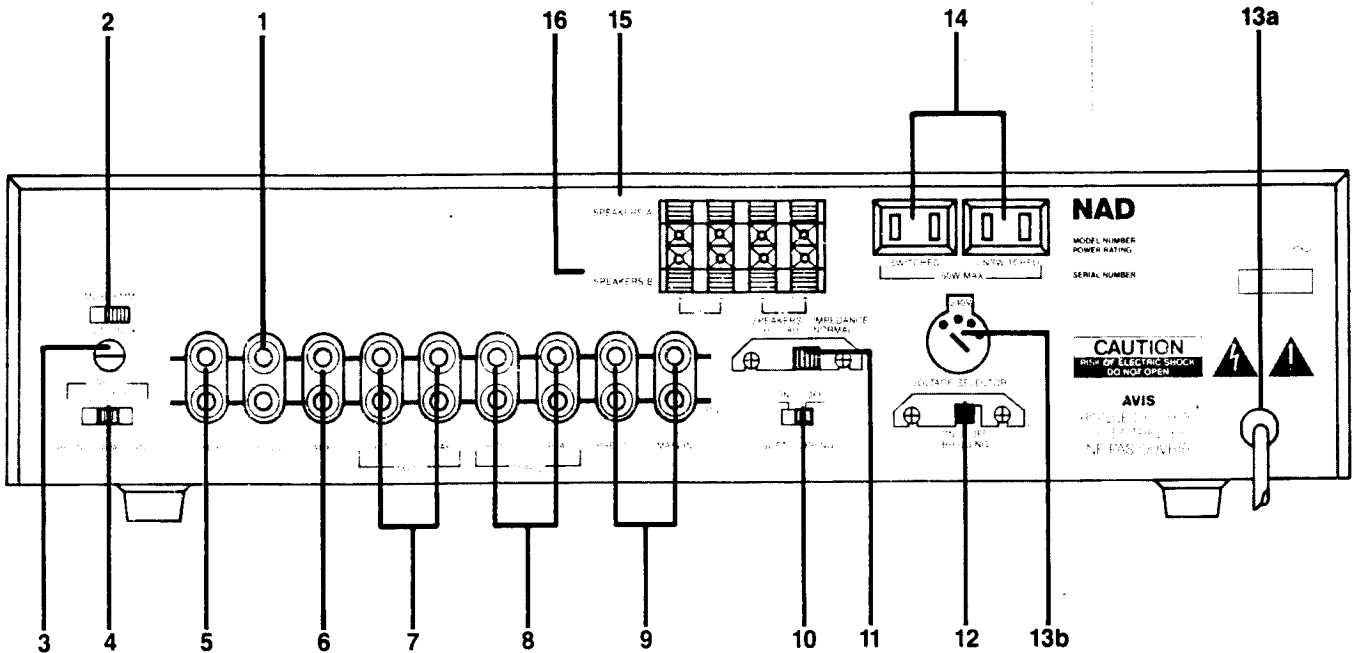
4150



7150

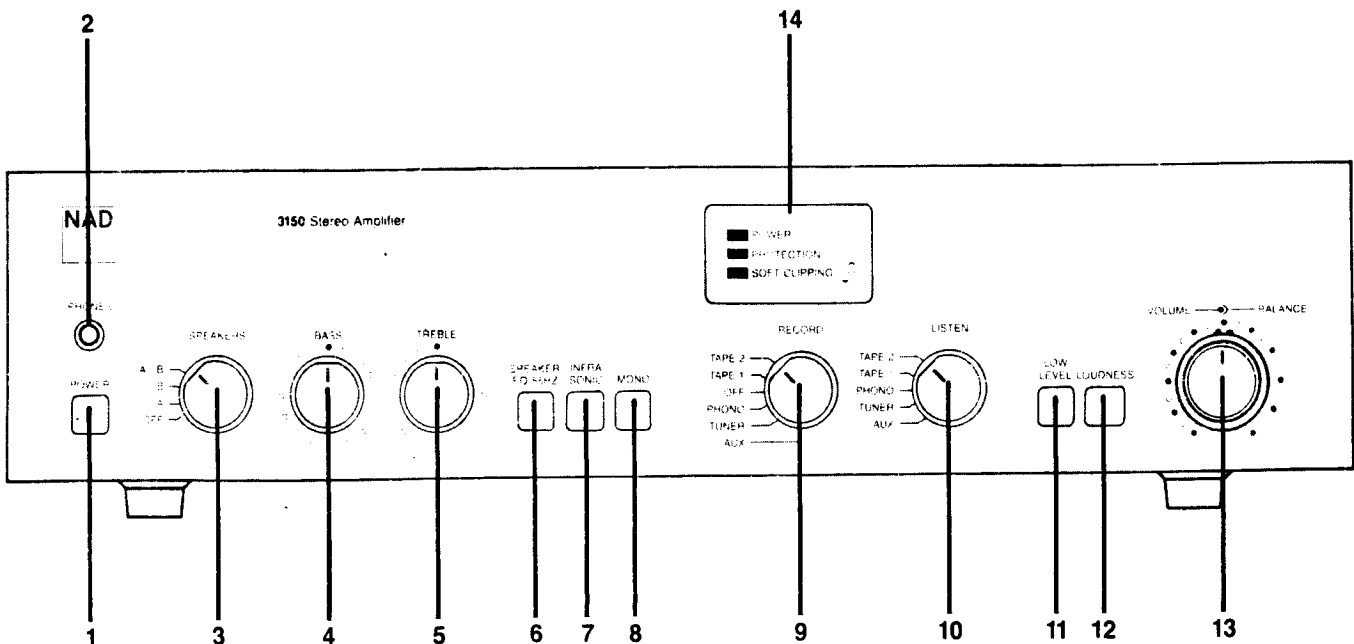
# 3150 FRONT/REAR VIEW

- |                         |                            |
|-------------------------|----------------------------|
| 1. Phono Input          | 10. Soft Clipping          |
| 2. MM MC Selector       | 11. Speaker Impedance      |
| 3. Ground               | 12. Bridging               |
| 4. Capacitance Selector | 13a. AC Line Cord          |
| 5. Tuner Input          | 13b. Voltage Selector      |
| 6. Aux Input            | (Not in U.K. model)        |
| 7. Tape 1 Rec/Play      | 14. AC Convenience Outlets |
| 8. Tape 2 Rec/Play      | 15. Speakers A             |
| 9. Preamp Out, Main in  | 16. Speakers B             |



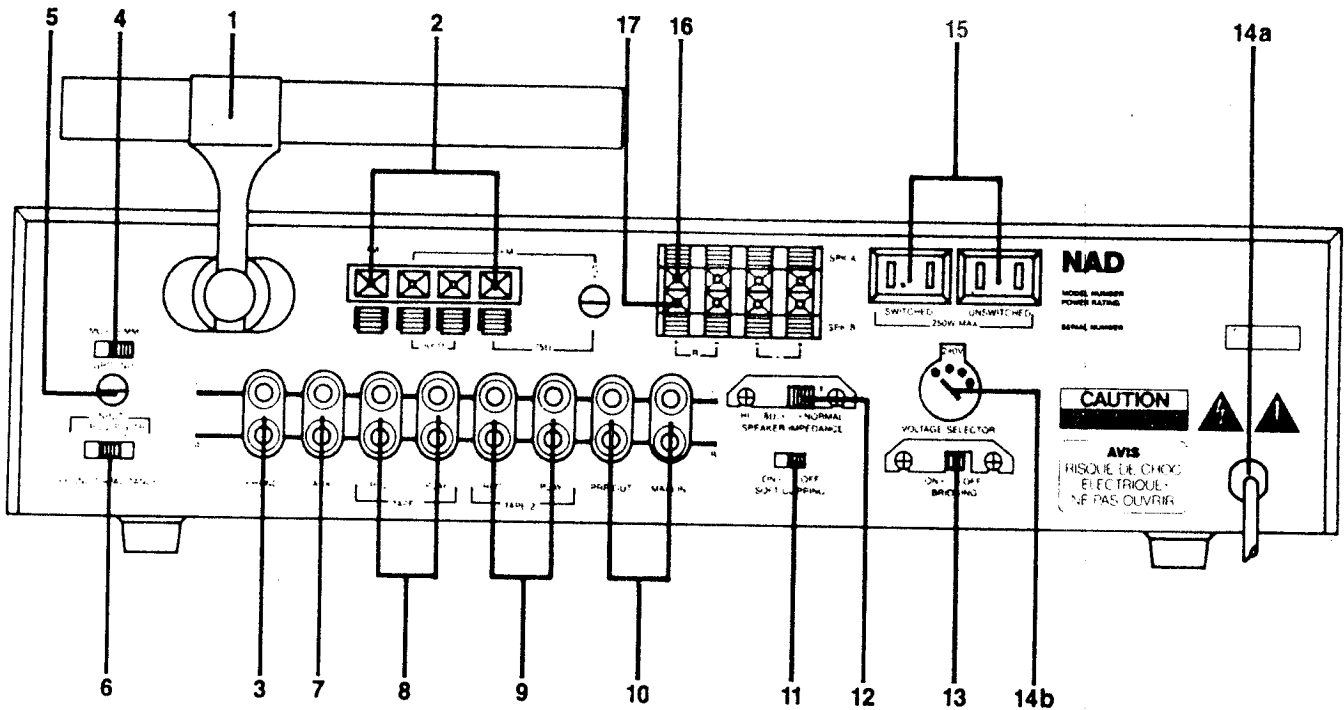
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|----------------------|---------------------------|
| 1. Power             | 8. Mono                   |
| 2. Phones            | 9. Recording Selector     |
| 3. Speaker Selector  | 10. Listen Selector       |
| 4. Bass              | 11. Low Level             |
| 5. Treble            | 12. Loudness Compensation |
| 6. Speaker EQ        | 13. Volume/Balance        |
| 7. Infrasonic Filter | 14. Status Indicators     |

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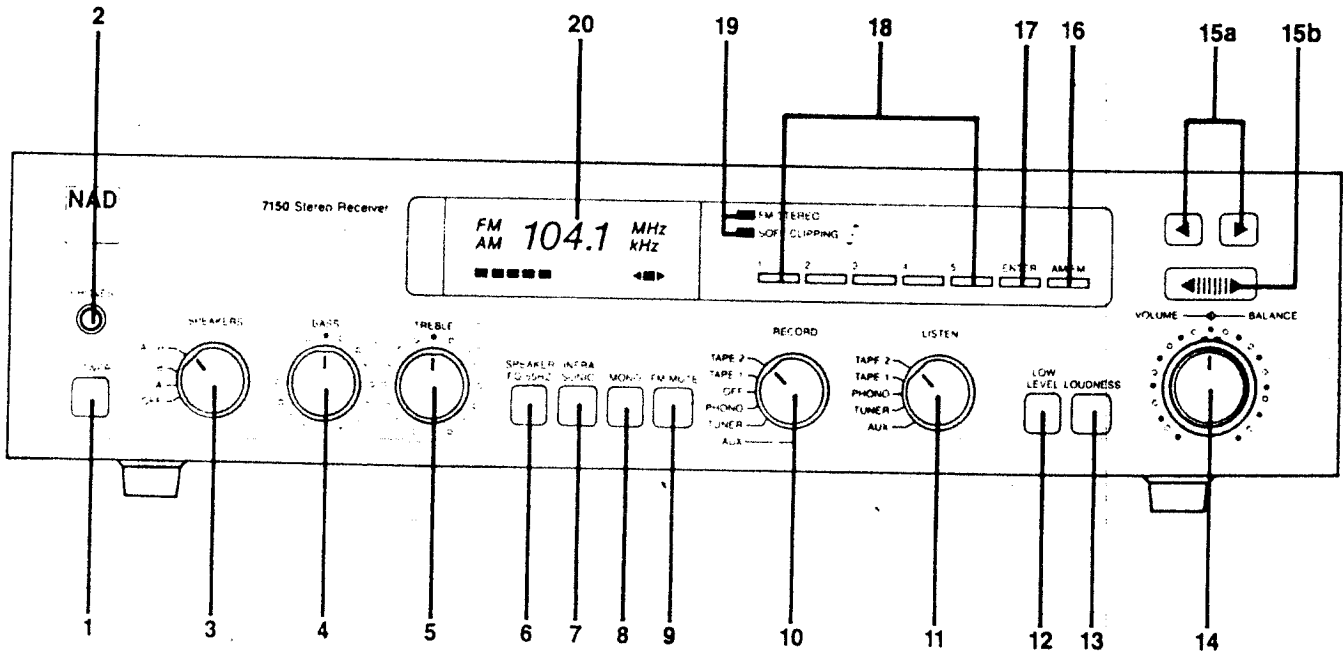


# 7150 FRONT/REAR VIEW

- |                         |                         |                             |
|-------------------------|-------------------------|-----------------------------|
| 1. AM Bar Antenna       | 8. Tape 1 Rec/Play      | 14b. Voltage Selector       |
| 2. Antenna Terminals    | 9. Tape 2 Rec/Play      | (Not in U.S./Canada models) |
| 3. Phono Input          | 10. Preamp Out, Main In | 15. AC Convenience Outlets  |
| 4. MM/MC Phono Selector | 11. Soft Clipping       | (Not in U.K. model)         |
| 5. Ground               | 12. Speaker Impedance   | 16. Speakers A              |
| 6. Capacitance Selector | 13. Bridging            | 17. Speakers B              |
| 7. Aux Input            | 14a. AC Line Cord       |                             |



- |                        |                           |
|------------------------|---------------------------|
| 1. Power               | 12. Low Level             |
| 2. Phones              | 13. Loudness Compensation |
| 3. Speaker Selector    | 14. Volume/Balance        |
| 4. Bass                | 15a. Up/Down              |
| 5. Treble              | 15b. Search               |
| 6. Speaker Eq.         | 16. FM/AM                 |
| 7. Infrasonic Filter   | 17. Enter                 |
| 8. Mono                | 18. Pre-sets              |
| 9. FM Mute             | 19. Status Indicators     |
| 10. Recording Selector | 20. Tuning Display        |
| 11. Listen Selector    |                           |



## 2150 SPECIFICATIONS

All specifications are measured in accordance with IHF standard A-202

Speakers Impedance Switch Set:	Normal	Hi ( $\geq 8\Omega$ )
Continuous Average Power Output at 8 ohm 20-20K Hz both Channels Driven	50 W	60 W
Rated Distortion 20-20K Hz	<0.03%	<0.03%
Clipping Headroom at 8 ohm	+0.5 dB	+0.5 dB
Clipping Power at 8 ohm	57 W	68 W
at 4 ohm	80 W	-
at 2 ohm	90 W	-
Dynamic Headroom at 8 ohm	+1.8 dB	+1.6 dB
Dynamic Power at 8 ohm	90 W	100 W
at 4 ohm	150 W	-
at 2 ohm	180 W	-
Transient Overload Recovery Time	< 1 usec	
Slew Factor	> 50	
Slew Rate	20 V/usec	
Damping Factor at 50 Hz (Ref. 8 ohm)	> 100	
THD 20-20K Hz from 250 mW to 60 W	< 0.03%	
SMPTE IMD (60K Hz +7K Hz, 4:1) from 250 mW to 50 W	< 0.03%	
IHF IMD (19K Hz + 20K Hz) at 50 W	< 0.03%	
TIM (15K Hz Sinewave +3.18K Hz Square Wave) at 50 W	< 0.03%	
Frequency Response, 20-20K Hz	+-0.5 dB	
Frequency Response Range -3 dB	10-35K Hz	
<b>Physical Specifications</b>		
Dimensions WxHxD (inch)	16.5x3.8x12.2	
(mm)	420x96x310	
Net Weight	8.8Kg/19.4 Lbs.	

## 7150 AUDIO/3150 SPECIFICATIONS

\* Measurements identified by an asterisk are taken in accordance with the new IHF A-202 amplifier measurement standard.

Speaker Impedance Switch Set:	Normal	Hi ( $\geq 8\Omega$ )
<b>Power Amplifier Section</b>		
* Continuous average power output at 8 ohms 20-20K Hz both Channels Driven	50 W	60 W
Rated distortion 20-20K Hz	<0.03%	<0.03%
* Clipping Headroom at 8 ohm	+0.5 dB	+0.5 dB
Clipping Power at 8 ohm	57 W	68 W
at 4 ohm	80 W	-
at 2 ohm	90 W	-
Dynamic Headroom at 8 ohm	+1.8 dB	+1.6 dB
Dynamic Power at 8 ohm	90 W	100 W
at 4 ohm	150 W	-
at 2 ohm	180 W	-

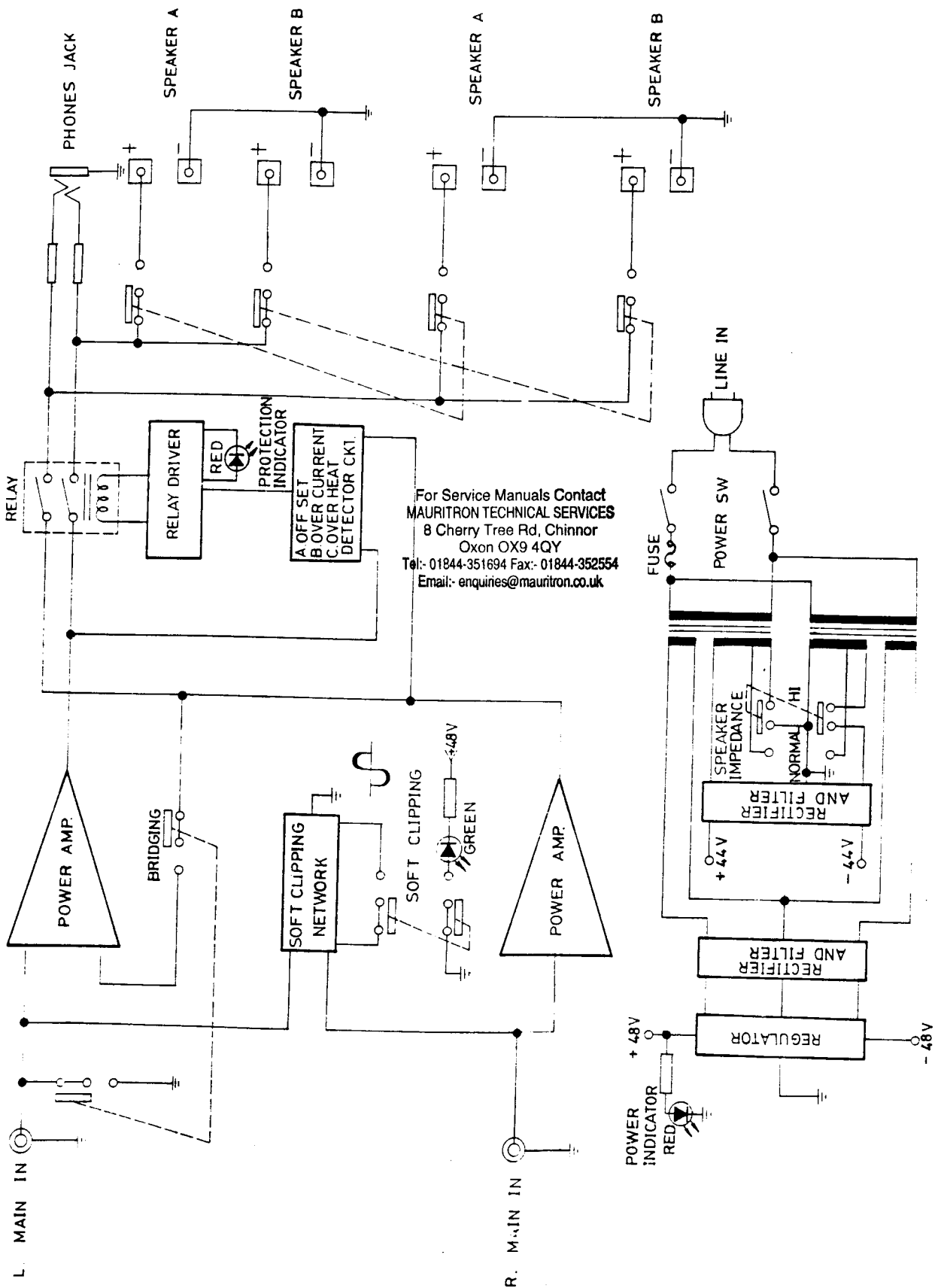
* Transient Overload Recovery Time	<1 usec	
* Slew Factor	>50	
Slew Rate	20 V/usec	
Damping factor at 50 Hz (Ref. 8 ohm)	>100	
THD 20-20K Hz From 250 mW to 60 W	<0.03%	
SMPTTE IMD (60K Hz + 7K Hz, 4:1) from 250 mW to 60 W	<0.03%	
IHF IMD (19K Hz + 20K Hz) at 60 W	<0.03%	
TIM (15K Hz Sine Wave +3.18K Hz Square Wave) at 60 W	<0.03%	
Frequency Response, 20-20K Hz	+0.5 dB	
Frequency Response Range -3 dB	10-35K Hz	
<b>Preamplifier Section</b>	<u>MM</u>	<u>MC</u>
PHONO Input Resistance	47K ohm	47K ohm
PHONO Input Capacitance (Selectable)	100P/200P/320P	100P/200P/320P
Input Sensitivity (1K Hz) * For 1 Watt out	0.4 mV	0.035 mV
50 Watt out	2.5 mV	0.25 mV
Input Overload at 1K Hz	240 mV	24 mV
20 Hz	24 mV	2.4 mV
20K Hz	2.4 V	180 mV
THD (20-20K Hz) and IMD at +30 dB input level	<0.015%	0.04%
RIAA Response Accuracy	+0.2 dB	+0.5 dB
Signal to Noise Ratio A-Weighted		
(a) with phono cartridge connected		
Ref 10 mV	>82 dB	
*Ref 5 mV	>76 dB	
*Ref 0.5 mV		68 dB
(b) with short-circuit input		
Ref 10 mV	>90 dB	
Ref 0.5 mV		70 dB
<b>High Level Input</b>		
* Input Impedance Resistance/Capacitance	150K ohm/220pF	
Input sensitivity * for 1 watt out	20 mV	
for 50 watt out	145 mV	
Signal to Noise Ratio A-Weighted		
(a) with mute off Ref 1 watt out	>80 dB	
Ref 50 watt out	>95 dB	
(b) with mute on Ref 1 watt out	>93 dB	
* Maximum Input Signal	15 V	
Frequency Response, 20-20K Hz	+0.5 dB	
<b>Controls</b>		
Bass Control, Range at 100K Hz	+8 dB	
Treble Control, Range at 10K Hz	+7 dB	
Infrasonic Filter Turn Over Frequency	20K Hz	
Slope (dB/Octave)	12	
Speaker Eq Turn Over Frequency	55	
Slope (dB/Octave)	12	
Mute	-20 dB	
<b>Physical Specifications</b>		
Dimensions WxHxD (inch)	16.5x3.8x12	
(cm)	42x9.6x310	
Net Weight	9.0Kg/19.8 Lbs	

## 7150 TUNER/4150 SPECIFICATIONS

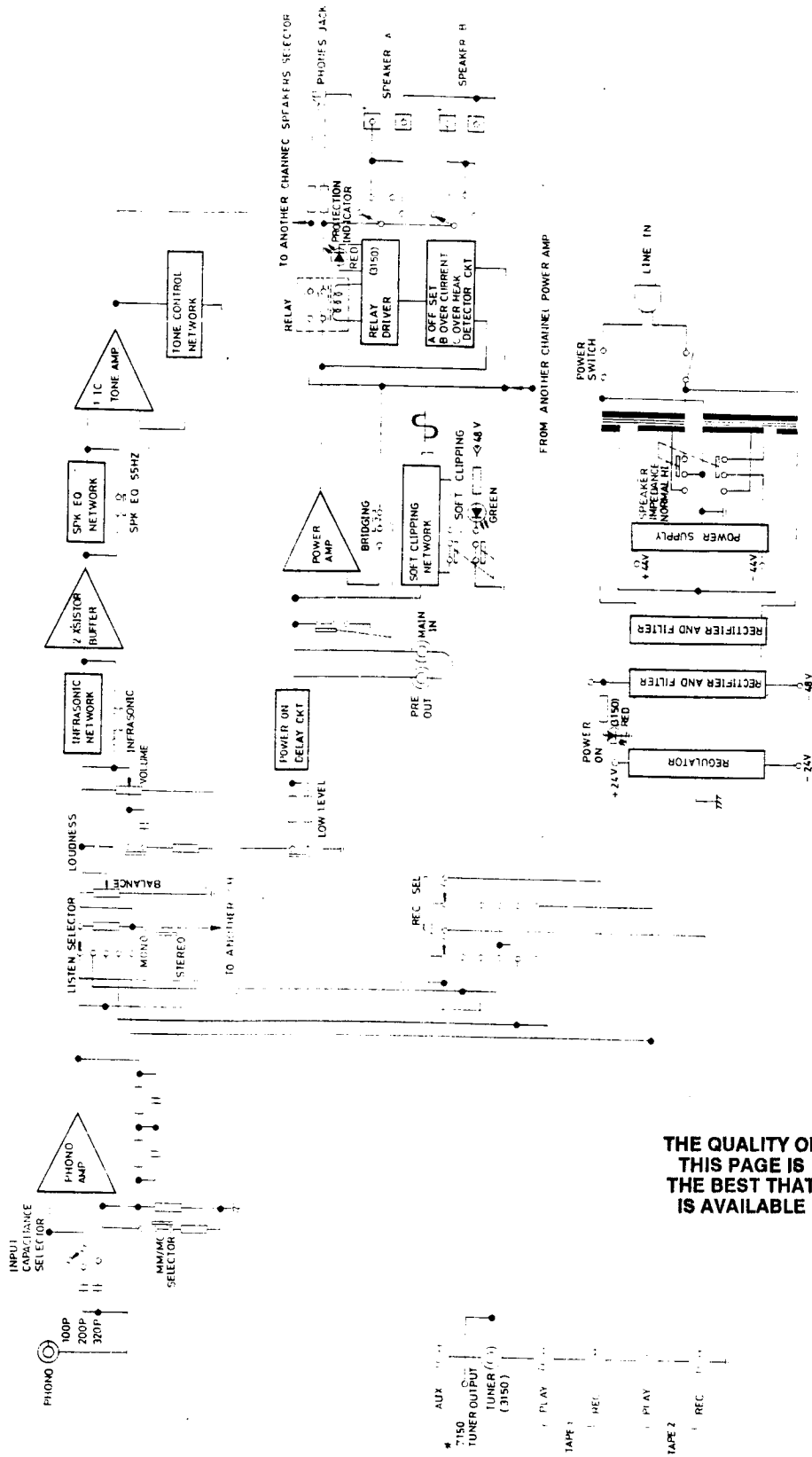
	Normal	Limited
FM Tuner Section		
Input Sensitivity IHF, 30 dB Quieting	1.4 uV	1.8 uV
IHF, 50 dB S/N Mono/Stereo	3.5 uV/30 uV	4.5 uV/40 uV
Signal to Noise Ratio (A Weighted, at 65 dBf) Mono/Stereo	33 dB/75 dB	78 dB/70 dB
Frequency Response, 30-15K Hz	+/-0.5 dB	+/-0.5 dB
De-emphasis Accuracy, 75 usec	+/-0.5 dB	+/-1 dB
Channel Separation 1K Hz	45 dB	40 dB
30-15K Hz	35 dB	30 dB
Selectivity, Alternate Channel (400K Hz)	70 dB	65 dB
Capture Ratio at 45 dBf and 65 dBf	1.0 dB	2.0 dB
AM Suppression at 45 dBf and 65 dBf	58 dB	53 dB
Image Rejection	100 dB	95 dB
IF Rejection	95 dB	90 dB
SCA Rejection	70 dB	65 dB
Pilot Signal Suppression	60 dB	55 dB
T.H.D. at 100% Modulation 1K Hz Mono/Stereo	0.08%/0.1%	0.15%/0.2%
100K Hz Mono/Stereo	0.10%/0.2%	0.2%/0.3%
6K Hz Mono/Stereo	0.10%/0.2%	0.2%/0.3%
T.H.D. Stereo 1K Hz 50%/150%	0.1%/0.2%	0.2%/0.3%
AM Tuner Section		
Usable Sensitivity	300 uV/m	450 uV/m
Selectivity	30 dB	25 dB
Image Rejection	50 dB	45 dB
IF Rejection	50 dB	45 dB

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# 2150 BLOCK DIAGRAM



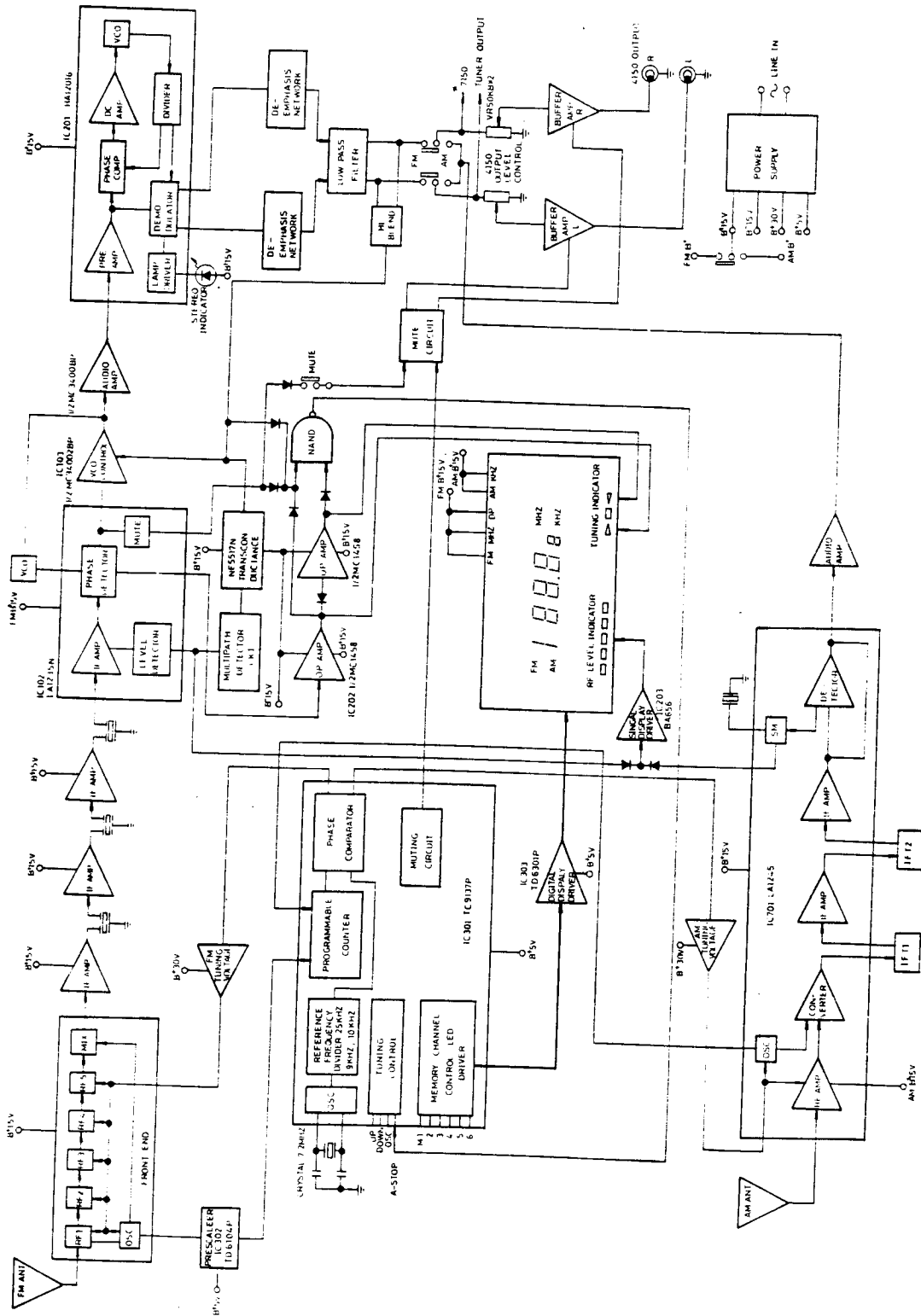
# 7150 AUDIO / 3150 BLOCK DIAGRAM



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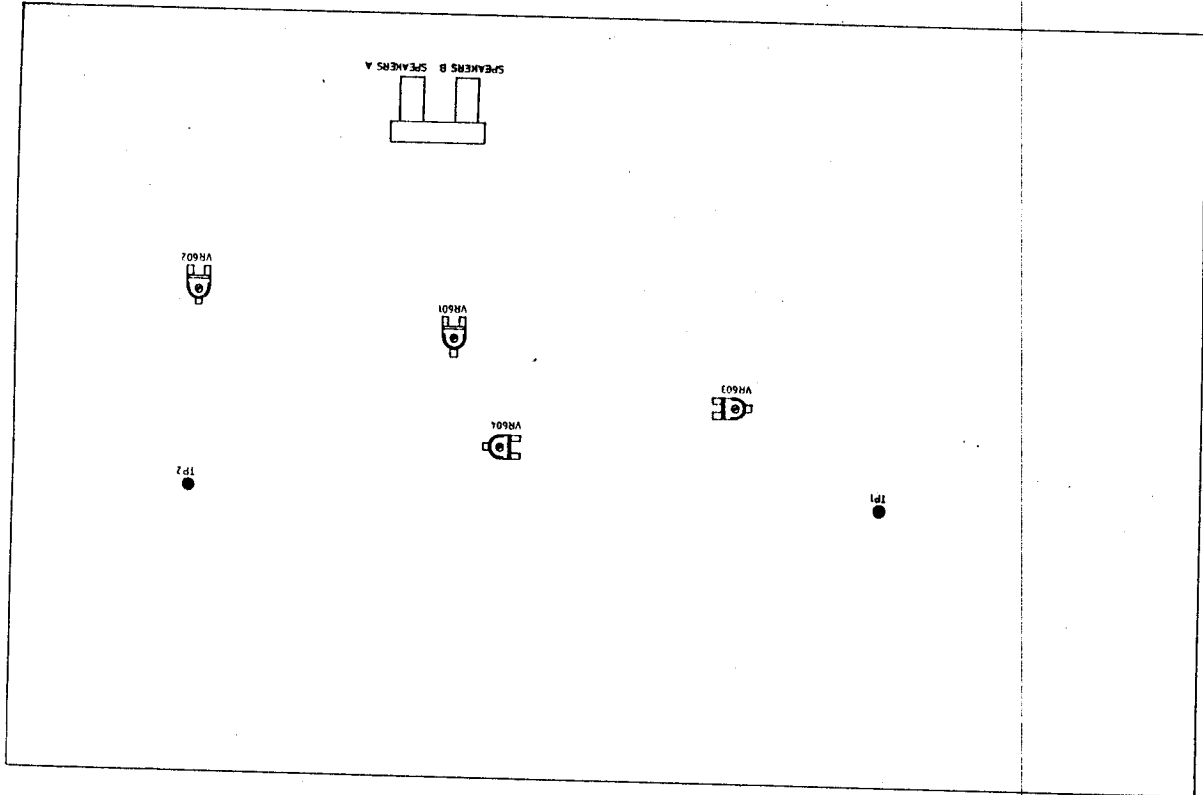


# 7150 TUNER/4150 BLOCK DIAGRAM

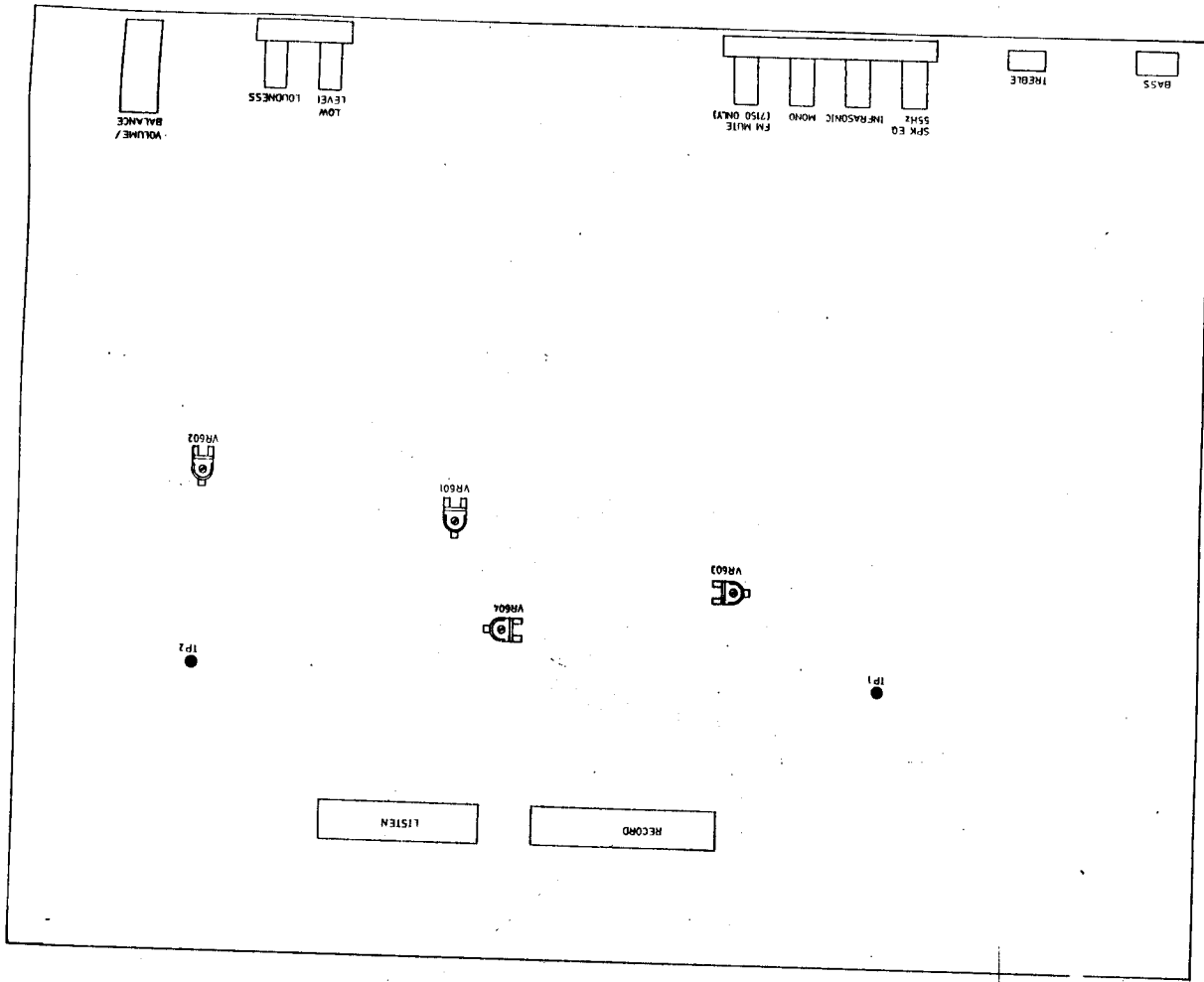


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## 2150 ADJUSTMENT POINT

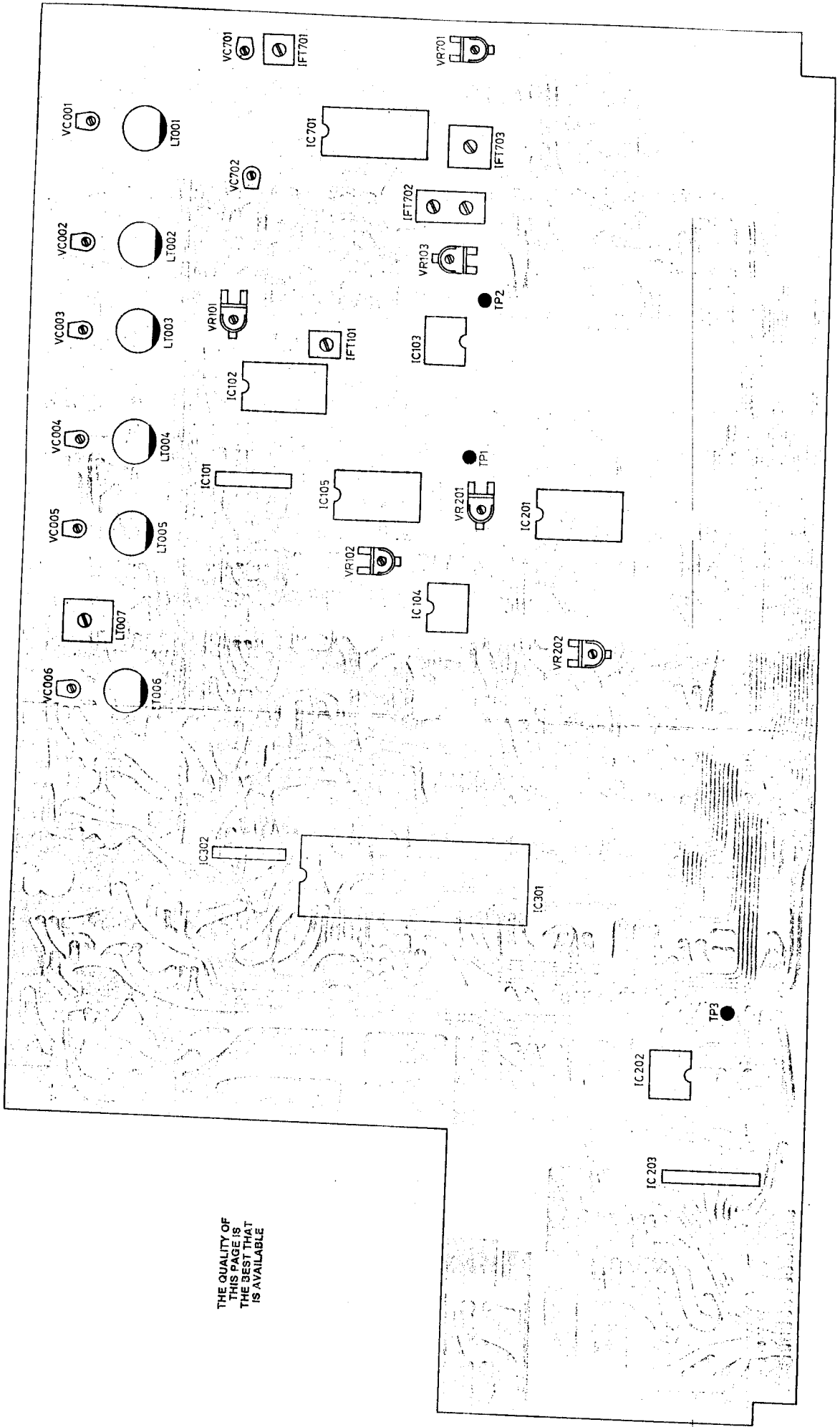


## 7150 AUDIO/3150 ADJUSTMENT POINT



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# 7150 TUNER/4150 ALIGNMENT POINT



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# 2150/3150/4150/7150 ALIGNMENT PROCEDURE

## 2150 ADJUSTMENT

### DC OFF-SET ALIGNMENT

1. Set on the power for 5 minutes pre-heating.
2. For L (R) channel alignment: Connect probe of DC millivolt-meter to L (R) channel speaker terminals, then adjust VR-601 (VR-602) till the reading are closed to 0mV.

### IDLE CURRENT ALIGNMENT

1. Turn VR-603 to fully clockwise position and VR-604 to fully counter-clockwise position.
2. Set on the power for 5 minutes pre-heating.
3. Remove the load in speaker terminals.
4. Connect one probe of DC millivolt-meter to L (R) channel speaker terminal "+", the other to point TP1 (TP2) on main PCB foiling side, adjust VR-603 (VR-604) till the reading is between 4.4mV and 11mV.

## 3150/7150 (AUDIO) ALIGNMENT

### DC OFF-SET ALIGNMENT

1. Set on the power for 5 minutes pre-heating.
2. Set volume control to minimum position and speaker selector switch to "A+B" position.
3. For L (R) channel alignment: Connect probe of DC millivolt-meter to L (R) channel speaker terminals, then adjust VR-601 (VR-602) till the reading are closed to 0mV.

### IDLE CURRENT ALIGNMENT

1. Turn VR-603 to fully clockwise position and VR-604 to fully counter-clockwise position.
2. Set on the power for 5 minutes pre-heating.
3. Set volume control to minimum position and speaker selector switch to "A+B" position.
4. Remove the load on speaker terminals.
5. Connect one probe of DC millivolt-meter to L (R) channel speaker terminal "+", the other to point TP1 (TP2) on main PCB. Foiling side, adjust VR-603 (VR-604) till the reading is between 4.4mV and 11mV.

## 4150/7150 (TUNER) ALIGNMENT

1. FM MPX ALIGNMENT a. Selector Switch in FM position  
b. AC Line Voltage at Rated Voltage  
c. Monitor OUTPUT at record OUTPUT  
d. FM SG is external modulated by stereo SG and connected to FM 300 OHM antenna terminal on the rear panel through FM dummy antenna.

SECTION	Step	FM SG	Stereo Sg	Dial Setting	Indicator	Adjustment	Adjust For	
MPX Pilot	1	98 MHz	—	98 MHz	Connect frequency Counter To Pin TP1	VR201	76 kHz±50 Hz	
	2	98 MHz	10% 19 kHz 90% L+R	98 MHz	—	VR201	Stereo LED Light	
Stereo 50 dB quieting	1	98 MHz	10% 19 kHz pilot L only	98 MHz	Connect V.T.V.M or Oscilloscope to R REC out	VR202	Minimum OUTPUT	
	2			98 MHz	Connect V.T.V.M or Oscilloscope to L REC out	VR202	Minimum OUTPUT	
	3			Repeat Step 1 and Step 2				
	4	IF there is an excessive difference between leak-free effect of both channels, slightly adjust VR202 so that the levels of signal leakage of both channels are equal.						
		98 MHz	10% 19 kHz pilot.0% L+R, L-R.	98 MHz	V.T.V.M or Oscilloscope	VR102	Just minimum OUTPUT	

- a. Selector Switch in FM position
- b. AC Line Voltage at Rated Voltage
- c. Monitor OUTPUT at record OUTPUT

SECTION	FM IF	FM RF	FM Sens	FM Mute	FM SG	Carrier	Mod.	Dial Setting	Indicator	Adjustment	Adjust for
						—	—	point of non-interference	Digital Voltage Meter	I FT 101	to pin TP3 Voltage 0V
						90 MHz	100% Mod 400 Hz	90 MHz	Digital Voltage Meter	LT 606	Tuning Voltage 4.3V ±0.1V
						106MHz	—	106MHz	Digital Voltage Meter	VC006	Tuning Voltage 18.7V±0.2V
						Repeat Step 1 and Step 2					
						90 MHz	100% Mod 400 Hz	90 MHz	V.T.V.M	LT001 to LT005	Maximum OUTPUT
						106MHz	400 Hz	106 MHz	Oscilloscope	VC001 to VT005	Maximum OUTPUT
						98 MHz	400 Hz	98 MHz	Oscilloscope	LT007	Maximum OUTPUT
						Repeat Step 1.2 and Step 3					
						Muting Push Switch "ON"					
						Adjust attenuator of FM SG for Antenna Input 14dB					
						98 MHz	100% Mod 400 Hz	98 MHz	V.T.V.M Oscilloscope	VR 101	OUTPUT just disappear
						Increase FM SG OUTPUT 4dB more to get fully audio OUTPUT					
						IF fully audio OUTPUT cannot get, repeat Step 1.2.3					

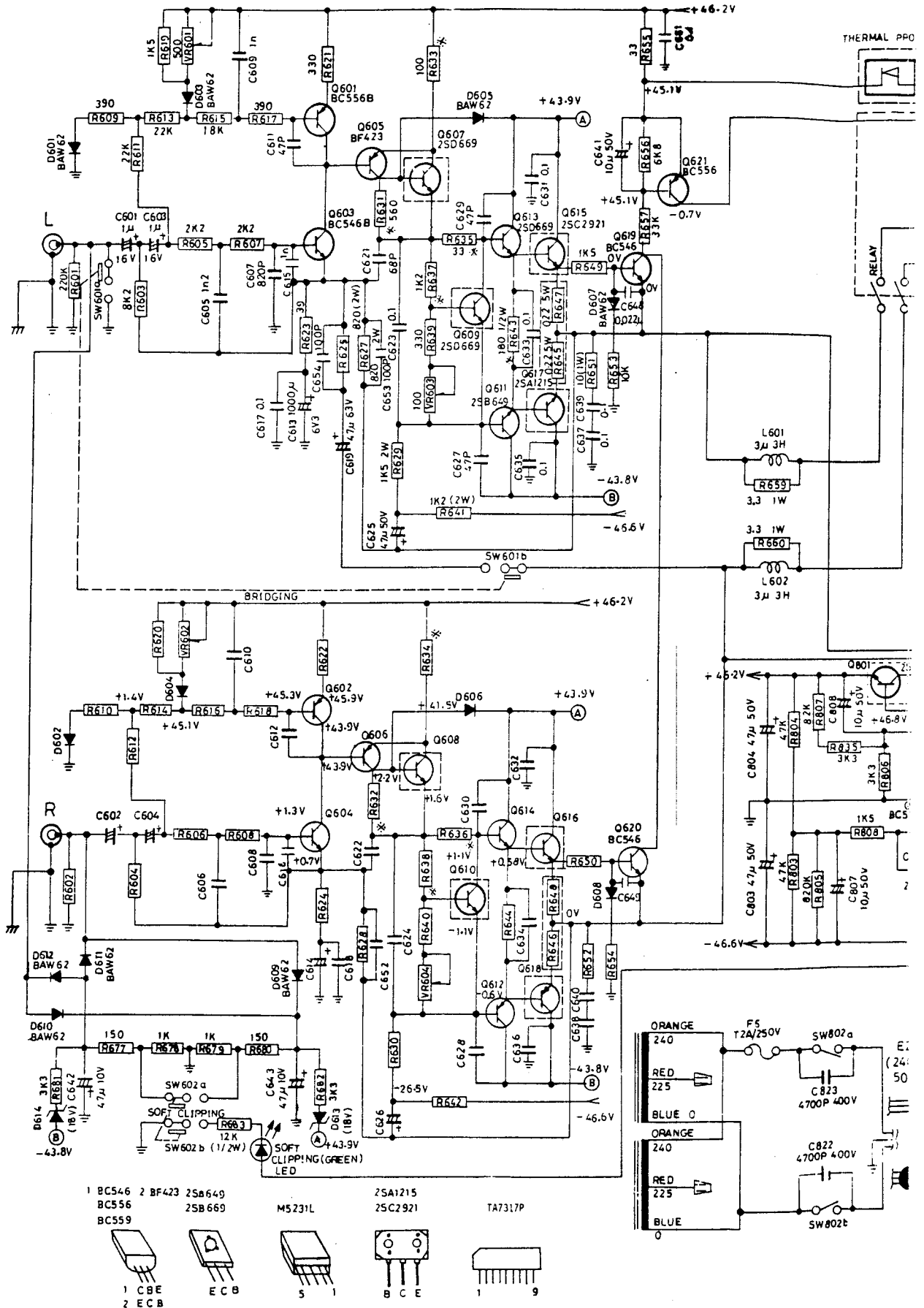
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## 3. AM ALIGNMENT

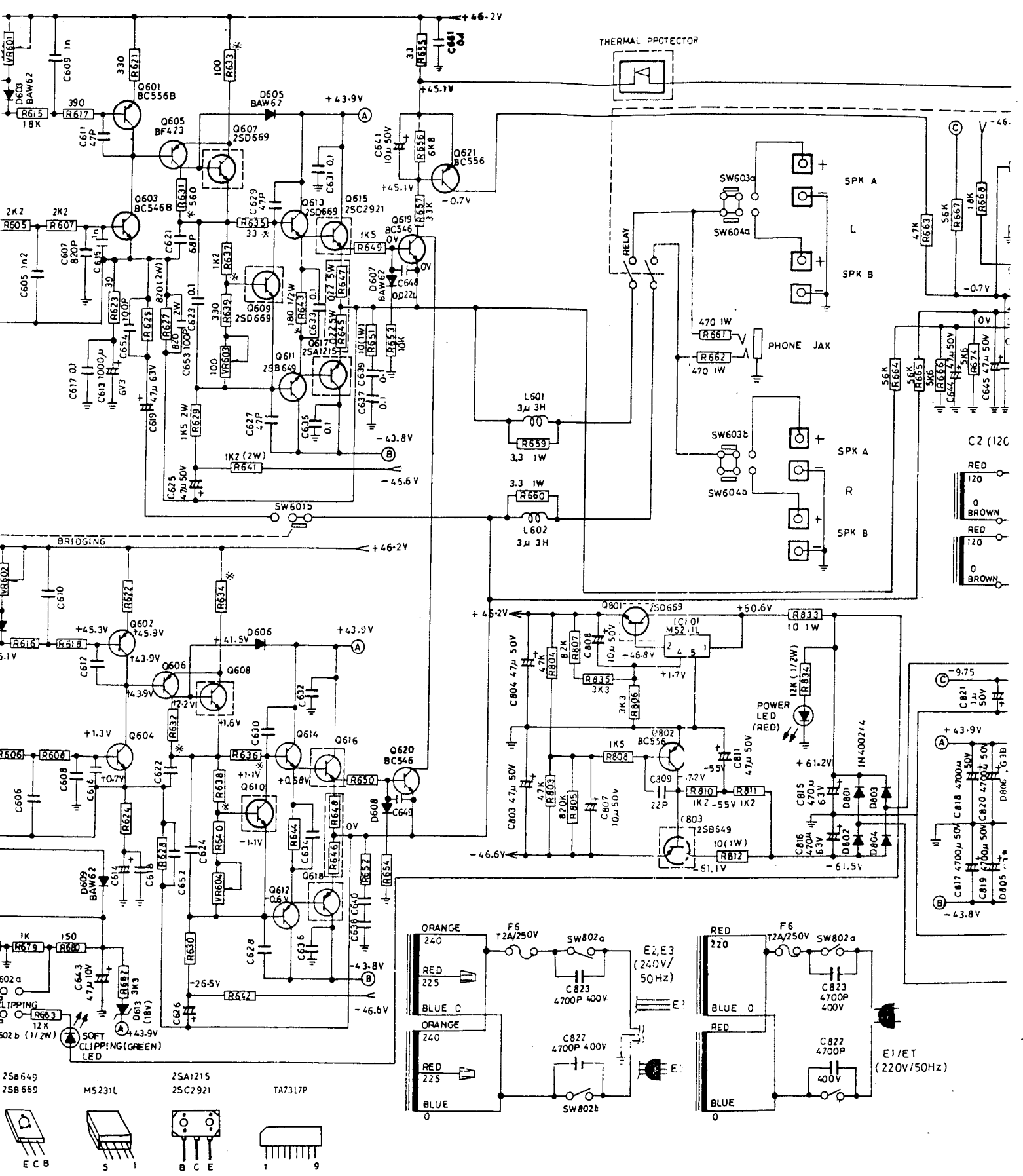
SECTION	AM IF	AM Range	AM Sens	AM SG	Carrier	Mod.	Dial Setting	Indicator	Adjustment	Adjust for
					Hot side of SG OUTPUT through 200pF to AM ANT. trimmer	30% Mod 400Hz	point of non-interference	V.T.V.M. or Oscilloscope	I FT 703 I FT 702	Maximum OUTPUT
					Hot side of SG OUTPUT through a loop ANT radiate to AM ANT BAR vertically, and keep 60cm distance.	30% Mod 400Hz	600kHz	Digital Voltage Meter	I FT 701	Tuning Voltage 4.5V±0.1
					Repeat Step 1 and Step 2	400Hz	1400kHz	Digital Voltage Meter	VC 701	Tuning Voltage 20.5V±0.2V
					Hot side of SG OUTPUT through a loop ANT radiate to AM ANT BAR vertically, and keep 60cm distance.	30% Mod 400Hz	600kHz	V.T.V.M or Oscilloscope	ANT BAR	Maximum OUTPUT
					Repeat Step 1 and Step 2	400Hz	1400kHz	Oscilloscope	VC 702	Maximum OUTPUT

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# 2150 CIRCUIT DIAGRAM

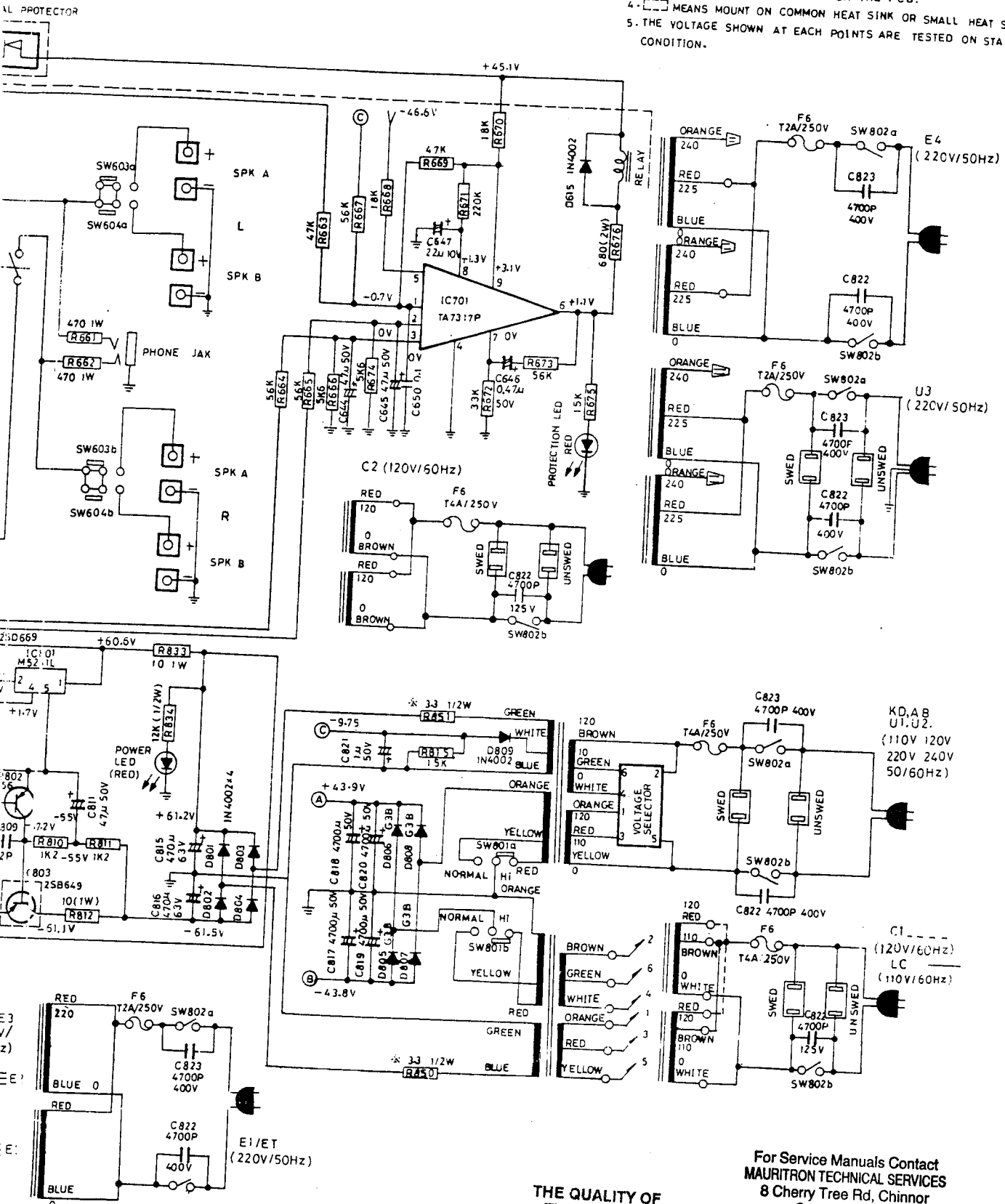


# DIAGRAM



NOTES

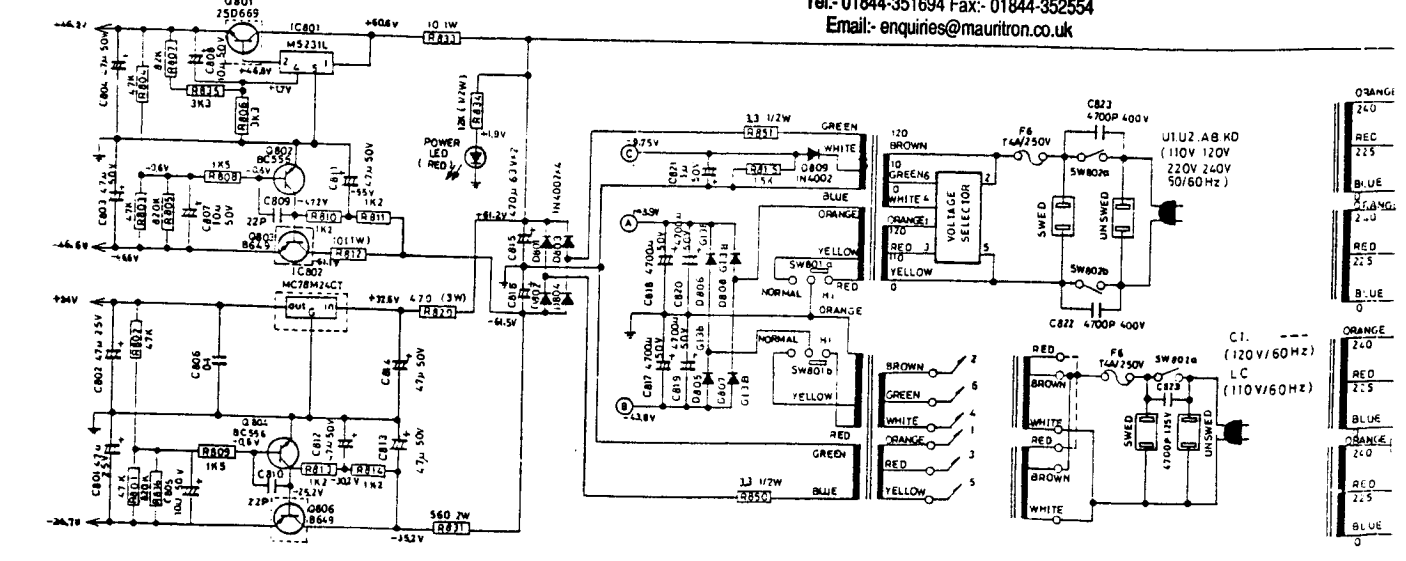
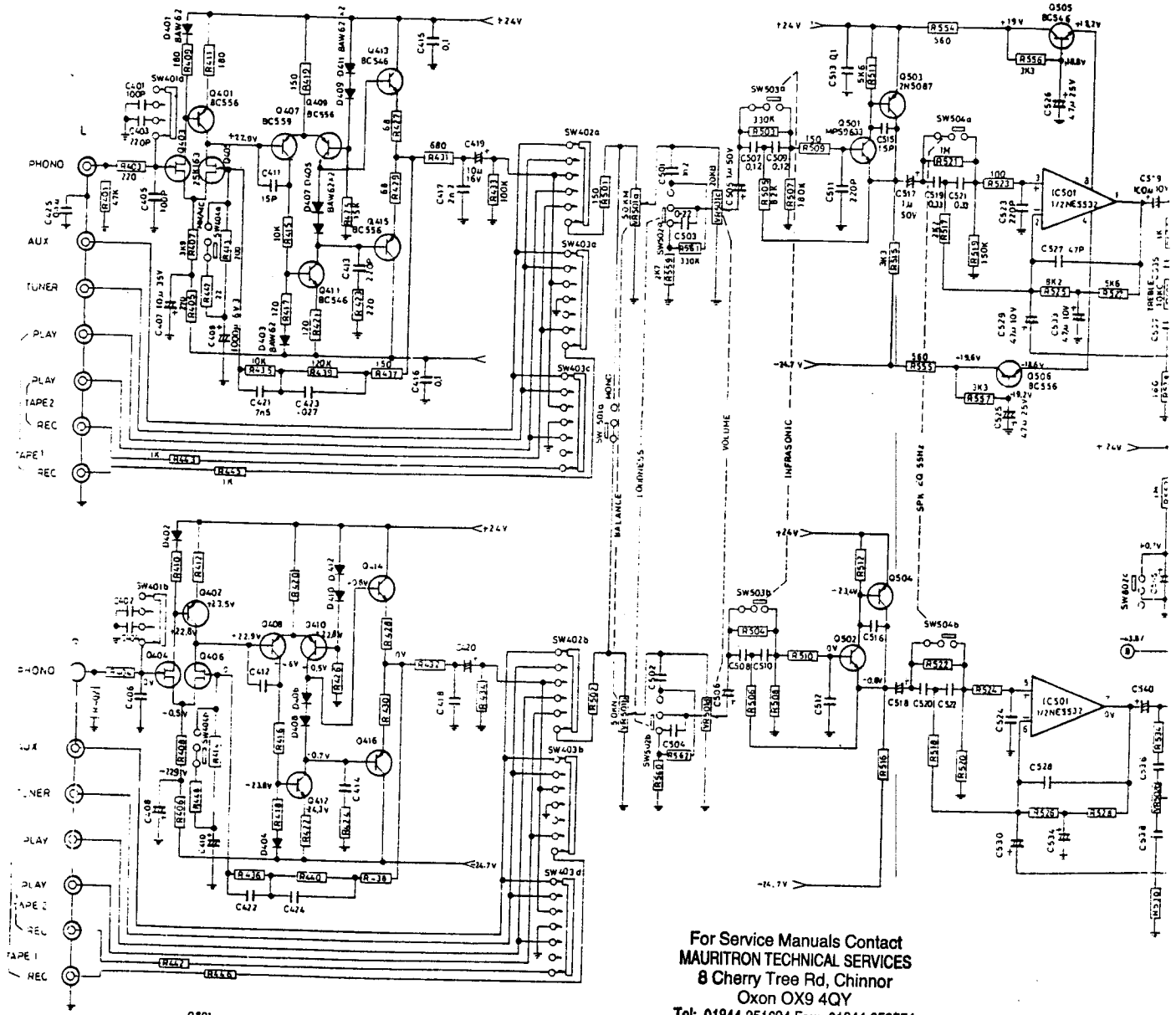
- 1. ALL RESISTORS ARE 1/4W ±5% CARBON UNLESS OTHERWISE SPECIFIED.
- 2. CAPACITANCE ARE IN UF UNLESS OTHERWISE SPECIFIED.
- 3. \* MEANS RESISTOR STAND UP ON THE PCB.
- 4. □ MEANS MOUNT ON COMMON HEAT SINK OR SMALL HEAT SINK.
- 5. THE VOLTAGE SHOWN AT EACH POINTS ARE TESTED ON STATION CONDITION.



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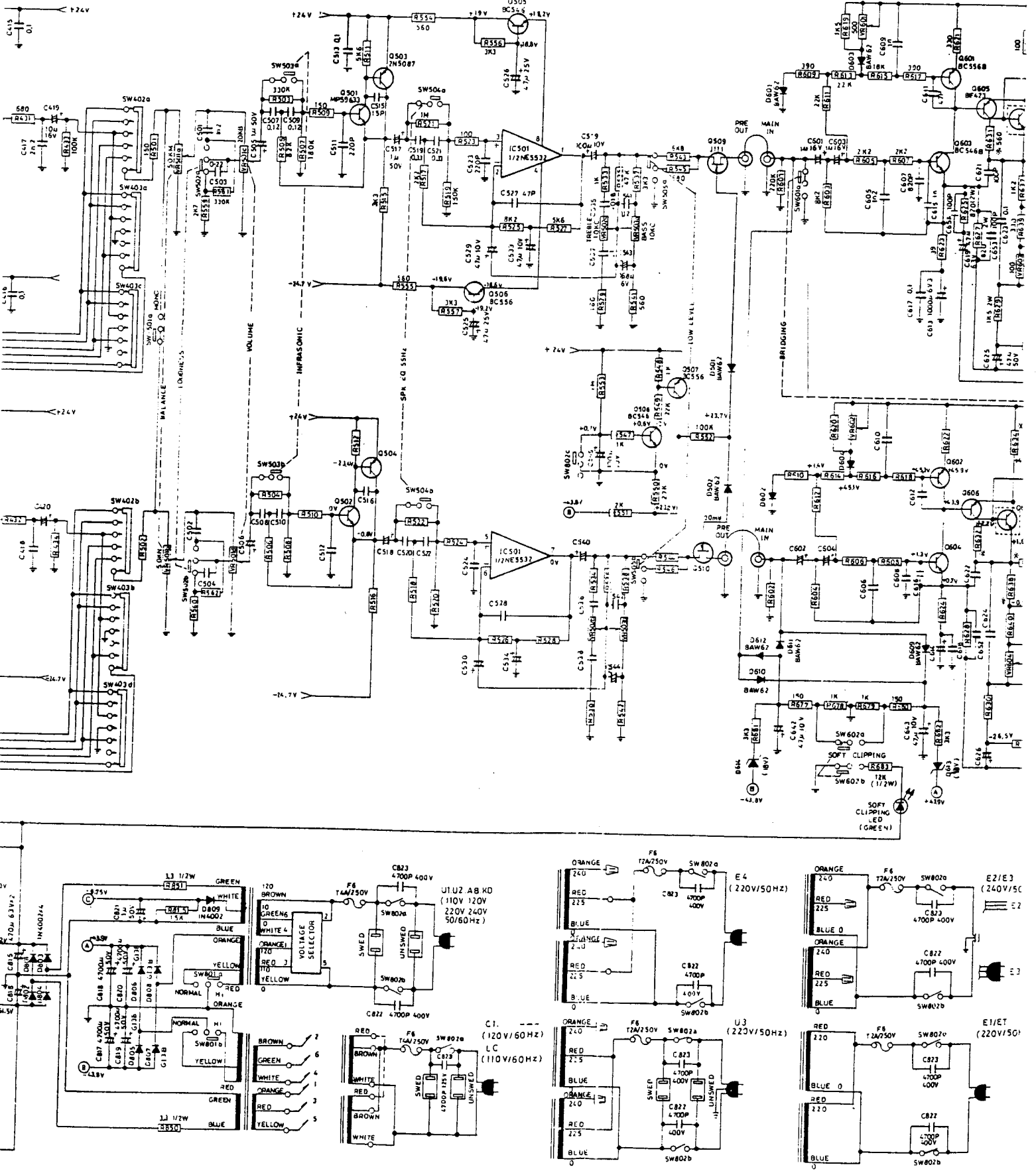
# 3150 CIRCUIT DIAGRAM



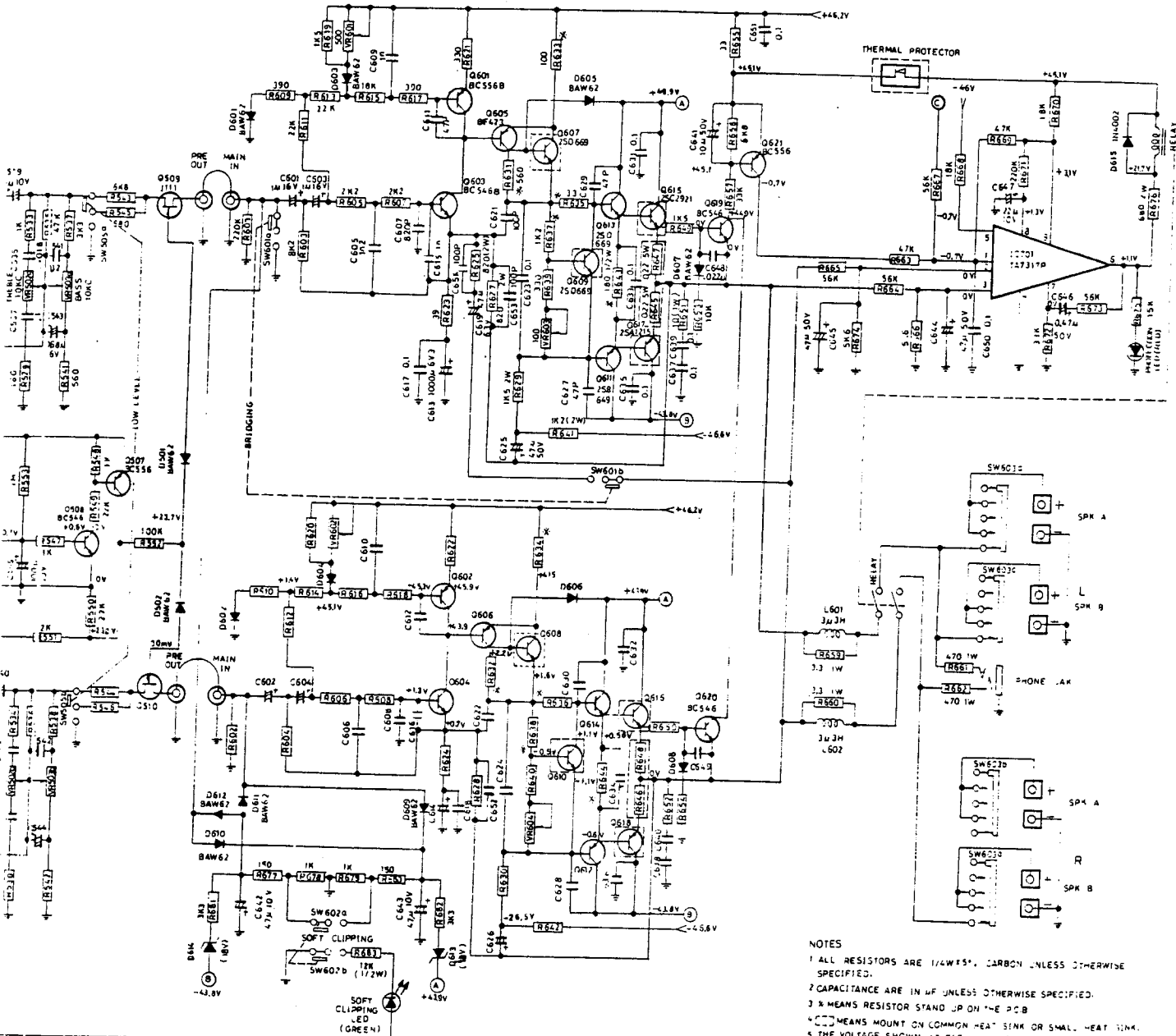
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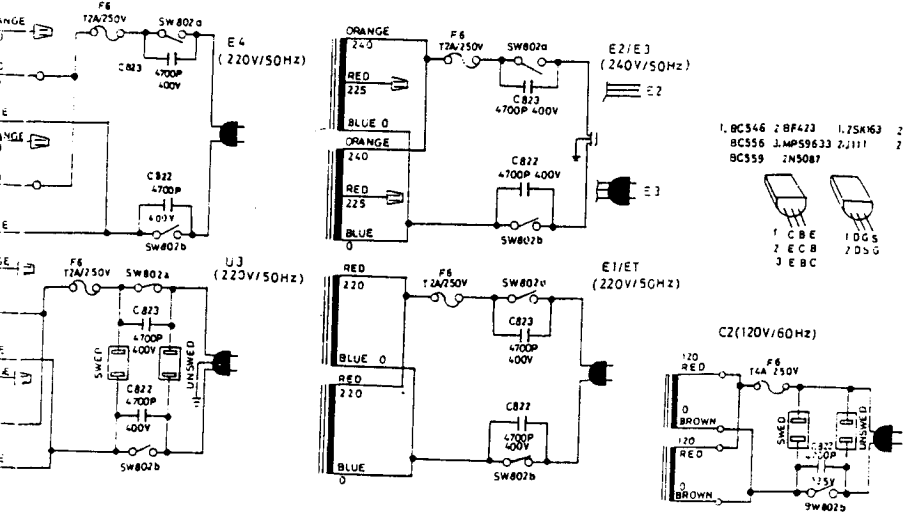
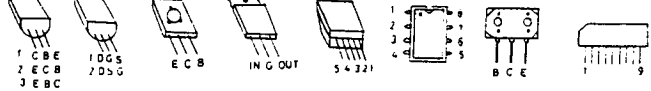
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 3 % MEANS RESISTOR STAND UP ON THE PCB  
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 5 THE VOLTAGE SHOWN AT EACH POINT IS TESTED ON STATION CONDITION.

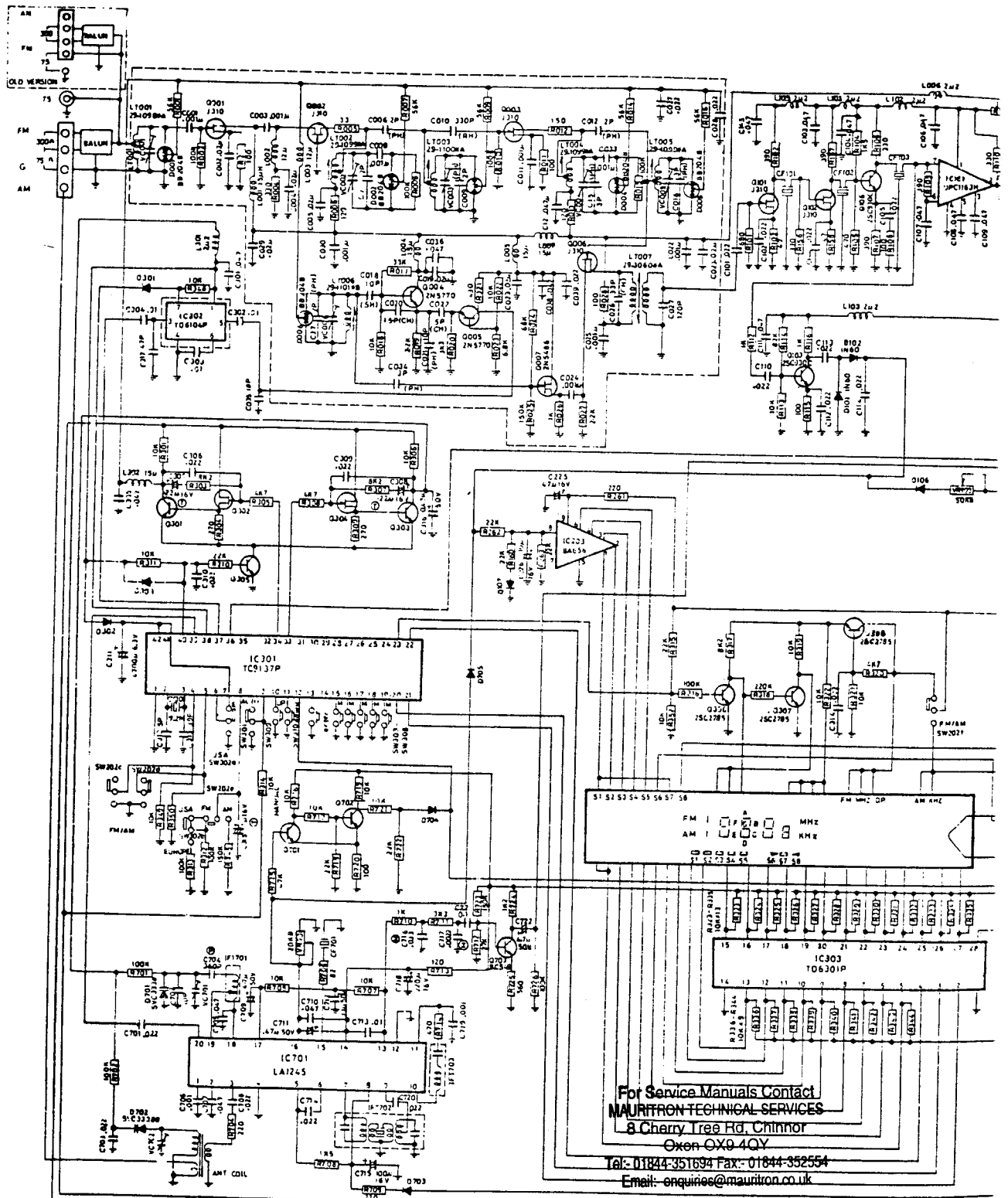
SW801: IMPEDANCE SELECTORS SW.  
 SW802: POWER SW.  
 SW401: PHONO INPUT CAPACITANCE SELECTOR SW.  
 SW402: LISTEN SELECTOR SW.  
 SW403: RECORD SELECTOR SW.

- |          |            |           |          |           |        |        |         |         |
|----------|------------|-----------|----------|-----------|--------|--------|---------|---------|
| 1. BC546 | 2. BF423   | 1. 25K463 | 2. 5B649 | MC78M24CT | MS221L | NE5532 | 25A1215 | 1A7317P |
| BC555    | 3. MP59633 | 2. J111   | 2. 5B669 |           |        |        | 25C7921 |         |

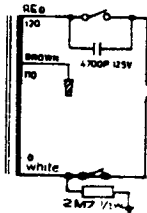


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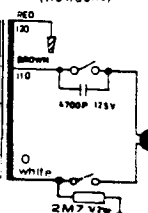
# 7150 TUNER / 4150 CIRCUIT DIAGRAM



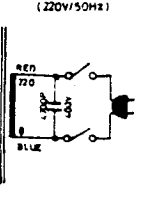
FOR: C1  
(120V/60Hz)



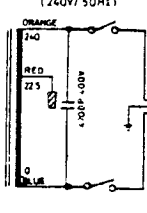
FOR: L C  
(110V/60Hz)



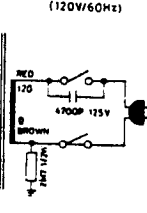
FOR: E1, E2  
(220V/50Hz)



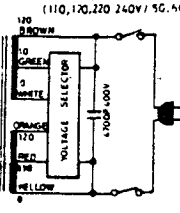
FOR: E2, E3  
(240V/50Hz)



FOR: C2  
(120V/60Hz)

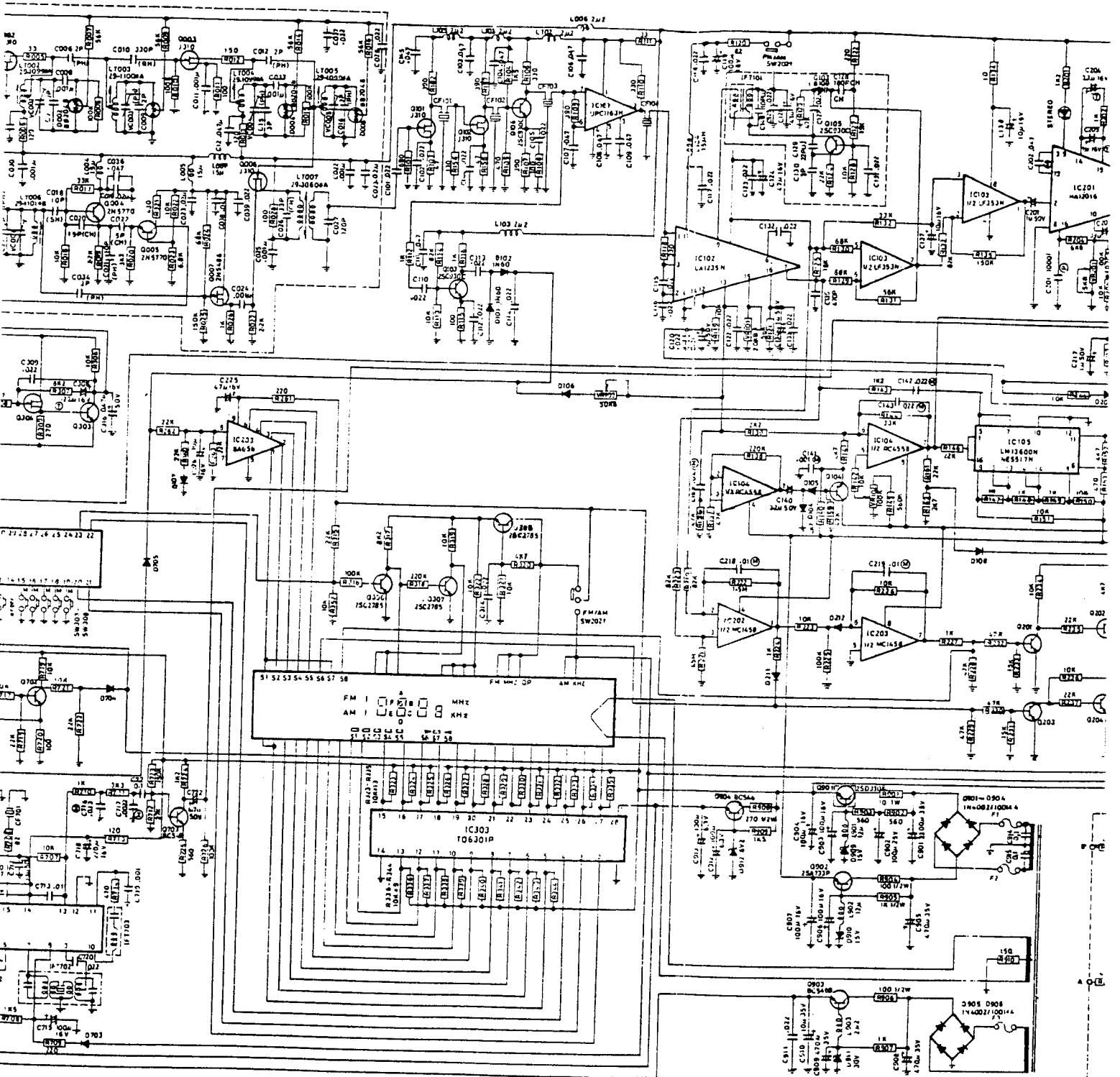


FOR: U1, U2, AB, X0,  
(110, 120, 220 240V / 50, 60)



# CIRCUIT DIAGRAM

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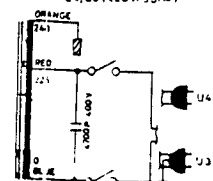
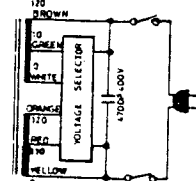
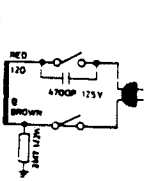
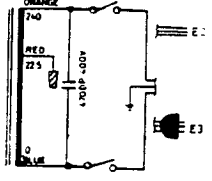
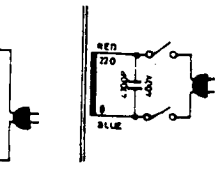
FOR: E1, E2  
(220V/50Hz)

FOR: E2, E3  
(240V/50Hz)

FOR: C2  
(120V/60Hz)

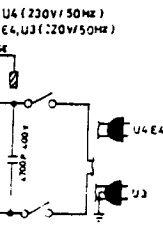
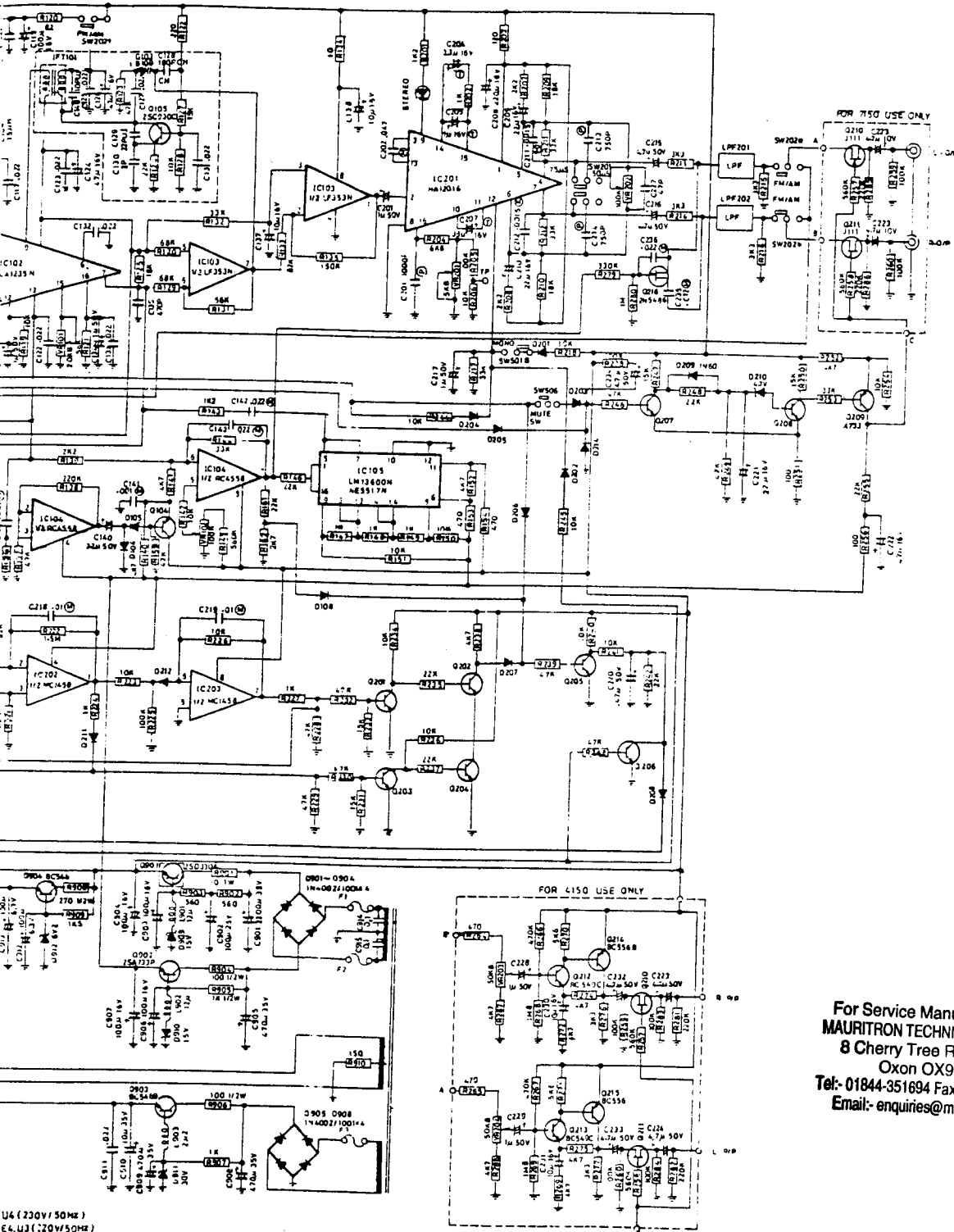
FOR: U1, U2, AB, K0,  
(110, 120, 220 240V/ 50, 60Hz)

FOR: U4 (230V/50Hz)  
E4, U3 (220V/50Hz)



NOTE: ALL THE RESISTORS ARE 1/4W CARBON FILM RESISTOR UNLESS OTHERWISE SPECIFIED.  
2 ALL THE TRANSISTORS ARE 75C1498 UNLESS OTHERWISE SPECIFIED  
3 ALL THE DIODES ARE 1N4148 UNLESS OTHERWISE SPECIFIED  
P1/P2/P3 ALTING:  
1 1500MA/150V FOR E1, E2, E3, E4, U2, U3  
2 500MA/250V FOR U1, C2, C3, C4, U1

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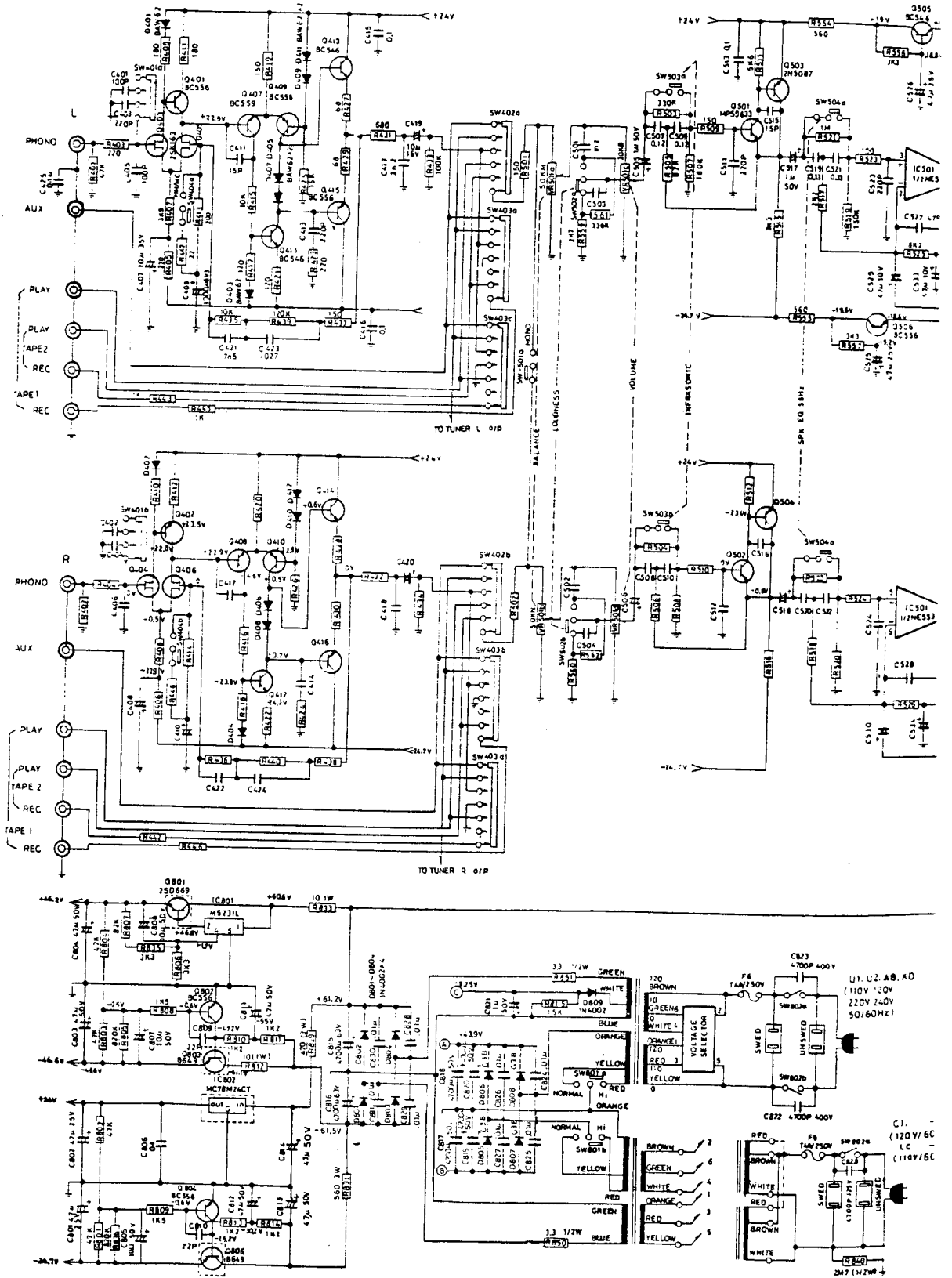


NOTE: ALL THE RESISTORS ARE 1/4 W CARBON FILM RESISTOR UNLESS OTHERWISE SPECIFIED.  
 2 ALL THE MAIN TRANSISTORS ARE 2N3108/9 UNLESS OTHERWISE SPECIFIED  
 3 ALL THE DIODES ARE 1N4148 UNLESS OTHERWISE SPECIFIED  
 P1717P3 RATING:  
 1 1500MA 150V FOR E1, E2, E3, E4, U2, R0  
 2 500MA 750V FOR L1, C7, L, C, AB, U1

For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
 8 Cherry Tree Rd, Chinnor  
 Oxon OX9 4QY  
 Tel:- 01844-351694 Fax:- 01844-352554  
 Email:- enquiries@mauritron.co.uk

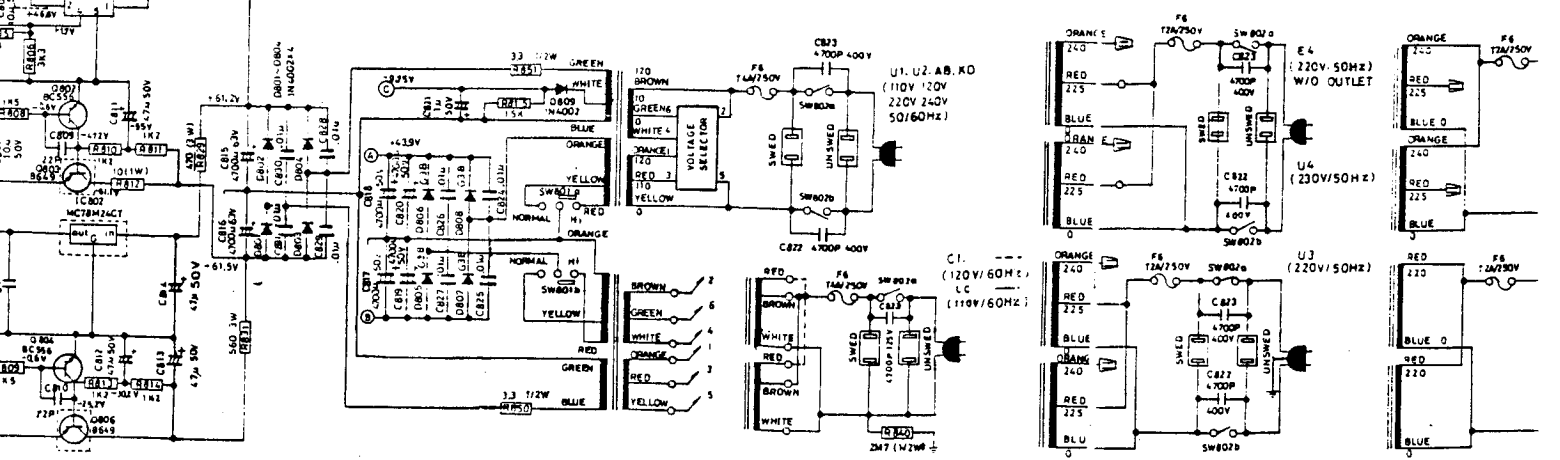
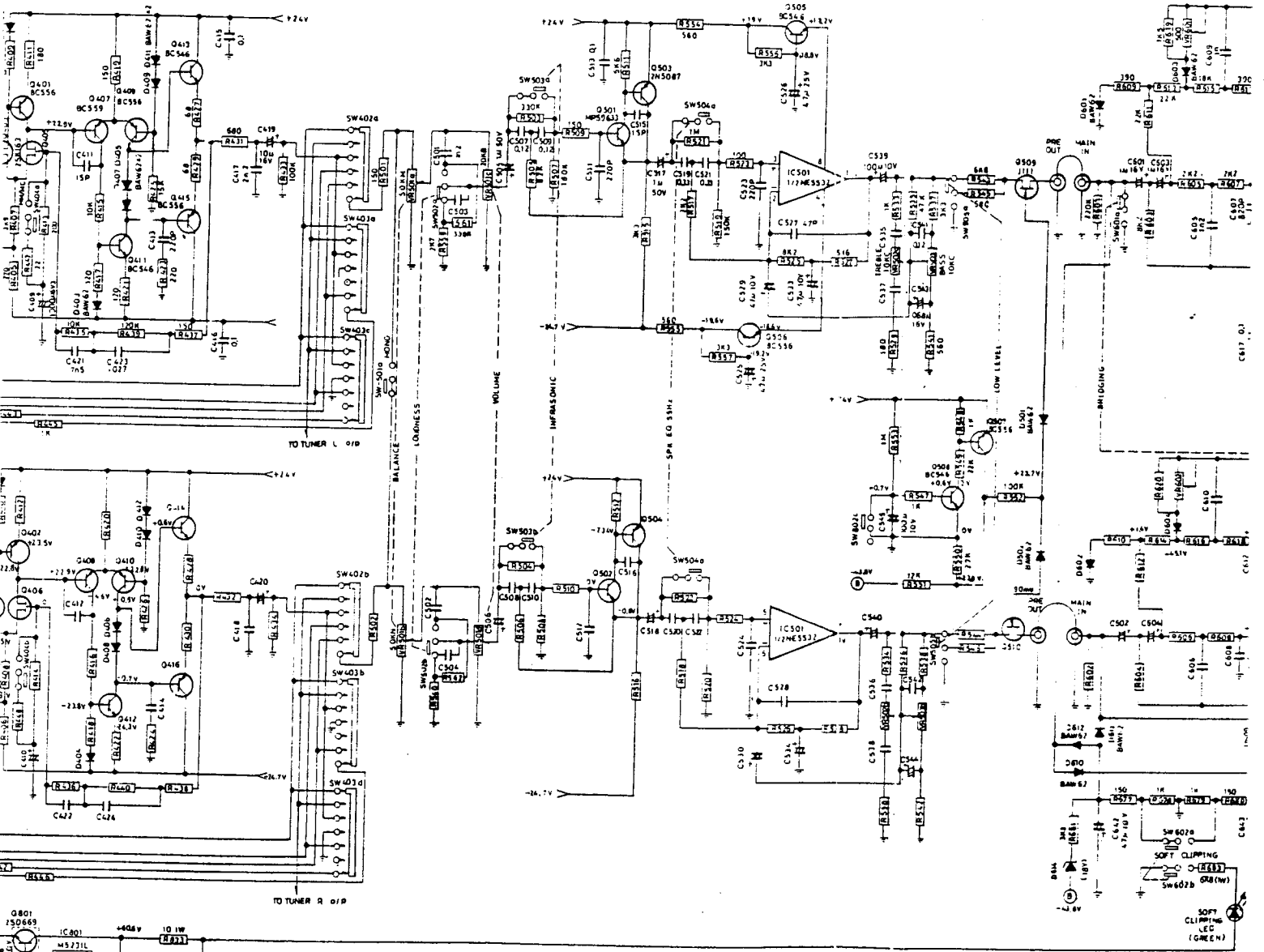
# 7150 AUDIO CIRCUIT DIAGRAM

For Service Manuals Contact  
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 8 Cherry Tree Rd, Chinnor  
 Oxon OX9 4QY  
 Tel: 01844-351694 Fax: 01844-352554  
 Email: enquiries@mauritron.co.uk

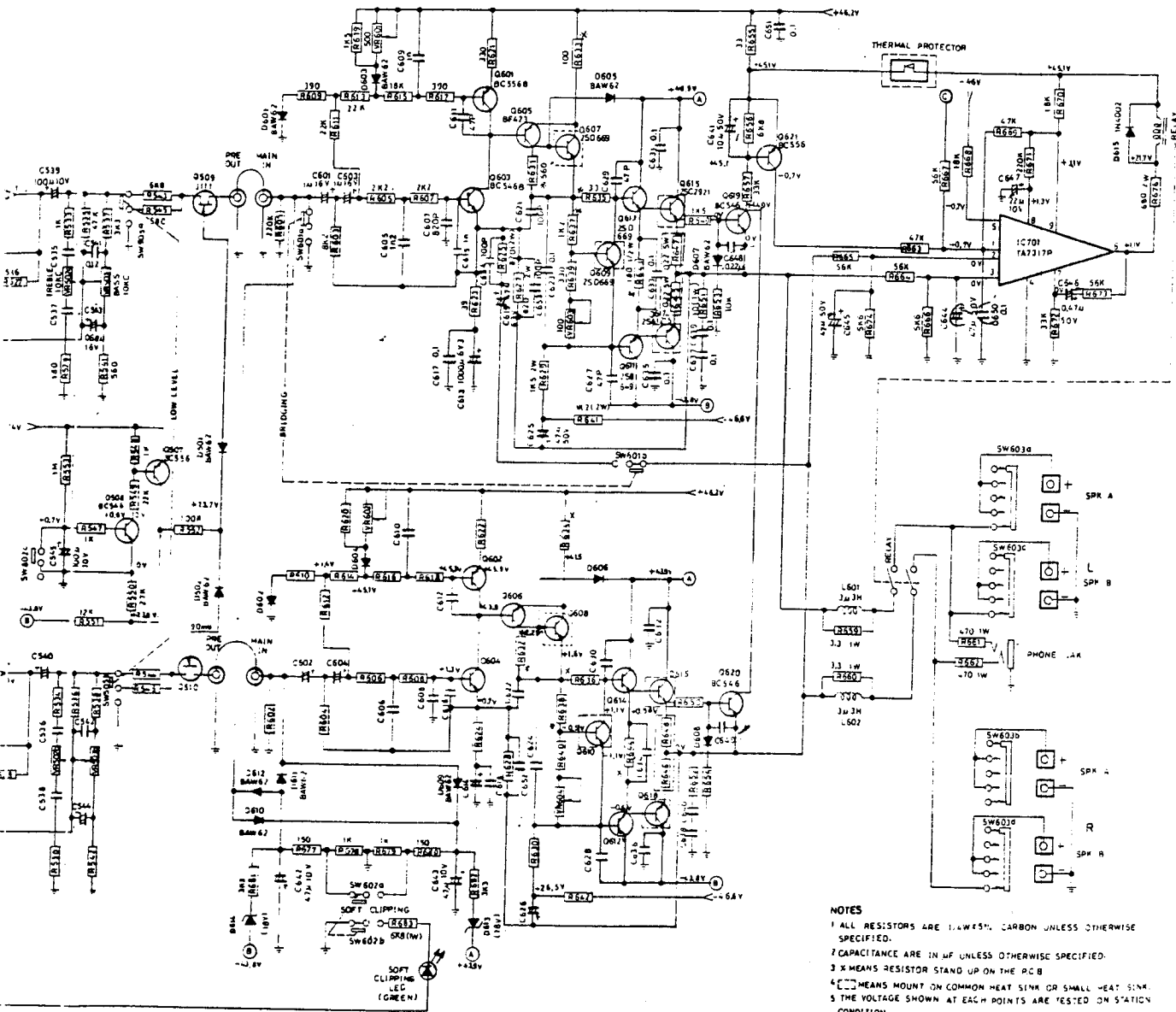


# CIRCUIT DIAGRAM

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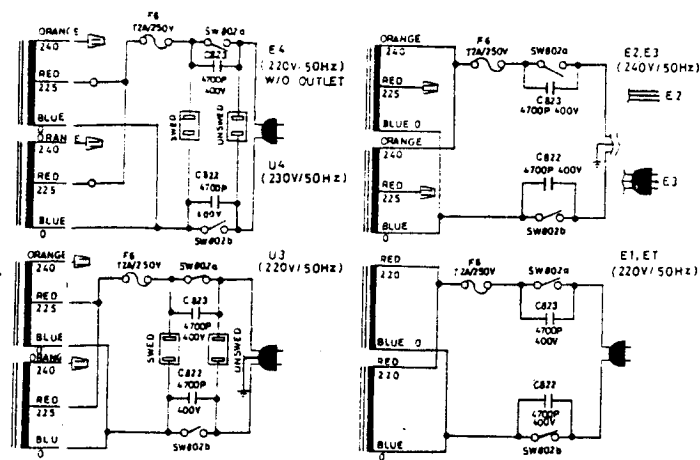
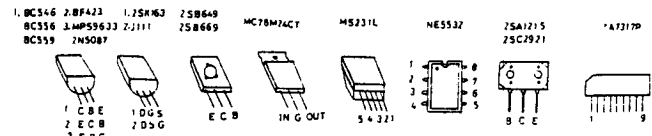


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**NOTES**  
 1 ALL RESISTORS ARE 1% W5% CARBON UNLESS OTHERWISE SPECIFIED.  
 2 CAPACITANCE ARE IN µF UNLESS OTHERWISE SPECIFIED.  
 3 X MEANS RESISTOR STAND UP ON THE PCB  
 4 □ MEANS MOUNT ON COMMON HEAT SINK OR SMALL HEAT SINK.  
 5 THE VOLTAGE SHOWN AT EACH POINTS ARE TESTED ON STATION CONDITION.

SWB01: IMPEDANCE SELECTORS SW.  
 SWB02: POWER SW.  
 SWA01: PHONO INPUT CAPACITANCE SELECTOR SW.  
 SWA02: LISTEN SELECTOR SW.  
 SWA03: RECORD SELECTOR SW.



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 Email: enquiries@mauritron.co.uk

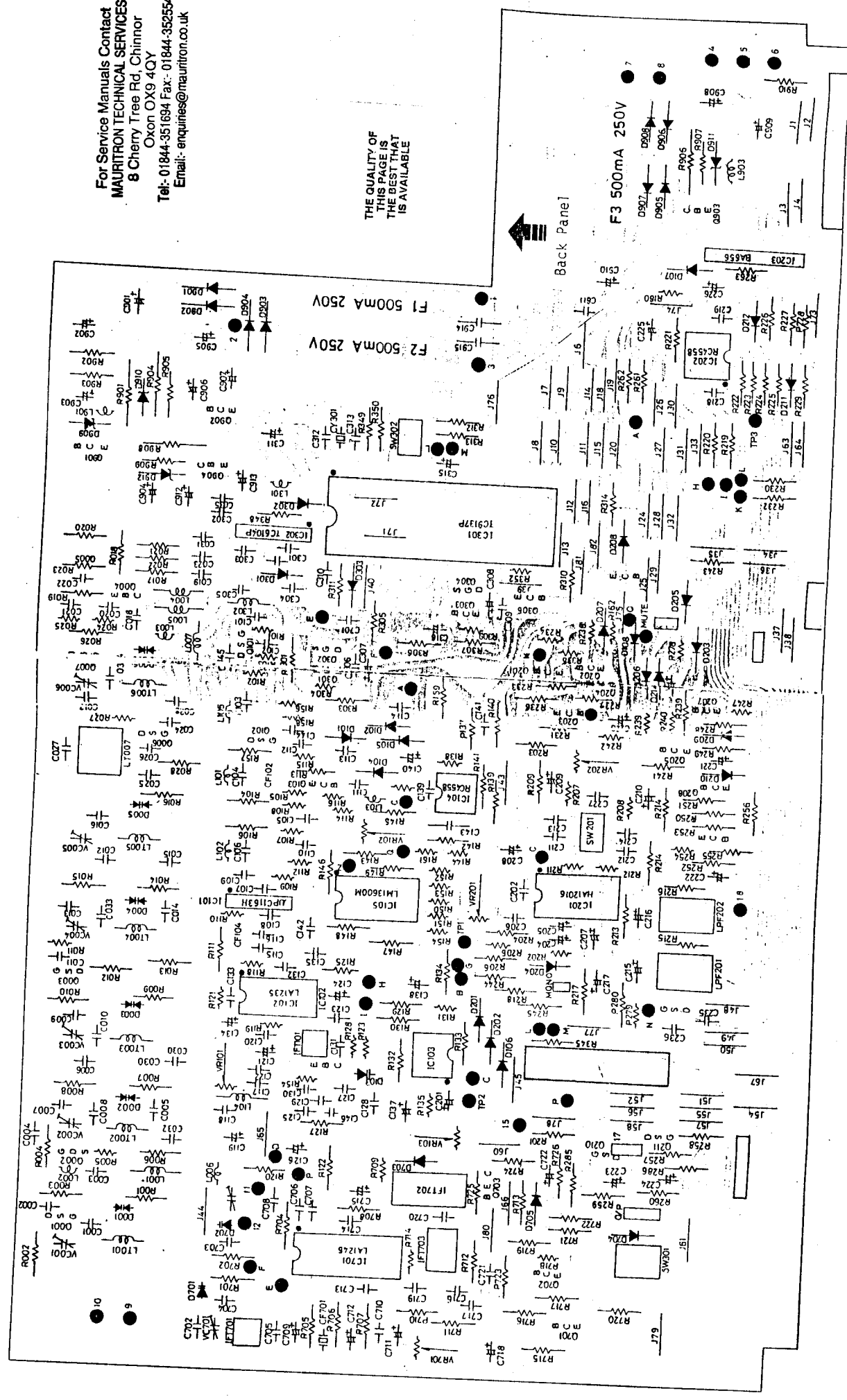




# 7150 TUNER /4150 PCB PARTS LOCATION (BOTTOM VIEW)

For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
 8 Cherry Tree Rd, Chinnor  
 Oxon OX9 4QY  
 Tel: 01844-351694 Fax: 01844-352554  
 Email: enquiries@mauritron.co.uk

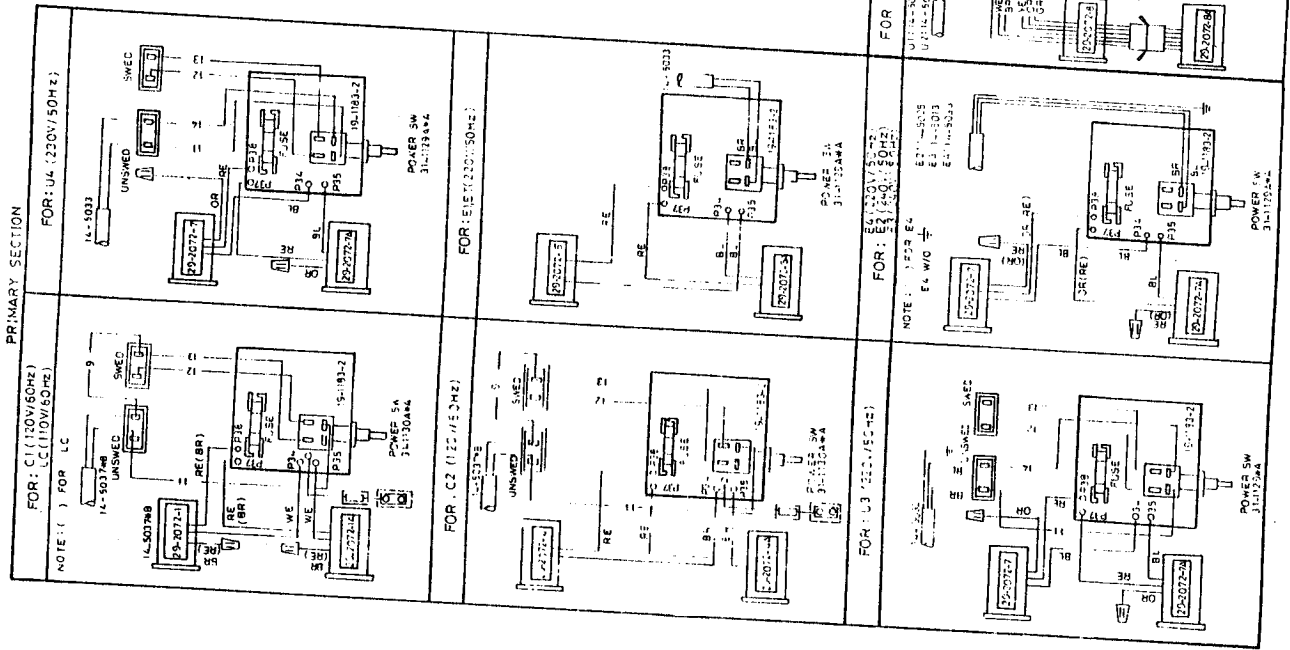
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# 2150 WIRING DIAGRAM

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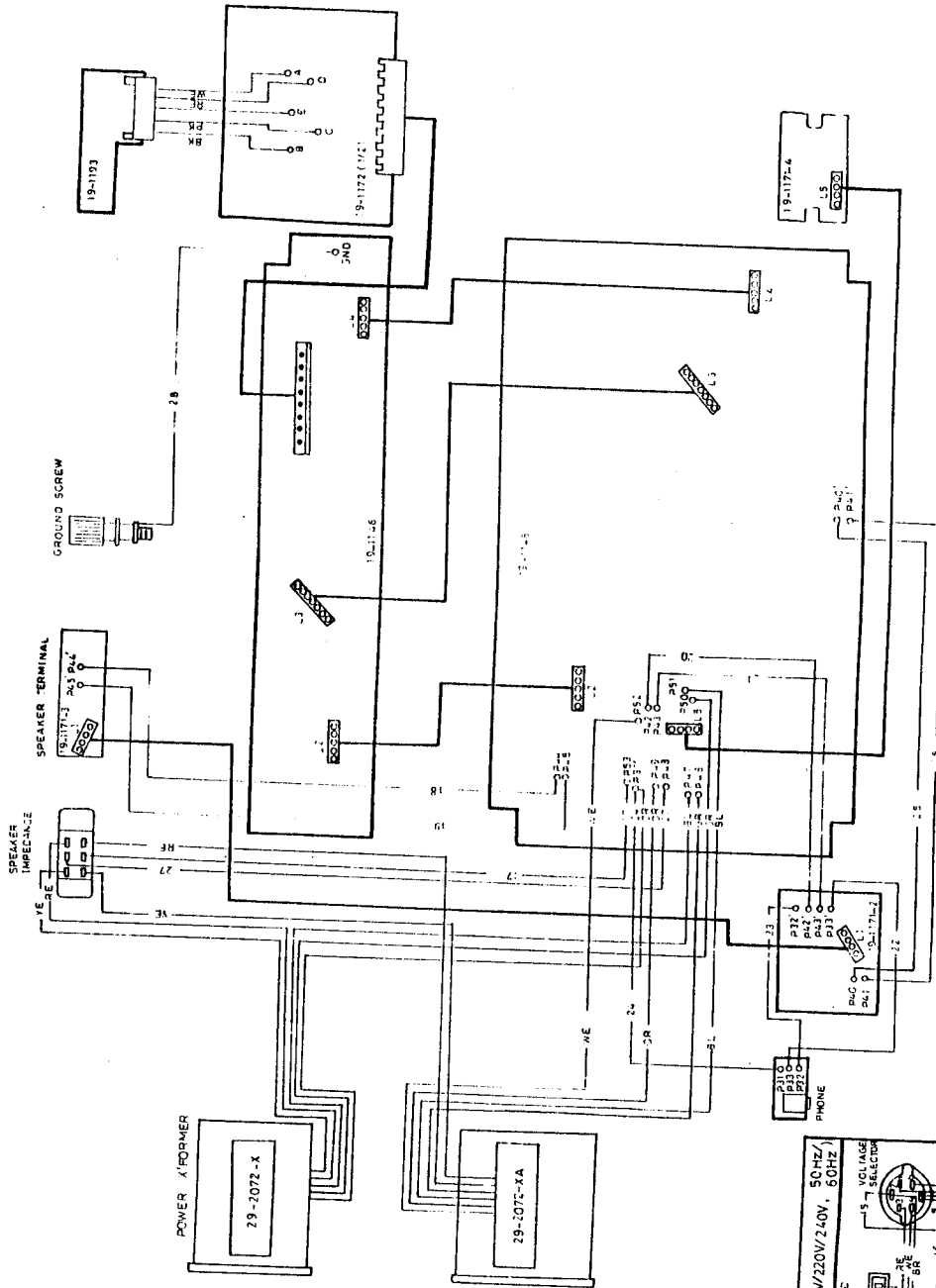
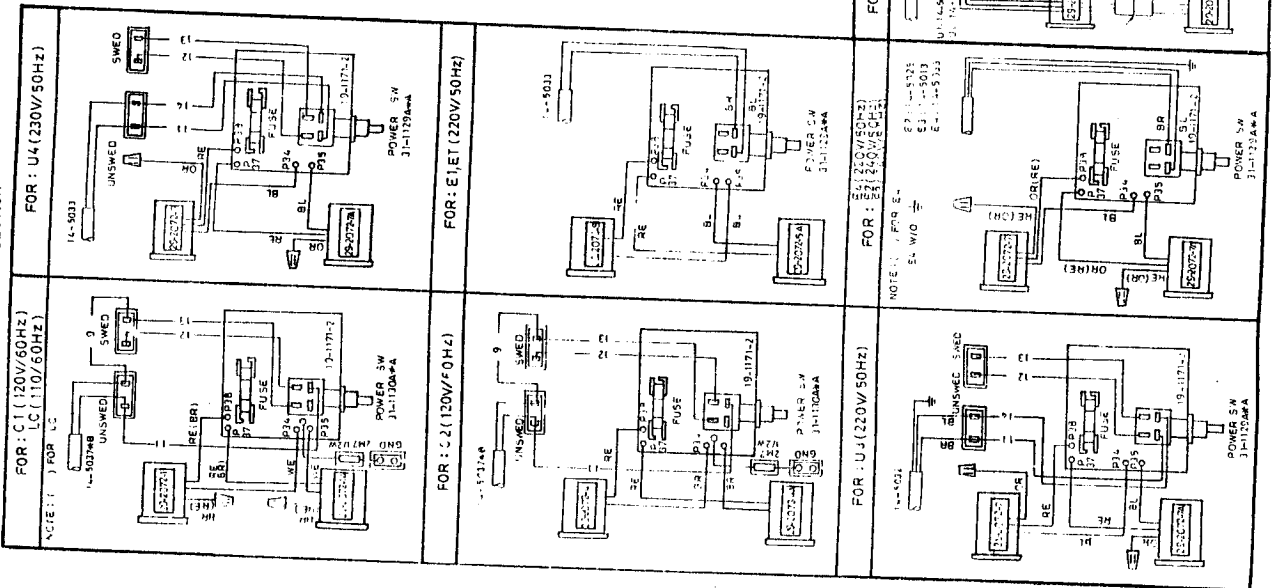
**WIRE COLOR ABBREVIATIONS:**  
 BK - BLACK  
 BR - BROWN  
 PE - RED  
 OR - ORANGE  
 YE - YELLOW  
 GR - GREEN  
 BL - BLUE  
 WE - WHITE

For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
 8 Cherry Tree Rd, Chinnor  
 Oxon OX9 4QY  
 Tel: 01844-351694 Fax: 01844-352554  
 Email: enquires@mauritron.co.uk

# 3150 WIRING DIAGRAM

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## PRIMARY SECTION

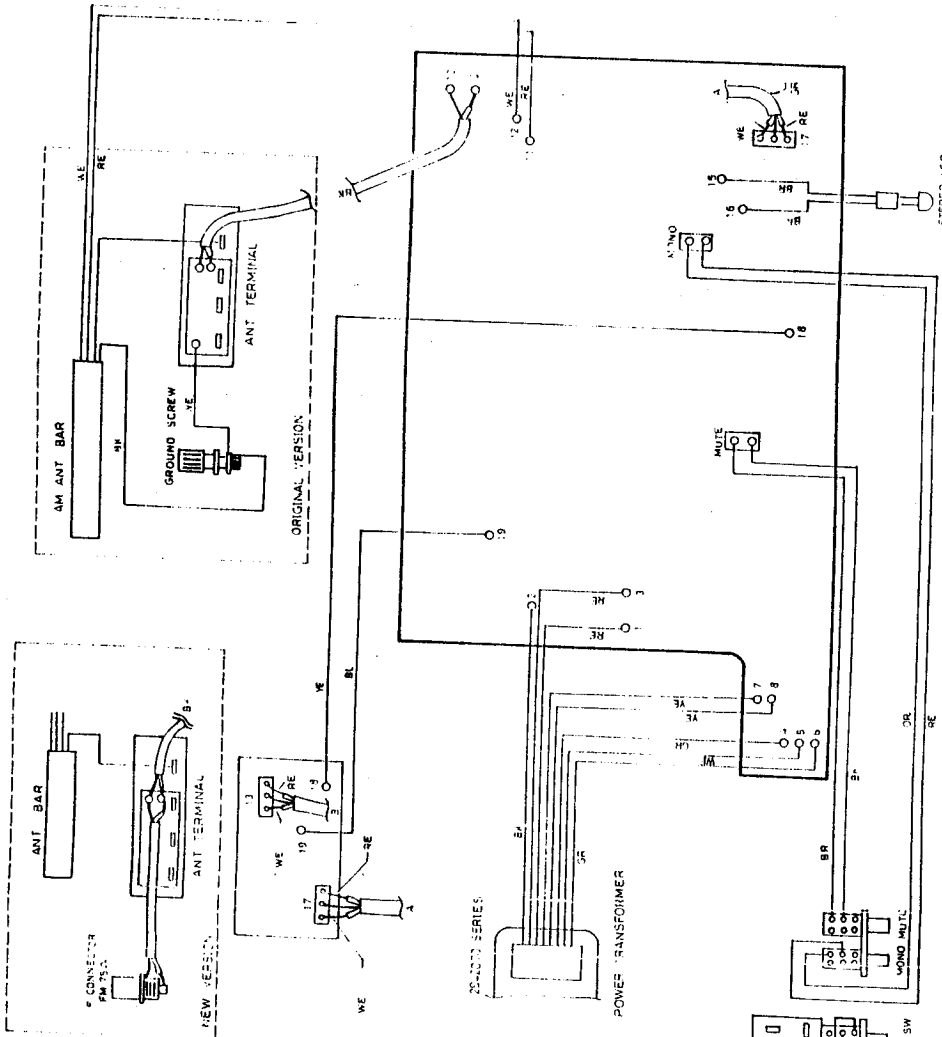
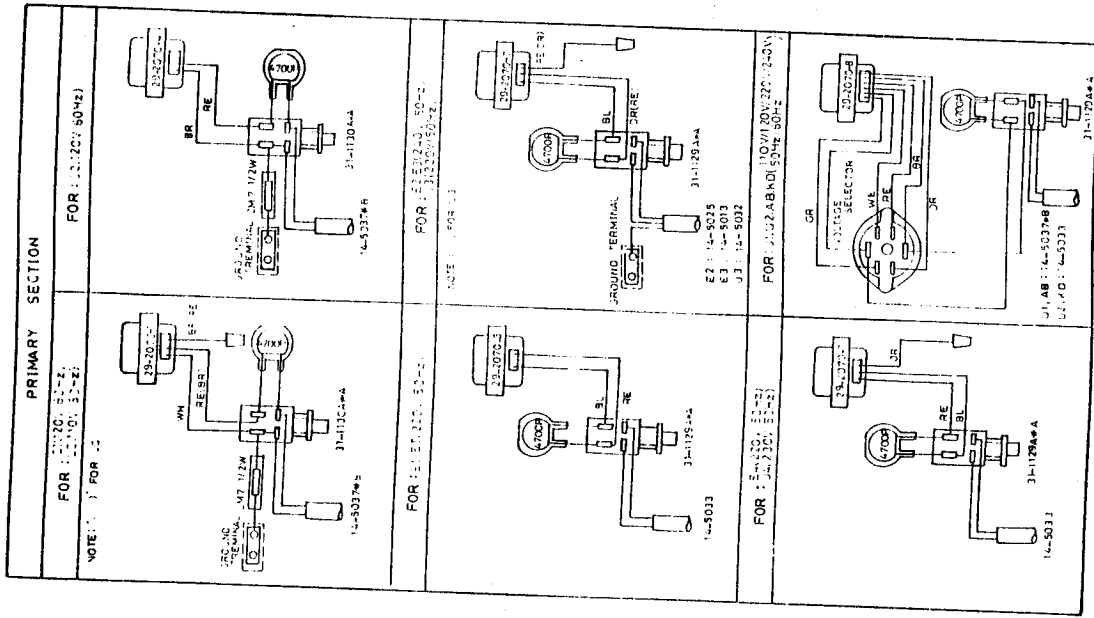


- WIRE COLOR - ABBREVIATIONS :
- BA - BLACK
  - BR - BROWN
  - RE - RED
  - OR - ORANGE
  - YE - YELLOW
  - GR - GREEN
  - BL - BLUE
  - WE - WHITE
  - PA - PINK

# 4150 WIRING DIAGRAM

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MAURITRON TECHNICAL SERVICES  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
Tel: 01844-351694 Fax: 01844-352554  
Email: enquiries@mauritron.co.uk



- WIRE COLOR ABBREVIATIONS
- BR-BLACK
  - BR-BROWN
  - RE-RED
  - OR-ORANGE
  - YE-YELLOW
  - GR-GREEN
  - BL-BLUE
  - WE-WHITE
  - PV-PINK



**2150 ELECTRICAL PARTS LIST**

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>RESISTORS (All are carbon film 1/4W +/-5% unless noted otherwise)</b>			
R601 R602	16-4CA224J	220K OHM	
R603 R604	16-4CA822J	3K2 OHM	
R605-R608	16-4CA222J	3K2 OHM	
R609 R610	16-4CA391J	390 OHM	
R611-R614	16-4CA223J	22K OHM	
R615 R616	16-4CA183J	18K OHM	
R617 R618	16-4CA391J	390 OHM	
R619 R620	16-4CA152J	1K5 OHM	
R621 R622	16-4CA331J	330 OHM	
R623 R624	16-4CA390J	39 OHM	
R625-R628	16-2AS821J	Metal oxide 2W 820 OHM +/-5%	
R629 R630	16-2AS152J	Metal oxide 2W 1K5 OHM +/-5%	
R631 R632	16-4CN561J	560 OHM	
R633 R634	16-4CN101J	100 OHM	
R635-R636	16-4CN300J	33 OHM	
R637 R638	16-4CN122J	1K2 OHM	
R639 R640	16-4CA331J	330 OHM	
R641 R642	16-2AS122J	Metal oxide 2W 1K2 OHM +/-5%	
R643 R644	16-4CN181J	18K OHM	
R645-R648	16-1033	Wirewound 5W+5W 100 OHM +/-5%	
R649 R650	16-4CA152J	1K5 OHM	
R651 R652	16-1AS100J	Metal oxide 1W 10 OHM +/-5%	
R653 R654	16-4CA183J	18K OHM	
R655	16-4CA330J	33 OHM	
R656	16-4CR62J	62 OHM	
R657	16-4CR333J	33K OHM	
R658-R660	16-1AS3R3J	Metal oxide 1W 3.3 OHM +/-5%	
R661-R662	16-1AS471J	Metal oxide 1W 470 OHM +/-5%	
R663	16-4CA473J	47K OHM	
R664-R665	16-4AS63J	56K OHM	
R666	16-4AS62J	56K OHM	
R667	16-4AS53J	56K OHM	
R668	16-4CA183J	18K OHM	
R669	16-4CA473J	47K OHM	
R670	16-4CA183J	18K OHM	
R671	15-4CA224J	220K OHM	
R672	16-4CA333J	33K OHM	
R673	15-4CA563J	56K OHM	
R674	15-4CA562J	56K OHM	
R675	16-4CA153J	15K OHM	
R676	16-2AS631J	Metal oxide 2W 630 OHM +/-5%	
R677	16-4CA151J	150 OHM	
R678-R679	16-4CA102J	10K OHM	
R680	16-4CA151J	150 OHM	
R681-R682	16-4CA332J	33K OHM	
R683	16-4CS123J	12K OHM	
R803	16-4CR473J	47K OHM	
R804	16-4CA473J	47K OHM	
R805	16-4CR924J	920K OHM	
R806	16-4CA392J	39K OHM	

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>RESISTORS (All are carbon film 1/4W +/-5% unless noted otherwise)</b>			
R807	16-4CA823J	82K OHM	
R808	16-4CA152J	1K5 OHM	
R810 R811	16-4CA122J	1K2 OHM	
R812	16-1AS100J	Metal oxide 1W 10 OHM +/-5%	
R813	16-1AS100J	Metal oxide 1W 10 OHM +/-5%	
R814	16-4CS123J	12K OHM	
R815	16-4CA332J	33K OHM	
R850 R851	16-4AN3R3J	Metal oxide 1/4W 3.3 OHM +/-5%	
<b>CAPACITORS</b>			
C601-C604	17-1.6R105K	Electrolytic solid 1uF 16V +/-10%	
C605 C606	17-5FF122J	Mylar 122pF 50V +/-5%	
C607 C608	17-5DR821K	Ceramic 820pF 50V +/-10%	
C609 C610	17-5FF102J	Mylar 100pF 50V +/-5%	
C611 C612	17-5DR470M	Ceramic 47pF 50V +/-20%	
C613 C614	17-0.63EF108Y	Electrolytic 1000uF 6.3V +/-10%	
C615 C616	17-5FF102J	Mylar 100pF 50V +/-5%	
C617 C618	17-5DH104Z	Ceramic 0.1uF 50V +/-20%	
C619	17-6.3EF476Y	Electrolytic 47uF 63V +/-10%	
C621 C622	17-5DR101M	Ceramic 100pF 50V +/-20%	
C623 C624	17-5DH104Z	Ceramic 0.1uF 50V +/-20%	
C625 C626	17-5ER476Y	Electrolytic 47uF 50V +/-10%	
C627-C630	17-5DR470M	Ceramic 47pF 50V +/-20%	
C631-C640	17-5DH104Z	Ceramic 0.1uF 50V +/-20%	
C641	17-5ER106Y	Electrolytic 10uF 50V +/-10%	
C642 C643	17-1ER476Y	Electrolytic 47uF 10V +/-10%	
C644 C645	17-5ER476Y	Electrolytic 47uF 50V +/-10%	
C646	17-5ER474Y	Electrolytic 47uF 50V +/-10%	
C647	17-1ER226Y	Electrolytic 22uF 50V +/-10%	
C648 C649	17-5DR222J	Ceramic 22pF 50V +/-20%	
C650 C651	17-5DH104Z	Ceramic 0.1uF 50V +/-20%	
C652-C654	17-5DR101M	Ceramic 100pF 50V +/-20%	
C603 C604	17-5ER476Y	Electrolytic 47uF 50V +/-10%	
C607 C608	17-5ER106Y	Electrolytic 10uF 50V +/-10%	
C609	17-5DR220M	Ceramic 22pF 50V +/-20%	
C611	17-5ER476Y	Electrolytic 47uF 50V +/-10%	
C615 C616	17-6.3EF477Y	Electrolytic 47uF 63V +/-10%	
C617 C620	17-5P478Y	Electrolytic 470uF 50V +/-10%	
C621	17-5ER105Y	Electrolytic 10uF 50V +/-10%	
C622 C623	17-2014	Ceramic 100pF 400VAC +/-10%	
C632	17-5DH104Z	Ceramic 0.1uF 50V +/-20%	
<b>INTEGRATED CIRCUITS</b>			
I0701	30-3187	Protector TA7317P	
I0801	30-3178	Regulator MS231L	
I0902	30-3213	Regulator MC7805CTC 47524	

**7150 AUDIO / 3150 ELECTRICAL PARTS LIST**

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>RESISTORS (All are carbon film 1/4W +/-5% unless noted otherwise)</b>			
R401 R402	16-4CA473J	47K OHM	
R403 R404	16-4CA220J	22 OHM	
R405 R406	16-4CR271J	270 OHM	
R407 R408	16-4CR392J	39K OHM	
R409	16-4CA181J	180 OHM	
R410	16-4CA181J	180 OHM	
R411	16-4CA181J	180 OHM	
R412	16-4CA181J	180 OHM	
R413 R414	16-4CR201J	200 OHM	
R415 R416	16-4CR103J	10K OHM	
R417	16-4CA123J	120 OHM	
R418	16-4CR121J	120 OHM	
R419	16-4CA151J	150 OHM	
R420	16-4CU154J	150 OHM	
R421 R422	16-4CA121J	120 OHM	
R423 R424	16-4CA221J	220 OHM	
R425	16-4CA153J	15K OHM	
R426	16-4CR153J	15K OHM	
R427	16-4CN680J	68 OHM	
R428-R430	16-4CR680J	68 OHM	
R431 R432	16-4CR681J	680 OHM	
R433 R434	16-4CA104J	100K OHM	
R435	16-4CA103J	10K OHM	
R436	16-4CR103J	10K OHM	
R437 R438	16-4CR151J	150 OHM	
R439 R440	16-4CR124J	120K OHM	
R442	16-4CR102J	1K OHM	
R443-R446	16-4CA102J	1K OHM	
R501 R502	16-4CA151J	150 OHM	
R503 R504	16-4CA334J	330K OHM	
R505-R506	16-4CA823J	32K OHM	
R507 R508	16-4CR184J	180K OHM	
R509 R510	16-4CR151J	150 OHM	
R511 R512	16-4CA562J	56K OHM	
R515	16-4CR332J	33K OHM	
R516	16-4CA332J	33K OHM	
R517 R518	16-4CA222J	2K2 OHM	
R519 R520	16-4CP154J	150K OHM	
R521 R522	16-4CR105J	1M OHM	
R523 R524	16-4CA191J	100 OHM	
R525 R526	16-4CA822J	82K OHM	
R527 R528	16-4CA562J	56K OHM	
R529 R530	16-4CA181J	180 OHM	
R531 R534	16-4CA102J	1K OHM	
R535 R536	16-4CA473J	47K OHM	
R537 R538	16-4CA332J	33K OHM	
R541 R542	16-4CA561J	560 OHM	
R543 R544	16-4CA622J	62K OHM	
R545	16-4CA681J	680 OHM	
R546	16-4CR681J	680 OHM	

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>COILS</b>			
L601 L602	29-1147	41r 1.2x6x6.9x10.6 Dx30T	
<b>VARIABLE RESISTORS</b>			
VR601 VR602	29-4163	Semi 3c 500B 51at	
VR603 VR604	29-4175	Semi 3c 100B 51at	
<b>DIODES</b>			
D601-D612	30-1019-1	5AW62/5AW76	
D613 D614	30-1038	Zener 12V 1W RD15E3	
D615	30-1002	Rectifier 100V 1A 1N4002/1001	
D801-D804	30-1002	Rectifier 100V 1A 1N4002/1001	
D805-D808	30-1017-1	Rectifier 100V 3A 036	
D809	30-1002	Rectifier 100V 1A 1N4002/1001	
<b>LEDS</b>			
L0601	30-1085	Green LT3231G/K-253FF	
L0602	30-1075	Red LT3211R/K-253FFR	
L0801	30-1075	Red LT3211R/K-253FFR	
<b>TRANSISTORS</b>			
Q601 Q602	30-2096	8C5568	
Q603 Q604	30-2090-2	3C5468	
Q605 Q606	30-2239	5F423	
Q607-Q610	30-2260	2SD669C/2SD669D	
Q611 Q612	30-2259	2SB649C/2SB649D	
Q613 Q614	30-2260	2SD669C/2SD669D	
Q615 Q616	30-2305	2SC2921	
Q617 Q618	30-2304	2SA1215	
Q619 Q620	30-2090-2	8C5468	
Q621	30-2096	8C5568	
Q801	30-2260	2SD669C/2SD669D	
Q802	30-2096	8C5568	
Q803	30-2259	2SB649C/2SB649D	
<b>SWITCHES</b>			
SW601 SW602	31-1226	Slide SSP22FL130	
SW603 SW604	31-1253	Push SFP22CA003-FL	





**7150 AUDIO/ 3150 ELECTRICAL PARTS LIST**

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>INTEGRATED CIRCUITS</b>			
IC501	30-3179	Dual OP RC5532/NE5532	
IC701	30-3187	Protector TA7317P	
IC801	30-3178	Regulator MS2311	
IC802	30-3213	Regulator MC79M24CT/AN7824	
<b>SWITCHES</b>			
SW401	31-1228	Slide SSB23FL313	
SW402	31-1204	Rotary RZL45FL504	
SW403	31-1253	Switching Part ESA-26132	
	31-1261	Operating Part ESA-33446B	
SW404	31-1260	Slide SSB022NA01-FL	
SW501	31-1247	Push SUF32AE023-FL	
SW503 SW504	31-1247	Push SUF32AE023-FL	
SW502 SW505	31-1235	Push SUF22AA012-FL	
SW601 SW602	31-1226	Slide SSP22FL080	
SW603	31-1024F	Rotary SR2V044N37-FL	

31-1253  
3121261

**7150 TUNER/4150 ELECTRICAL PARTS LIST**

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)</b>			
R001	16-1/4CA563J	56K OHM	
R002	16-1/4CA104J	100K OHM	
R003	16-1/4CA101J	100 OHM	
R004	16-1/4CA331J	330 OHM	
R005	16-1/4CR330J	33 OHM	
R006	16-1/4CA121J	120 OHM	
R007	16-1/4CA563J	56K OHM	
R008	16-1/4CA104J	100K OHM	
R009	16-1/4CA563J	56K OHM	
R010	16-1/4CA104J	100K OHM	
R011	16-1/4CL101J	100 OHM	
R012	16-1/4CA151J	150 OHM	
R013	16-1/4CA121J	120 OHM	
R014	16-1/4CA563J	56K OHM	
R015	16-1/4CA104J	100K OHM	
R016	16-1/4CA563J	56K OHM	
R017	16-1/4CA333J	33K OHM	
R018	16-1/4CA103J	10K OHM	
R019	16-1/4CA222J	22K OHM	
R020	16-1/4CA332J	33K OHM	
R021	16-1/4CA431J	430 OHM	
R022	16-1/4CA103J	10K OHM	
R023	16-1/4CA682J	68K OHM	
R024	16-1/4CR683J	68K OHM	
R025	16-1/4CL154J	150K OHM	
R026	16-1/4CA102J	1K OHM	
R027	16-1/4CR222J	22K OHM	
R028	16-1/4CA101J	100 OHM	
R101	16-1/4CR681J	680 OHM	
R102	16-1/4CR391J	390 OHM	
R103	16-1/4CR470J	47 OHM	
R104	16-1/4CA152J	1K5 OHM	
R105	16-1/4CR471J	470 OHM	
R106	16-1/4CA331J	330 OHM	
R107	16-1/4CR391J	390 OHM	
R108	16-1/4CR101J	100 OHM	
R109	16-1/4CR391J	390 OHM	
R110	16-1/4CR331J	330 OHM	
R111	16-1/4CA330J	33 OHM	
R112	16-1/4CR102J	1K OHM	
R113	16-1/4CA103J	10K OHM	
R114	16-1/4CR823J	82K OHM	
R115	16-1/4CR101J	100 OHM	
R116	16-1/4CR102J	1K OHM	
R118	16-1/4CR331J	330 OHM	
R119	16-1/4CR103J	10K OHM	
R120	16-1/4CA820J	82 OHM	
R121	16-1/4CL563J	56K OHM	
R122	16-1/4CA221J	220 OHM	

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)</b>			
R123	16-1/4CR473J	47K OHM	
R124	16-1/4CR223J	22K OHM	
R125	16-1/4CA183J	18K OHM	
R127	16-1/4CA153J	15K OHM	
R128	16-1/4CR103J	10K OHM	
R129 R130	16-1/4CA683J	68K OHM	
R131	16-1/4CR563J	56K OHM	
R132	16-1/4CA333J	33K OHM	
R133	16-1/4CA823J	82K OHM	
R134	16-1/4CA100J	10 OHM	
R135	16-1/4CR154J	150K OHM	
R136	16-1/4CR473J	47K OHM	
R137	16-1/4CA473J	47K OHM	
R138	16-1/4CR224J	220K OHM	
R139	16-1/4CA222J	22K OHM	
R140 R141	16-1/4CA472J	47K OHM	
R142	16-1/4CA103J	10K OHM	
R143	16-1/4CA122J	1K2 OHM	
R144	16-1/4CR333J	33K OHM	
R145	16-1/4CA564J	560K OHM	
R146	16-1/4CA223J	22K OHM	
R147-R149	16-1/4CA102J	1K OHM	
R150 R151	16-1/4CR103J	10K OHM	
R152	16-1/4CR472J	47K OHM	
R153 R154	16-1/4CR471J	470 OHM	
R156	16-1/4CR331J	330 OHM	
R157	16-1/4CA391J	390 OHM	
R158	16-1/4CR470J	47 OHM	
R159	16-1/4CA473J	47K OHM	
R160 R161	16-1/4CR223J	22K OHM	
R162	16-1/4CR272J	27K OHM	
R201	16-1/4CA122J	1K2 OHM	
R202	16-1/4CR102J	1K OHM	
R203	16-1/4CA121J	120 OHM	
R204	16-1/4CA682J	68K OHM	
R205	16-1/4CR104J	10K OHM	
R206	16-1/4CA103J	10K OHM	
R207 R208	16-1/4CR222J	22K OHM	
R209 R210	16-1/4CA183J	18K OHM	
R211 R212	16-1/4CR333J	33K OHM	
R213-R216	16-1/4CA332J	33K OHM	
R217	16-1/4CA333J	33K OHM	
R218	16-1/4CA103J	10K OHM	
R219 R220	16-1/4CA823J	82K OHM	
R221 R222	16-1/4CA155J	1M5 OHM	
R223	16-1/4CA103J	10K OHM	
R224	16-1/4CA102J	1K OHM	
R225	16-1/4CA104J	100K OHM	

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)</b>			
R226	16-1/4CA103J	10K OHM	
R227	16-1/4CA102J	1K OHM	
R228-R230	16-1/4CA473J	47K OHM	
R231	16-1/4CA135J	15K OHM	
R232	16-1/4CA473J	47K OHM	
R233	16-1/4CA153J	15K OHM	
R234	16-1/4CR103J	10K OHM	
R235	16-1/4CR223J	22K OHM	
R236	16-1/4CA103J	10K OHM	
R237	16-1/4CA223J	22K OHM	
R238	16-1/4CR472J	47K OHM	
R239	16-1/4CR473J	47K OHM	
R240 R241	16-1/4CA103J	10K OHM	
R242	16-1/4CR223J	22K OHM	
R243	16-1/4CA473J	47K OHM	
R244 R245	16-1/4CA103J	10K OHM	
R246	16-1/4CA473J	47K OHM	
R247	16-1/4CR153J	15K OHM	
R248	16-1/4CA223J	22K OHM	
R249	16-1/4CA473J	47K OHM	
R250	16-1/4CA153J	15K OHM	
R251	16-1/4CA101J	100 OHM	
R252	16-1/4CA472J	47K OHM	
R253	16-1/4CA333J	33K OHM	
R254	16-1/4CR103J	10K OHM	
R255	16-1/4CA223J	22K OHM	
R256	16-1/4CA101J	100 OHM	
R257 R258	16-1/4CA564J	560K OHM	
R259 R260	16-1/4CA104J	100K OHM	
R261	16-1/4CA221J	220 OHM	
R262 R263	16-1/4CA223J	22K OHM	
*R264 R265	16-1/4CA471J	470 OHM	
*R266 R267	16-1/4CR474J	470K OHM	
*R268 R269	16-1/4CA185J	185 OHM	
*R270 R271	16-1/4CR562J	56K OHM	
*R272-R275	16-1/4CA72J	4KZ OHM	
*R276 R277	16-1/4CA332J	3K3 OHM	
R278	16-1/4CR104J	10K OHM	
R279	16-1/4CR334J	330K OHM	
R280	16-1/4CA105J	1M OHM	
*R281 R282	16-1/4CA224J	220K OHM	
*R283 R284	16-1/4CA104J	100K OHM	
*R285 R286	16-1/4CA224J	220K OHM	
*R287 R288	16-1/4CA472J	47K OHM	
R301	16-1/4CA103J	10K OHM	
R303	16-1/4CA822J	82K OHM	
R304	16-1/4CR271J	270 OHM	
R305	16-1/4CA472J	47K OHM	
R306	16-1/4CA103J	10K OHM	

Note: 1. Asterisk \* denotes for 4150 only 2. Delta  $\Delta$  denotes for 7150 only



### 7150 TUNER/4150 ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>DIODES</b>			
D106	30-1010	1N60	
D107 D108	30-1152TA	1N4148	
D201-D208	30-1152TA	1N4148	
D209	30-1010	1N60	
D201	30-1077-1	ZENER HZ5A-3	
D211 D212	30-1152TA	1N4148	
D214	30-1152TA	1N4148	
D301-D303	30-1152TA	1N4148	
D701 D702	30-1146	Variable capacitor SVC333B	
D703-D705	30-1152TA	1N4148	
D901-D908	30-1002	Rectifier 100V1A 1N4002/1001	
D909 D910	30-1044-1	ZENER HZ15-2	
D911	30-1147-1	ZENER HZ30-2	
D912	30-1136-1	ZENER HZ7A-2	
<b>INTEGRATED CIRCUITS</b>			
IC101	30-3155	FM IF UPC1163H	
IC102	30-3206	FM IF LA1235N	
IC103	30-3118	DUAL OP MC34002P	
IC104	30-3069	DUAL OP RC4558/UPC4558N	
IC105	30-3205	DUAL OP NE5517N/LM13600N	
IC201	30-3079	MPX HA12016	
IC202	30-3069	DUAL OP RC4558/UPC4558N	
IC203	30-3051	METER DRIVER BA656	
IC301	30-3148	PLL+CONTROLLER TC9137P	
IC302	30-3149	PRECALLER TD6104P	
IC303	30-3050	DISPLAY DRIVER TD6301P	
<b>TRANSISTORS</b>			
Q001-Q003	30-2201*A	FET J310	
Q004 Q005	30-2197*B	2N5770	
Q006	30-2201*A	FET J310	
Q007	30-2267*A	FET 2N5486	
Q101 Q102	30-2201*A	FET J310	
Q103	30-2019	2SC930	
Q104	30-2156	2SC1815GR	
Q105 Q106	30-2019	2SC930	
Q201-Q208	30-2156	2SC1815GR	
Q209	30-2171	2SA733A	
Q210 Q211	30-2265	FET J111	
*Q212 Q213	30-2084-3	BC549C	
*Q214 Q215	30-2096	BC556B	
Q216	30-2267*A	FET 2N5486	
Q301	30-2156	2SC1815GR	
Q302	30-2161	FET K40	
Q303	30-2156	2SC1115GR	
Q304	30-2161	FET K40	
Q305	30-2156	2SC1815GR	

Note: Asterisk \* denotes for 4150 only

REF. NO.	PART NO.	DESCRIPTION	NOTE
<b>TRANSISTORS</b>			
Q306-Q308	30-2255	2SC2785	
Q701 Q702	30-2156	2SC1815GR	
Q703	30-2084-3	BC549C	
Q901	30-2078	2SD330E	
Q902	30-2171	2SA733A	
Q903 Q904	30-2090-2	BC546B	

**For Service Manuals Contact**  
**MAURITRON TECHNICAL SERVICES**  
**8 Cherry Tree Rd, Chinnor**  
**Oxon OX9 4QY**  
**Tel:- 01844-851694 Fax:- 01844-352554**  
**Email:- enquiries@mauritron.co.uk**

### 7150 AUDIO/2150/3150 CRITICAL COMPONENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	NOTE	
Switched Unswitched	12-2121	AC Outlet AB/C1/C2/LC/U1-U4	Version	
	14-5013	Power Cord E3	Version	
	14-5025	Power Cord E2	Version	
	14-5032	Power Cord U3	Version	
	14-5033	Power Cord E1/ET/E4/U2/U4	Version	
	14-5037*B	Power Cord C1/C2/LC/U1/AB	Version	
	C822 C823 C823	17-2011	Capacitor AB/E1-E4/ET/U1-U4	Version
		17-2014	Capacitor C1/C2/LC	Version
		29-2072-1	Transformer C1/LC	Version
		29-2072-1A	Transformer C1/LC	Version
29-2072-4		Transformer C2	Version	
29-2072-4A		Transformer C2	Version	
29-2072-5		Transformer E1/ET	Version	
29-2072-5A		Transformer E1/ET	Version	
29-2072-7		Transformer E2/E3/E4/U3/U4	Version	
29-2072-7A		Transformer E2/E3/E4/U3/U4	Version	
SW802a SW802b SW802a F6 F6	29-2072-8	Transformer AB/U1/U2	Version	
	29-2072-8A	Transformer AB/U1/U2	Version	
	31-1129A*A	Switch AB/E1-E4/ET/U1-U4	Version	
	31-1130A*A	Switch C1/C2/LC	Version	
	32-14001W	Fuse 4A 250V Nomal AB/C1/C2/LC/U1	Version	
	32-12001S	Fuse 2A 250V Time-Tag E1-E4/ET/U2-U4	Version	

### 4150/7150 TUNER CRITICAL COMPONENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	NOTE
F1 F2 F3 F1 F2 F3	14-5013	Power Cord E3	Version
	14-5025	Power Cord E2	Version
	14-5032	Power Cord U3	Version
	14-5033	Power Cord E1/ET/E4/U2/U4	Version
	14-5037*B	Power Cord C1/C2/LC/U1/AB	Version
	17-2011	Capacitor AB/E1-E4/ET/U1-U4	Version
	17-2014	Capacitor C1/C2/LC	Version
	29-2070-1	Transformer C1/LC	Version
	29-2070-4	Transformer C2	Version
	29-2070-5	Transformer E1/ET	Version
	29-2070-7	Transformer E2/E3/E4/U3/U4	Version
	29-2070-8	Transformer AB/U1/U2	Version
	31-1129A*A	Switch AB/E1-E4/ET/U1-U4	Version
	31-1130A*A	Switch C1/C2/LC	Version
	32-15000U	Fuse 500mA 250V Normal AB/C1/C2/LC/U1	Version
32-15000S	Fuse 500mA 250V Time-Tag E1-E4/ET/U2-U4	Version	