

Tube Type Circuit Ref	14" Chunghwa 370 KRB 22 SPYB 75990-200.93	14" Farmex A 33 LPE 02X01 75990-200.94	14" ESC PCT 3614 NHS 75990-200.95	14" Orion A 34 JLL 90X23 75990-200.96	14" Samtel A 34 JAE 10X 75990-200.97	20" Cl 510 UF:
C300	7n5	7n5	7n5	7n5	7n5	
C301	430nF	430nF	330nF	430nF	430nF	4:
L300	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	3
L301	Not fitted	Not fitted	Not fitted	Not fitted	47uH	No
R300	Link	Link	Link	Link	Link	8
R301	Link	Link	Link	Link	820R	l
R315	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	
R316	10R	10R	10R	10R	10R	No
R915	1R5	0R82	0R68	2R2	2R2	0
R350	18K	18K	18K	18K	18K	
T100	75990-300.21	75990-300.22	75990-300.22	75990-300.21	75990-300.22	75990
T300	75990-300.17			75990-300.17	75990-300.18	75990
TR900/1/2	BF422	BF422	BF422	BF422	BF422	B
CN900	75990-300.24	75990-300.23	75990-300.23	75990-300.24	75990-300.24	75990
R211	1R	1R	1R	1R	1R	
C206	2200uF	2200uF	2200uF	2200uF	2200uF	22
R100	PTC mono	PTC mono	PTC mono	PTC mono	PTC mono	PT
B+	110V					1

Circuit Ref	Euro Text Fast Text	Uni Text Simple Text
IC850	CF70200	CF70095ANF
LNK651	N/F	Link
LNK652	Link	N/F
LNK653	N/F	Link
LNK655	Link	N/F
LNK656	Link	N/F
LNK657	Link	N/F
LNK658	Link	N/F
C661	10nF	270pF
C662	Link	10pF
C663	N/F	82pF
C664	N/F	2n2
C665	N/F	100nF
D651	N/F	BB731
L651	N/F	Coil
R654	Link	33K
R655	10K	100K
R657	N/F	33K
R658	N/F	8K2
R663	N/F	10K
R678	47K	N/F
TR650-653 + Component	N/F	As per circuit

Circuit R
SAW600/6
D400
CT401
TUN600
CF400
IC800
SAW50

Chunghwa SPYB 0.93	14" Farnex A 33 LPE 02X01 75990-200.94	14" ESC PCT 3614 NHS 75990-200.95	14" Orion A 34 JLL 90X23 75990-200.96	14" Samtel A 34 JAE 10X 75990-200.97	20" Chunghwa 510 UFB 22 TC05	20" Samsung A 48 ECR 11X60	20" Goldstar A 48 OAD 220X09	21" Chunghwa A 51 AEZ 90X 75990-200.98	21" Orion A 51 JSW 90X03 75990-200.99	21" Samsung A 51 EER 11X38 75990-200.90
	7n5	7n5	7n5	7n5	9n5	9n5	8n2	8n6	7n9	8n6
	430nF	330nF	430nF	430nF	430nF	470nF	390nF	390nF	390nF	390nF
	Not fitted	Not fitted	Not fitted	Not fitted	35uH	65uH	TBA	65uH	65uH	65uH
	Not fitted	Not fitted	Not fitted	47uH	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted
	Link	Link	Link	Link	820R	820R	820R	820R	820R	820R
	Link	Link	Link	820R	Link	Link	Link	Link	Link	Link
	Not fitted	Not fitted	Not fitted	Not fitted	1CR	10R	10R	10R	10R	10R
	10R	10R	10R	10R	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted
	0R82	0R68	2R2	2R2	0R82	0R82	0R82	0R68	2R2	1R
	18K	18K	18K	18K	12K	12K	12K	12K	12K	12K
0.21	75990-300.22	75990-300.22	75990-300.21	75990-300.22	75990-300.21	75990-300.21	75990-300.21	75990-300.21	75990-300.22	75990-300.21
0.17			75990-300.17	75990-300.18	75990-300.17	75990-300.17	75990-300.17	75990-300.17	75990-300.18	75990-300.17
2	BF422	BF422	BF422	BF422	BF871	BF871	BF871	BF871	BF871	BF871
0.24	75990-300.23	75990-300.23	75990-300.24	75990-300.24	75990-300.76	75990-300.76	75990-300.76	75990-300.76	75990-300.75	75990-300.76
	1R	1R	1R	1R	1R	1R	1R	1R	1R	1R
F	2200uF	2200uF	2200uF	2200uF	2200uF	2200uF	1000uF	1000uF	1000uF	1000uF
no	PTC mono	PTC mono	PTC mono	PTC mono	PTC duo	PTC duo	PTC duo	PTC duo	PTC duo	PTC duo
					113V	115V	110V	110V	100.6V	113.5V

Circuit Ref	Euro Text Fast Text	Uni Text Simple Text
IC650	CF70200	CF70095ANF
LNK651	N/F	Link
LNK652	Link	N/F
LNK653	N/F	Link
LNK655	Link	N/F
LNK656	Link	N/F
LNK657	Link	N/F
LNK658	Link	N/F
C661	10nF	270pF
C662	Link	10pF
C663	N/F	82pF
C664	N/F	2n2
C665	N/F	100nF
D651	N/F	BB731
L651	N/F	Coil
R654	Link	33K
R655	10K	100K
R657	N/F	33K
R658	N/F	8K2
R663	N/F	10K
R678	47K	N/F
R650-653 + component	N/F	As per circuit

Circuit Ref	Mono/PAL/BG	Mono/PAL I	Stereo PAL I	Mono/PALBG/SECC
SAW600/601	OFWG1951	OFWJ1951M	J3252	OFWK2955M
D400	Link	Link	Not fitted	BA282
CT401	TPS5.5MB	TPS6.0MB	Not fitted	TPS5.5MB
TUN600	SALCOMP 1490R	SALCOMP 1590R	SALCOMP 1590R	SALCOMP 1490R
CF400	SFE5.5MB	SFE6.0MB	Not fitted	SFE6.5MB
IC800	MC44007	MC44007	MC44007	MC44002
SAW500	Not fitted	Not fitted	Not fitted	Not fitted

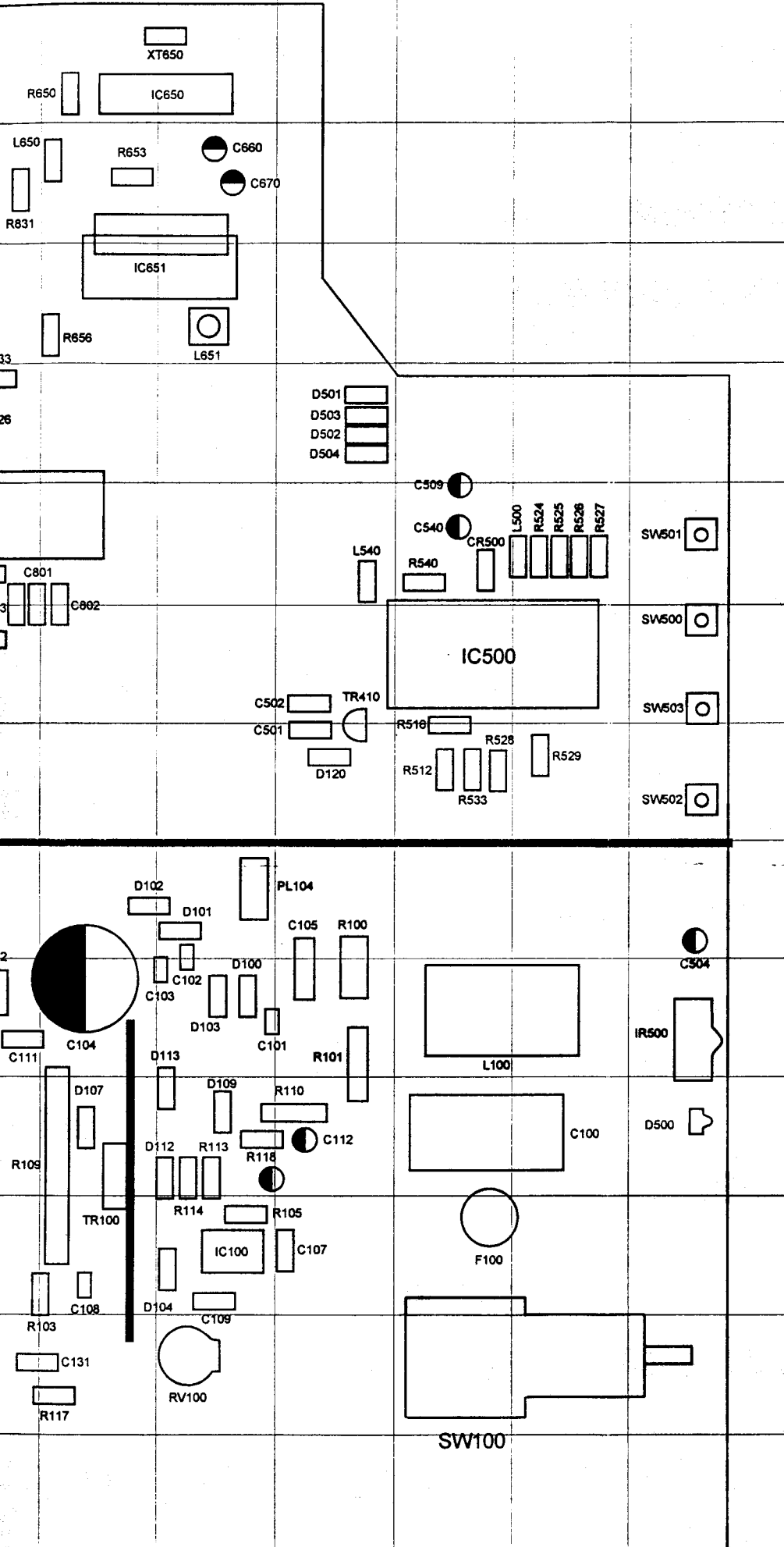
Chunghwa B 22 TC05	20" Samsung A 48 ECR 11X60	20" Goldstar A 48 OAD 220X09	21" Chunghwa A 51 AEZ 90X 75990-200.98	21" Orion A 51 JSW 90X03 75990-200.99	21" Samsung A 51 EER 11X38 75990-200.90	21" Toshiba A 51 KST 40X01M 75990-200.91	21" Huafei A 51 ECV 51X01 75990-200.92
9n5	9n5	8n2	8n6	7n9	8n6	7n9	7n2
30nF	470nF	390nF	390nF	390nF	390nF	390nF	320nF
5uH	65uH	TBA	65uH	65uH	65uH	80uH	65uH
Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	150uH
20R	820R	820R	820R	820R	820R	820R	820R
Link	Link	Link	Link	Link	Link	Link	820R
10R	10R	10R	10R	10R	10R	10R	10R
Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted	Not fitted
OR82	OR82	OR82	OR68	2R2	1R	2R7	2R7
12K	12K	12K	12K	12K	12K	12K	12K
75990-300.21	75990-300.21	75990-300.21	75990-300.21	75990-300.22	75990-300.21	75990-300.22	75990-300.21
75990-300.17	75990-300.17	75990-300.17	75990-300.17	75990-300.18	75990-300.17	75990-300.18	75990-300.17
BF871	BF871	BF871	BF871	BF871	BF871	BF871	BF871
75990-300.76	75990-300.76	75990-300.76	75990-300.76	75990-300.75	75990-300.76	75990-300.75	75990-300.75
1R	1R	1R	1R	1R	1R	1R	1R
2200uF	2200uF	1000uF	1000uF	1000uF	1000uF	1000uF	1000uF
PTC duo	PTC duo	PTC duo	PTC duo	PTC duo	PTC duo	PTC duo	PTC duo
115V	115V	110V	110V	100.8V	113.5V	104V	112.5V

	Mono/PAL/BG	Mono/PAL I	Stereo PAL I	Mono/PALBG/SEC DK
01	OFWG1951	OFWJ1951M	J3252	OFWK2955M
	Link	Link	Not fitted	BA282
	TPS5.5MB	TPS6.0MB	Not fitted	TPS5.5MB
	SALCOMP 1490R	SALCOMP 1590R	SALCOMP 1590R	SALCOMP 1490R
	SFE5.5MB	SFE6.0MB	Not fitted	SFE6.5MB
	MC44007	MC44007	MC44007	MC44002
	Not fitted	Not fitted	Not fitted	Not fitted





I J K L M N



Layout Diagrams

### Service Mode

In this mode the alignment of; Geoemtry, Peak White Level and AGC can be carried out. Either the remote control or TV front controls can be used.

To enter the service mode, depress and hold the channel change buttons (P+ & P-) on the front as the TV is switched on and hold until a picture appears. The service menu will be at the bottom of the screen **GLVHRGBA**. To choose a function select 'menu' on the remote control or simultaneously depress (V+ & V-) on the front of the TV, but only briefly. Adjustment of the selected function is by depressing P+ or P-. Choosing another function will automatically store the adjustment of the previous function. To return to normal TV mode select TV on the remote control or (V+ & V-) on the TV.

<u>Alignment</u>	<u>input</u>	<u>Adjustment</u>
Supply Voltage	TV signal	Adjust VR100 for 110V supply voltage.
G2 voltage (G)	Crosshatch or TV picture.	Adjust between the Red and Green squares. If the G2 is too high - Red square appears on screen. If the G2 is too low - A Green square appears.
Geometry (L V H)	Crosshatch	L - Vertical linearity V - Height H - Horizontal position
Peak White Level (R G B)	Colour Bars	Adjust for minimum colouration of white bar.
AGC (A)	TV signal	Signal level 70dbuV (3mV). Adjust for voltage on tuner pin 1 between 5.4 and 5.6V
Vision Demodulator	IF colour bar	IF signal 39.5Mhz. Adjust L401 for 5.25V on IC400 pin 2.
Teletext Clock	TV text signal	Adjust L651 for 2.5V on IC650 pin 28.
SAT 6 Mhz	IC600, pin12	Adjust L604 to minimum video signal

### Tuning

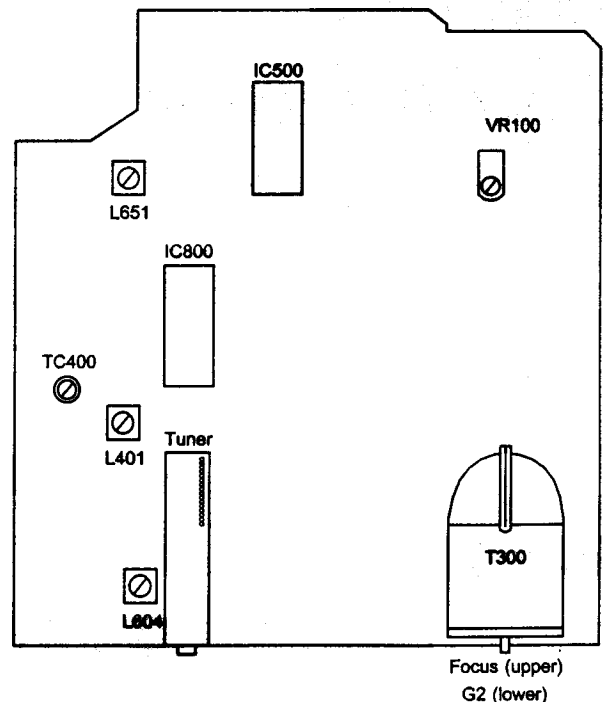
Press the 'Tune' key on the remote control to bring up the tuning graphic. Press and hold the 'P+' key for more than 1 second to start the search tuning. When a channel is found the 'S' graphic will flash. Either select 'P+' to continue tuning or 'Store' to retain the channel. By pressing the 'store' key the programme number will flash, key in the programme number that the channel is to be stored in.

### Fine Tuning

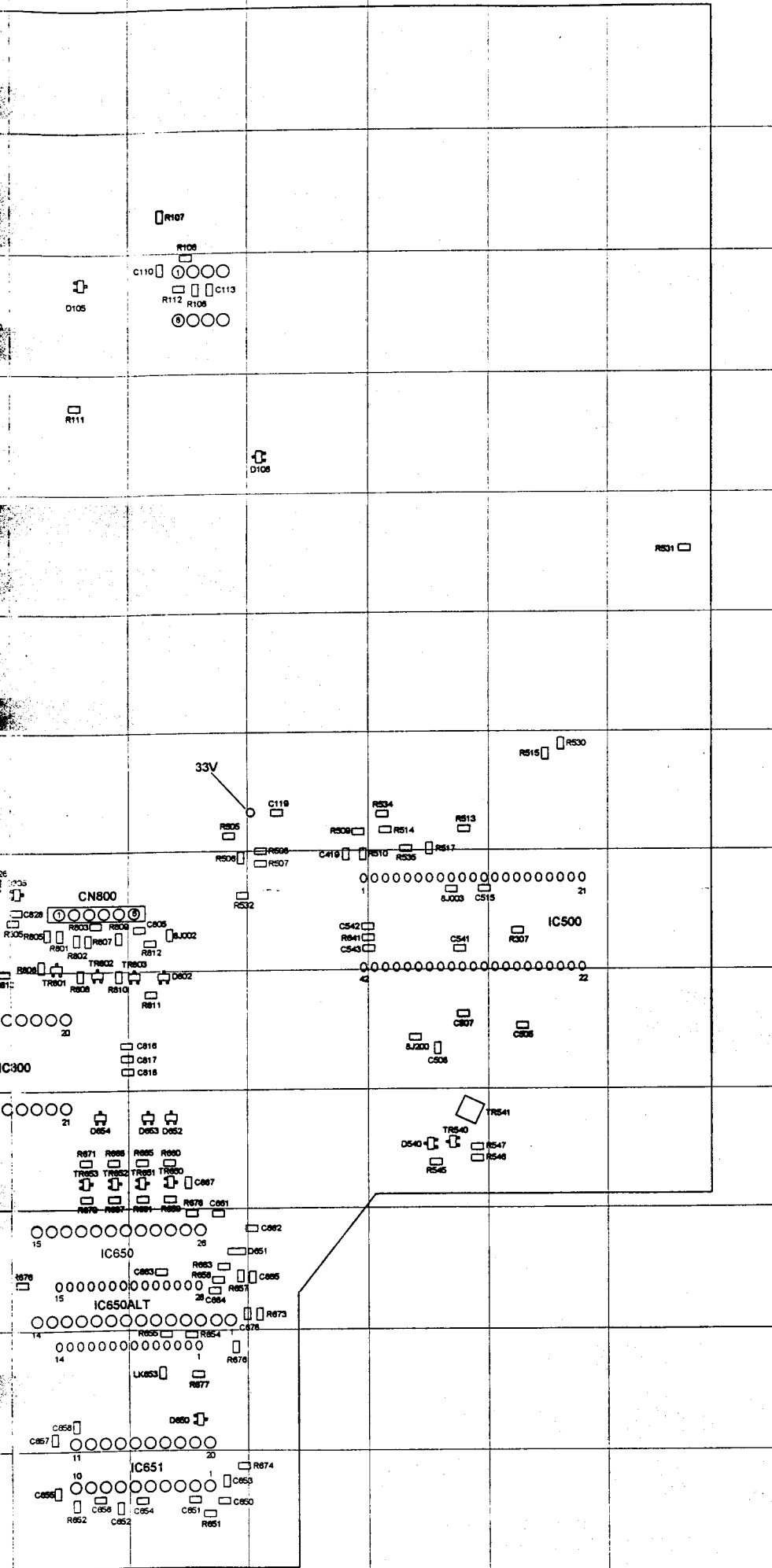
Press the 'Tune' button and then the 'P+' key briefly to bring up the fine tuning graphic, an X will appear after the channel number. Use the 'P+' & 'P-' keys to fine tune and then 'store'. Note: By storing the fine tuning the AFC is disabled and tuning drift may occur.

### Scart Menu

By selecting the 'tune' key on programme 0/AV the Scart options graphic will appear and the external inputs can be selected. In the VCR mode only, the line timebase time constant is short.

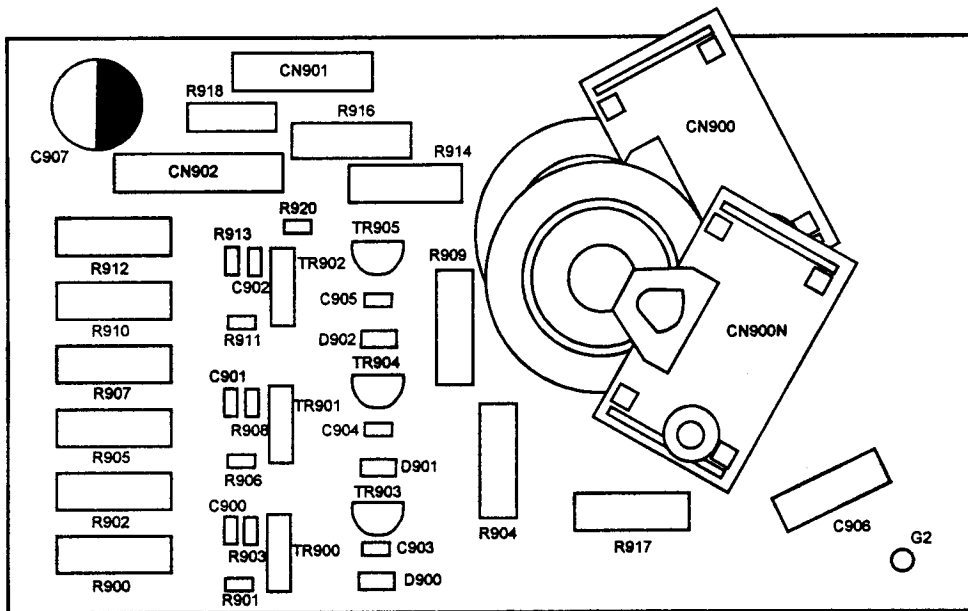


I J K L M N

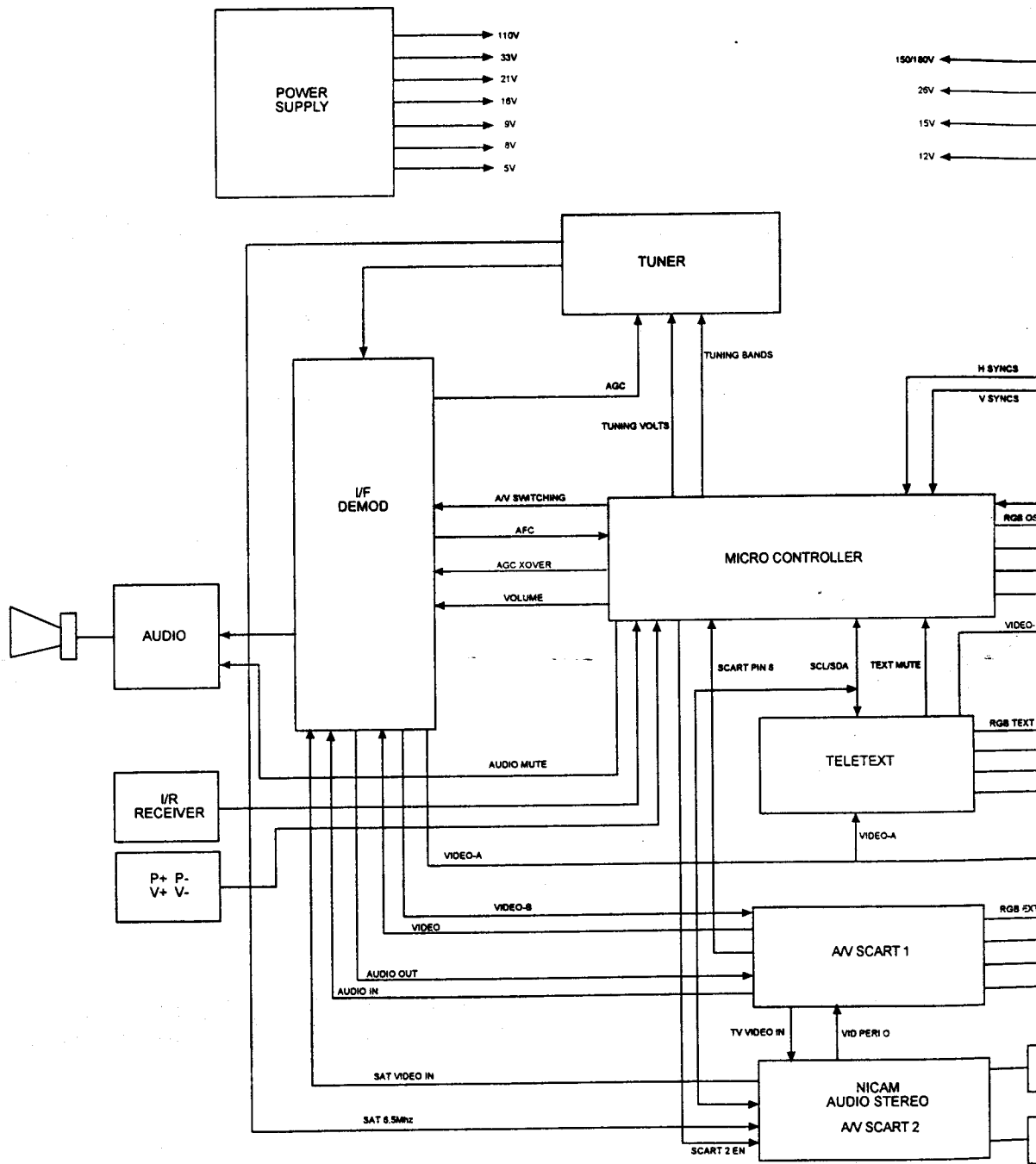


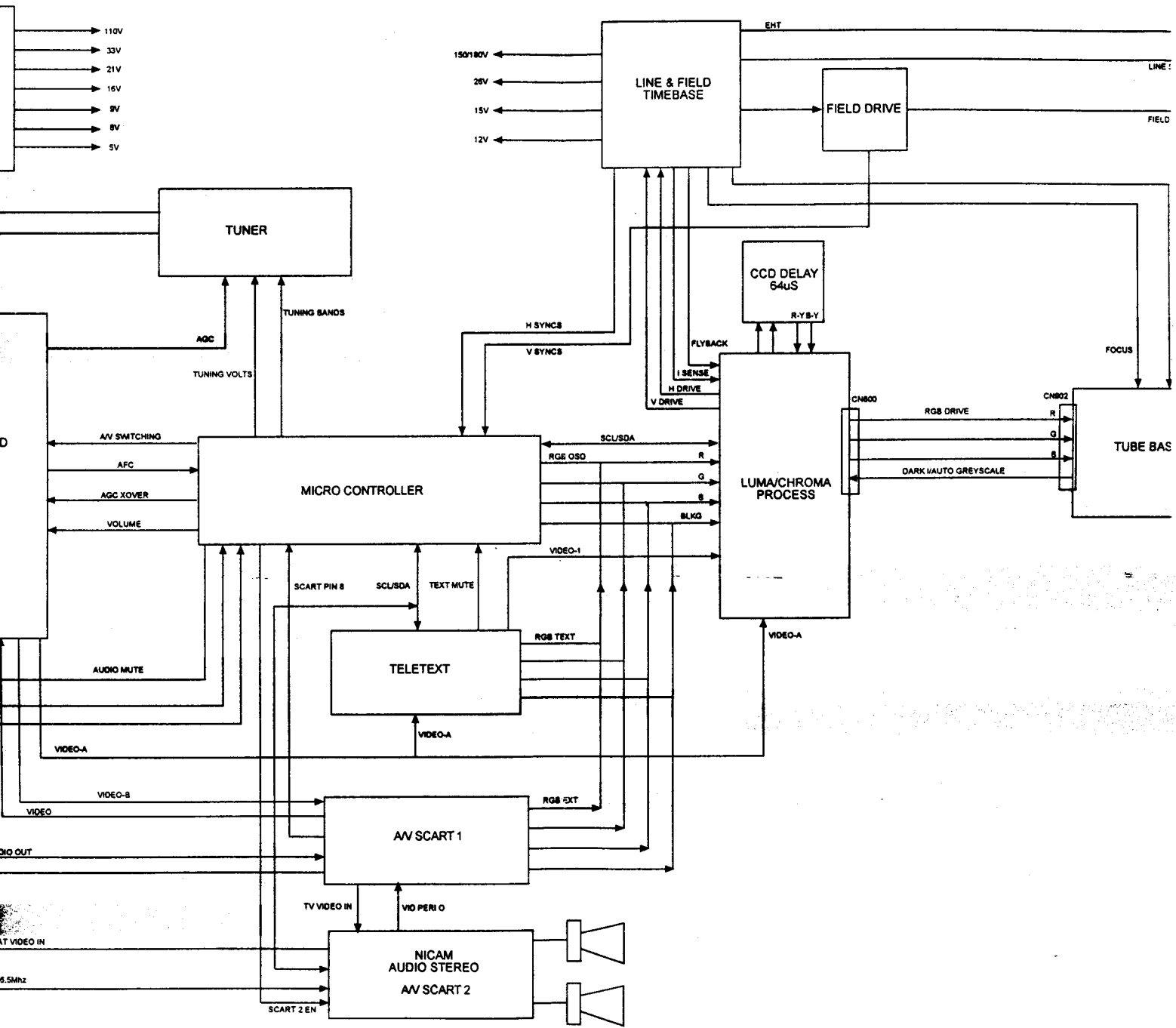


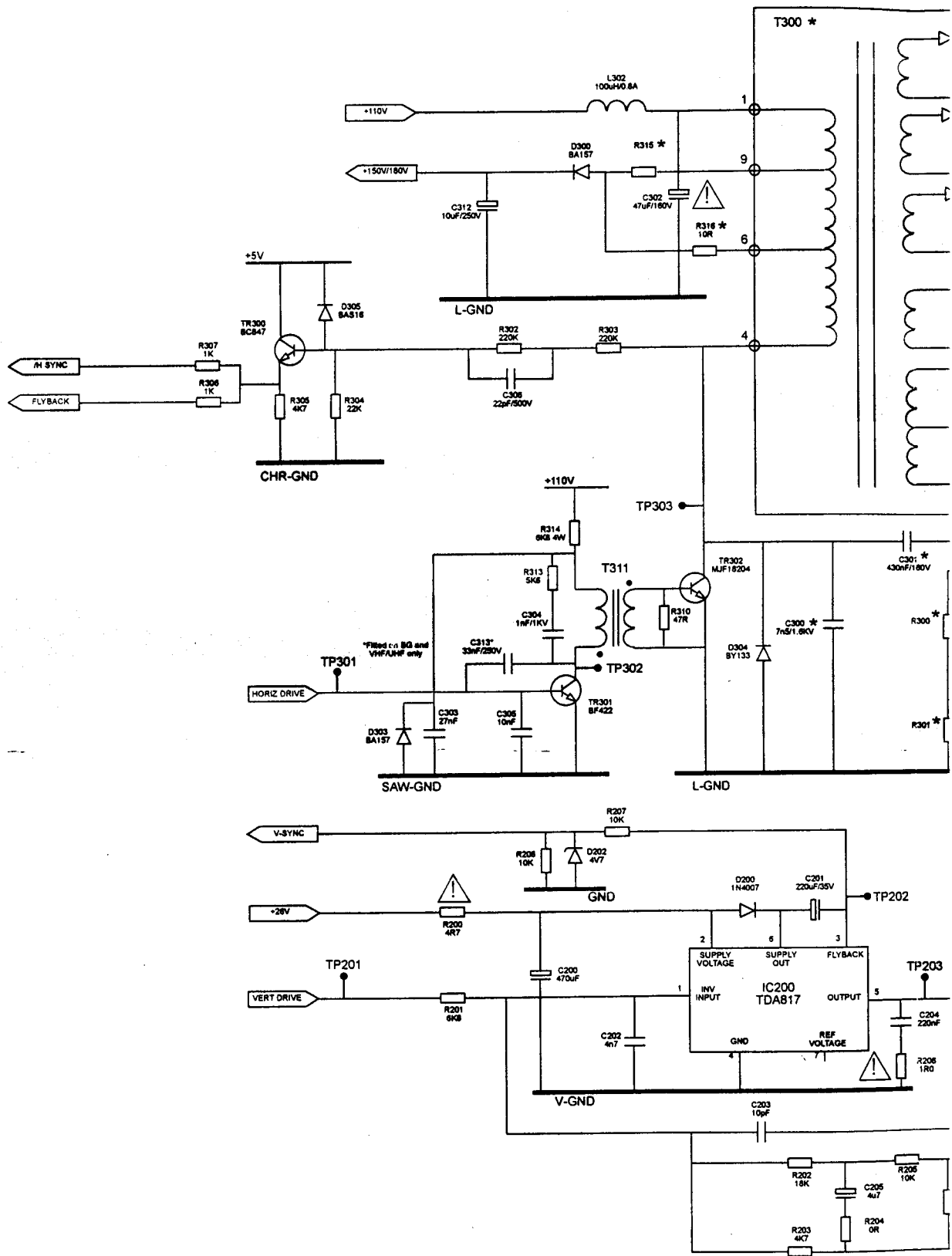


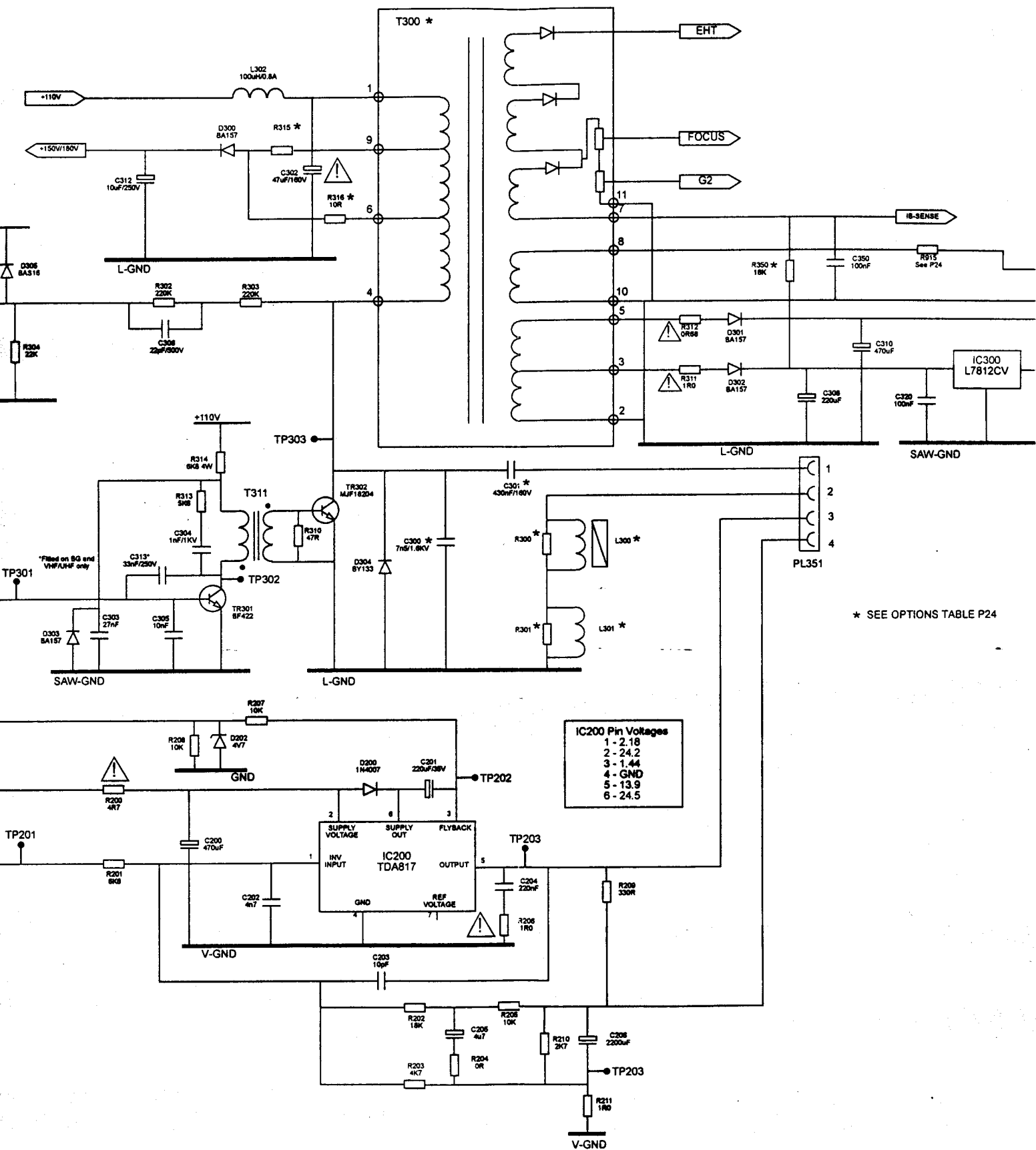


Tube Base Panel Layout

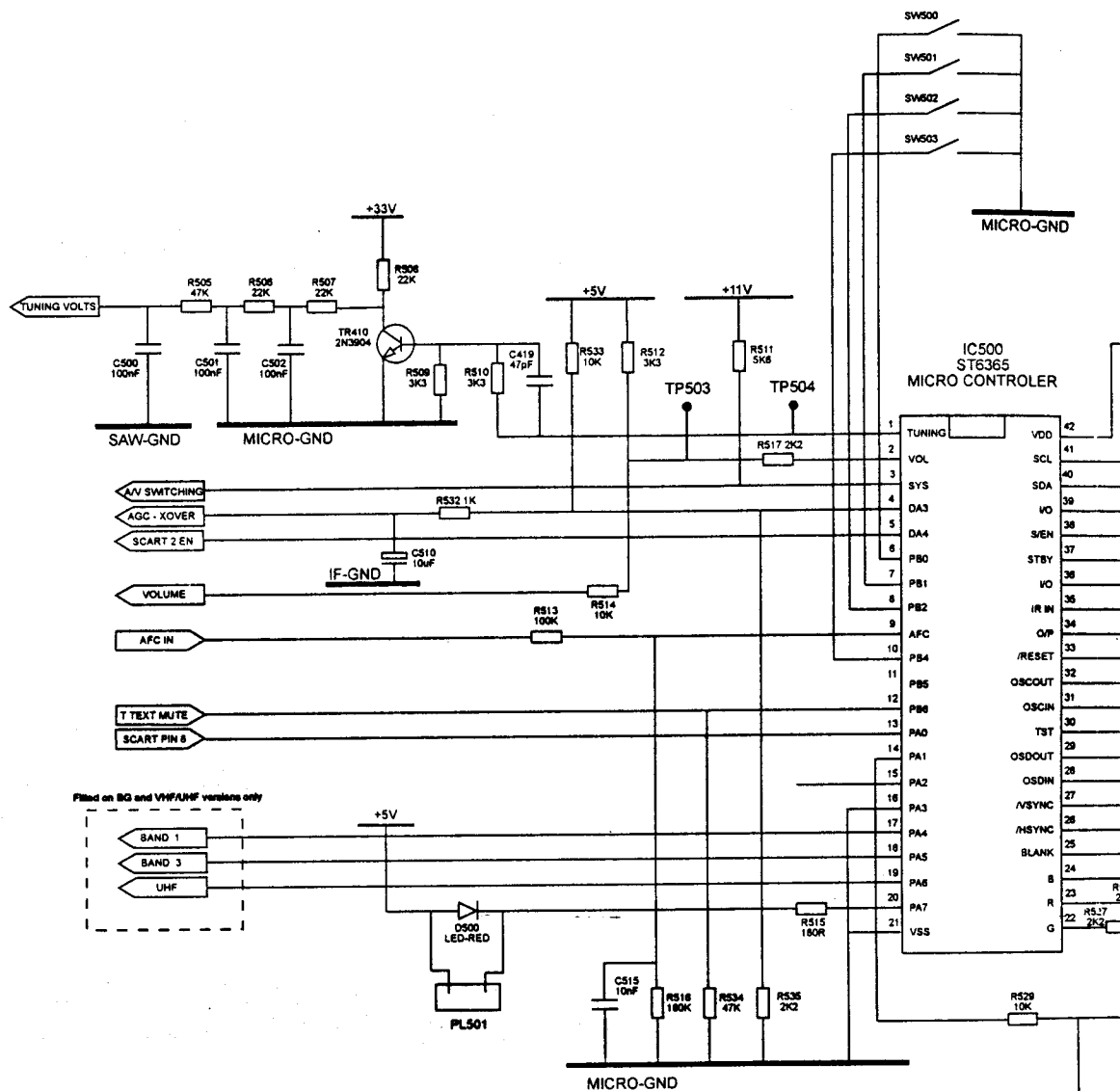




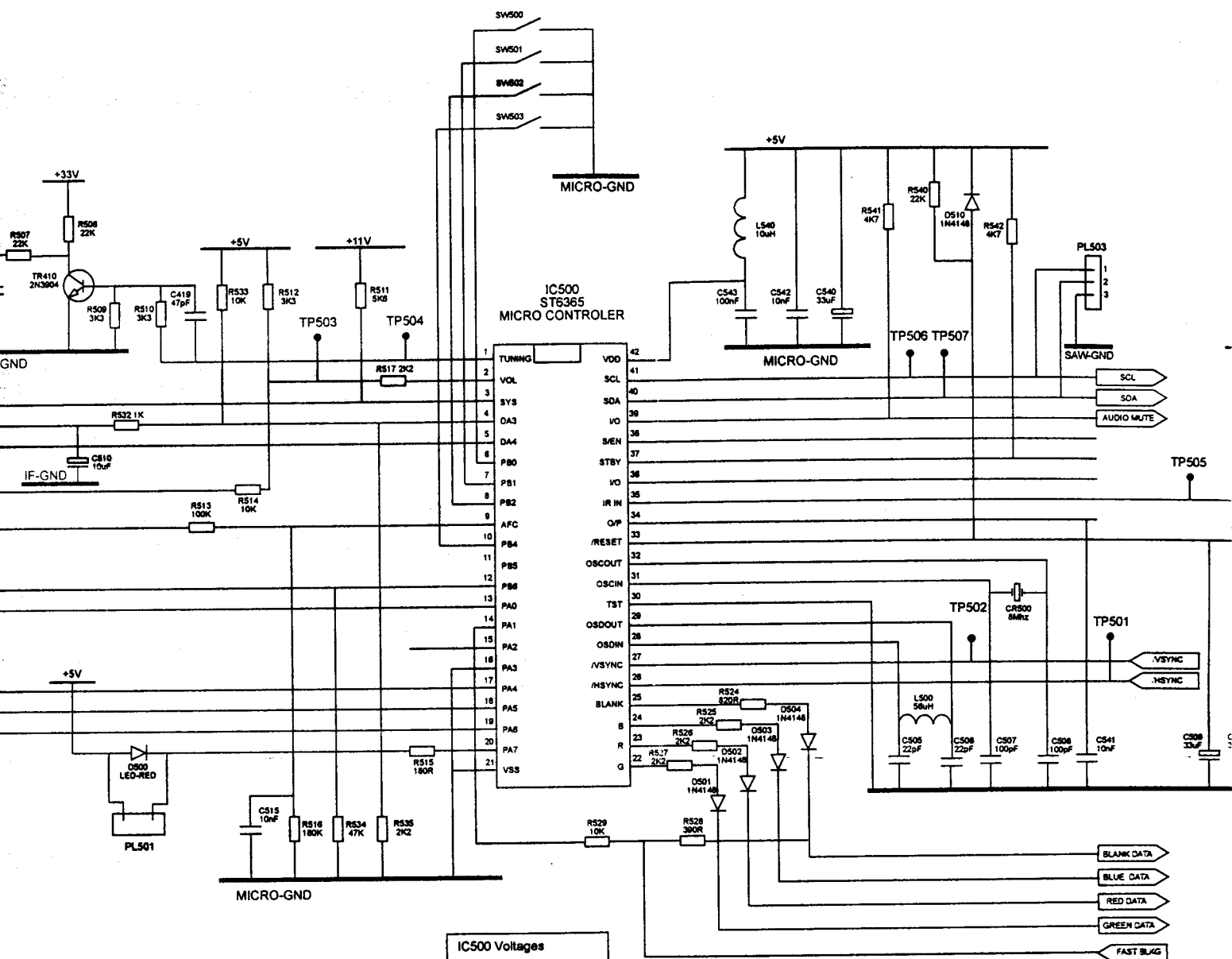




\* SEE OPTIONS TABLE P24



IC500 Voltages	
1 - 1.5	22 - 0
2 - 1.5	23 - 0
3 - 3.28	24 - 0
4 - 1.0	25 - 0
5 - N/A	26 - 1.0
6 - 4.96	27 - 0.5
7 - 4.96	28 - 4.29
8 - 4.96	29 - 4.41
9 - 2.85	30 - GND
10 - 4.96	31 - N/A
11 - 4.96	32 - 2.6
12 - 4.24	33 - 4.96
13 - 0.5	34 - N/A
14 - 0.5	35 - 4.88
15 - 4.96	36 - N/A
16 - GND	37 - 4.96
17 - 0	38 - N/A
18 - 0	39 - N/A
19 - 4.9	40 - 3.39
20 - 3.87	41 - 3.28
21 - GND	42 - 4.96



**IC500 Voltages**

1 - 1.5	22 - 0
2 - 1.5	23 - 0
3 - 3.28	24 - 0
4 - 1.0	25 - 0
5 - N/A	26 - 1.0
6 - 4.96	27 - 0.5
7 - 4.96	28 - 4.29
8 - 4.96	29 - 4.41
9 - 2.85	30 - GND
10 - 4.96	31 - N/A
11 - 4.96	32 - 2.8
12 - 4.24	33 - 4.96
13 - 0.5	34 - N/A
14 - 0.5	35 - 4.88
15 - 4.96	36 - N/A
16 - GND	37 - 4.96
17 - 0	38 - N/A
18 - 0	39 - N/A
19 - 4.9	40 - 3.39
20 - 3.87	41 - 3.28
21 - GND	42 - 4.96



				<u>AUDIO STAGE (550)</u>				
				<u>Ref</u>	<u>I</u>	<u>B</u>	<u>Description</u>	<u>Part Number</u>
0.71	R53	1K0		C552		G12	10nF SMD	8672-167-758
0.71	R54	1K0		C553	G2		470uF 16V	
0.06	R55	4K7		C554	G2		33uF 16V	
	R56	6K8		C555		G12	10nF SMD	8672-167-758
0.10	R59	330R		C556		H12	100nF SMD	8672-167-270
0.10	TR1	BC847	75990-100.10	C557		G11	100nF SMD	8672-167-270
0.10	TR2	BC857	8301-000-857	C559		G12	220nF SMD	75990-200.73
0.17	TR3	BC847						
	TR4	BC327	75990-500.12					
3.98	TR5	BC847	75990-100.10	IC550	G2		TDA 2822M	8305-332-820
0.45	TR6	BC847	75990-100.10	L550	G1		10uH	75990-200.74
2.37	TR7	BC847	75990-100.10	L551	G1		10uH	75990-200.74
0.45	TR8	BC847	75990-100.10					
0.45	TR9	BC847	75990-100.10	R550	G1		4R7 1/4W	
0.45	TR10	BC847	75990-100.10	R553		H12	10K SMD	8706-100-097
0.11	TR11	BC847	75990-100.10	R555		H12	100K SMD	8706-100.121
	TR12	BC847	75990-100.10	R556	F4		47K 1/4W	
	TR13	BC847	75990-100.10	R557		H12	100R SMD	8706-100.049
	TR14	BC847	75990-100.10					
	TR20	BC847	75990-100.10	TR550		H12	BC847 SOT23	75990-100.10

**NICAM version**

There are two signal inputs to this circuit from the tuner/IF stages, TV video from the IF demodulator and the 6.0/6.5Mhz FM and NICAM intercarriers. IC1 an ITT MSP3410 decodes standard FM sound and NICAM as well as carrying out the functions of Volume and tone controls and spatial sounds from the I<sup>2</sup>C bus. A clock is generated on pins 62 and 63 at 18.432MHz. TV video is buffered by TR700 to IC4 via TR8 and SCART2 video to IC4 is via TR20. IC4 selects TV or SCART2 by using the SCART2 enable control signal from IC500 and the Scart menu. The resultant video output signal from IC4 is split, one part is fed back to the input of IC400, pin 11 as 'SAT VID O'. The other signal 'VID PERI O' is sent to pin 19 of SCART1 as an output. SCART1 video input is also routed to IC400, pin 12. In this way, SCART1 (VCR) can record the signals on SCART2 (Satellite). The audio switching is routed by IC1. SCART1 stereo audio input signals go to pins 52 & 53. SCART2 stereo audio input signals go to pins 49 & 50. SCART1 audio output signals come from pins 36 & 37, SCART2 audio output signals come from pins 33 & 34. TR12 to TR13 are SCART muting switches.

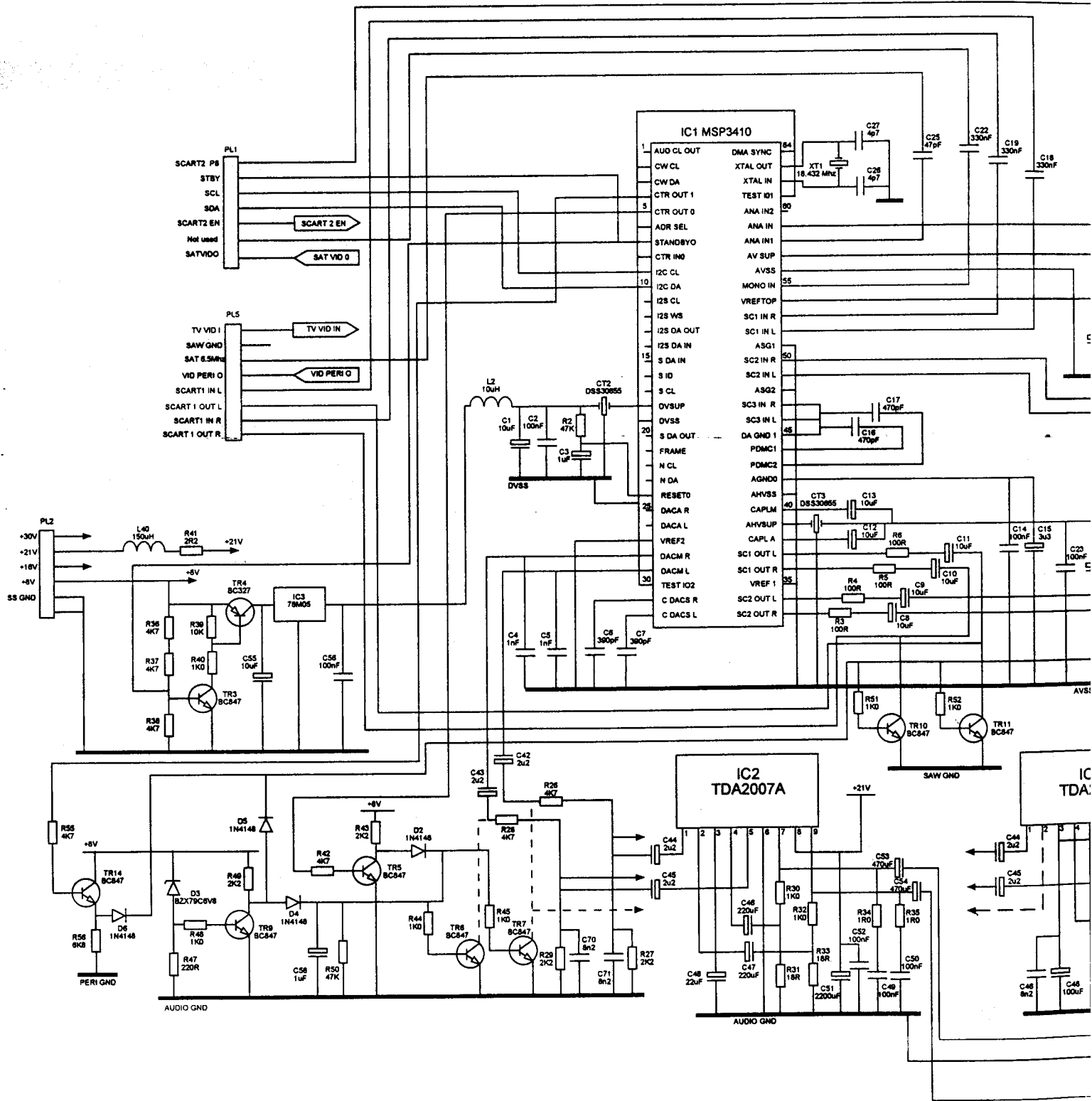
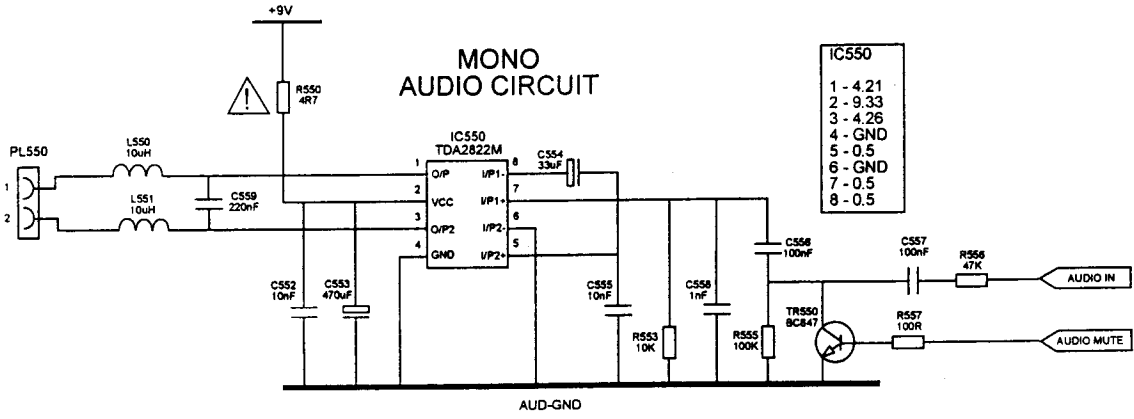
Control signals CTR out 1 and CTR out 2 control audio muting as in the case of tuning and TR9 mutes all audio outputs when the TV is switch off and residual voltages are still present in the power supply capacitors.

TV stereo or the selected SCART audio inputs come out of IC1 pins 28 & 29 to the stereo audio amplifier and internal speakers.

Note that either of two audio amplifier IC's TDA2007A or TDA2615 may be fitted.

					<u>SCART CONNECTOR (700)</u>		
	<u>Ref</u>	<u>I</u>	<u>B</u>	<u>Description</u>	<u>Part Number</u>		
	C700	B1		33uF 16V			
	C701		A13	4n7 SMD	8672-167-254		
	C702		B12	4n7 SMD	8672-167-254		
	C703		B12	470pF SMD	75990-200.19		
	C704		B12	470pF SMD	75990-200.19		
	C705	B2		33uF 16V			
	R700		B12	390R SMD	8706-100-063		
	R701		B12	390R SMD	8706-100-063		
	R702		B12	390R SMD	8706-100-063		
	R703		A13	470R SMD	8706-100-065		
	R704		B12	470R SMD	8706-100-065		
	R705	B3		75R 1/4W			
	R706	B3		75R 1/4W			
	R707	B3		75R 1/4W			
	R708	B3		75R 1/4W			
	R709	B3		75R 1/4W			
	R710		B12	10K SMD	8706-100-097		
	R712		B12	10K SMD	8706-100-097		
	R713		B12	10K SMD	8706-100-097		
	R714		B12	10K SMD	8706-100-097		
	R715	C3		75R 1/4W			
	R716		C11	1K0 SMD	8706-100-073		
	R717		C11	0R SMD	75988-011.49		
	R718		C11	10K SMD	8706-100-097		
	TR700		C11	BC847 SOT23	75990-100.10		
	PL503	A2/3		SCART CONN.	75990-200.75		

# MONO AUDIO CIRCUIT



### Video Output Stages

Video output transistors TR900, TR901 & TR902 are drive directly from buffer transistors on the output drive signals of IC800 in the Y/C processing circuit. The level of the signal applied to the tube base is set in a register within IC800. There are also two registers for the signal parameters within IC800 for contrast (Y & C) and brightness (Black level). Emitter capacitors C900-C902 are present to provide extra gain at high frequencies to overcome loss by tube electrode capacitances.

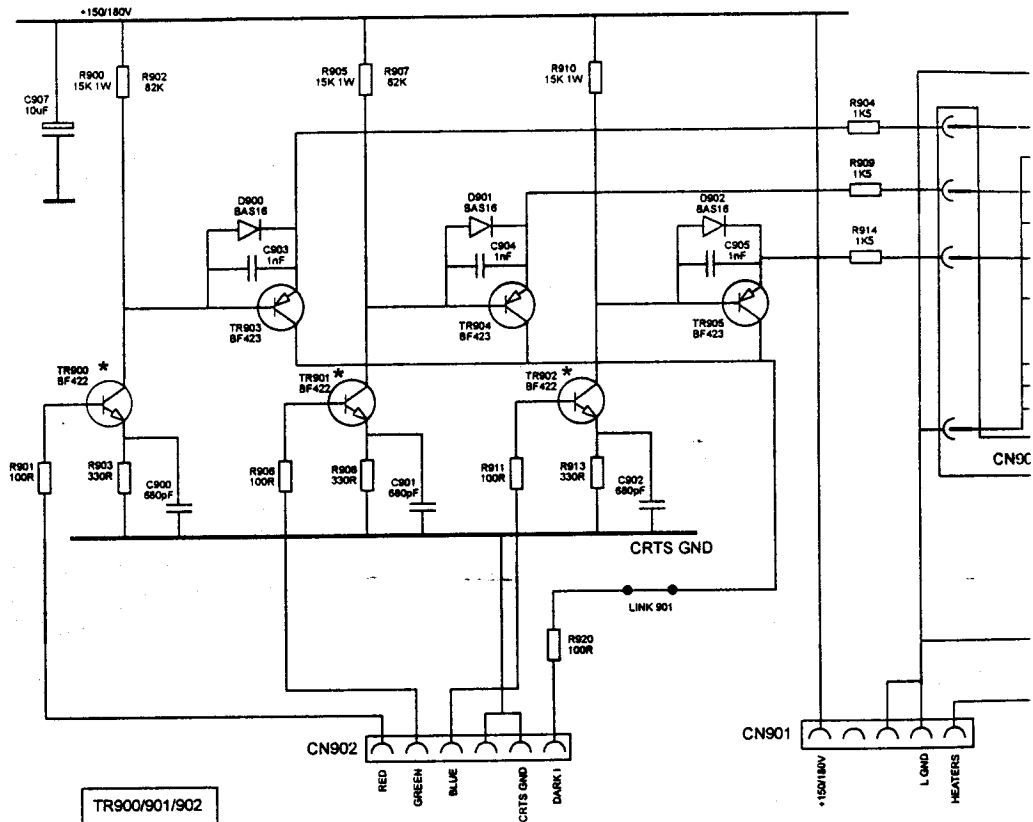
Transistors TR903, TR904 & TR905 are dark/light current sense transistors and combine to a single path for current sensing in auto grey scale mode.

### Auto Grey Scale.

When a video output transistor is driven on by a peak white the voltage drop causes the sensing transistors to conduct producing a collector current proportional to the beam current. When the video output transistor is turned off by a black level then the current from the sensing transistors reduces to a lower level. This gives two current values on the Dark-I line representing residual dark tube current and maximum beam current.

### TUBE BASE PANEL (900)

<u>Ref</u>	<u>Description</u>	<u>Part Number</u>
C900	680pF SMD	8672-159-244
C901	680pF SMD	8672-159-244
C902	680pF SMD	8672-159-244
C903	1nF SMD	8672-159-146
C904	1nF SMD	8672-159-146
C905	1nF SMD	8672-159-146
C906	2n2 2KV	75990-200.76
C907	10uF 250V	75990-200.43
D900	BAS16 SOT23	8309-210-016
D901	BAS16 SOT23	8309-210-016
D902	BAS16 SOT23	8309-210-016
R900	15K 1W	
R901	100R SMD	8706-100-049
R903	330R SMD	8706-100-061
R904	1K5 1/2W	
R905	15K 1W	
R906	100R SMD	8706-100-049
R908	330R SMD	8706-100-061
R909	1K5 1/2W	
R910	15K 1W	
R911	100R SMD	8706-100-049
R913	330R SMD	8706-100-061
R914	1K5 1/2W	
R915	0R68 1W	75990-300.13
	0R82 1W	75990-300.32
	1R0 1W	75990-300.15
	1R5 1W	75990-300.31
	2R2 1W	75990-300-14
	2R7 1W	75990-300.16
R916	1K5 1/2W	
R917	1K5 1/2W	
R920	100R SMD	8706-100-049
TR900	BF422 TO92	75990-300.29
	BF871	75990-200.79
TR901	BF422 TO92	75990-300.29
	BF871	75990-200.79
TR902	BF422 TO92	75990-300.29
	BF871	75990-200.79
TR903	BF423 TO92	75990-200.80
TR904	BF423 TO92	75990-200.80
TR905	BF423 TO92	75990-200.80
	SPIRAL SPRING	
	DEGAUS COIL	
	DAG BRAID LEAD	
	SCREW 5.15 x 26	
CN900	Tube Base	See P.24



TR900/901/902	
Collector	- 95V
Base	- 1.62
Emitter	- 1.08

\* SEE OPTIONS TABLE P24



D E F G H I J K L M

