

ELECTRICAL ADJUSTMENT

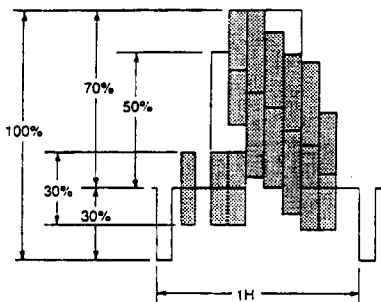
Perform only the alignments required.
If proper equipment is not available, do not attempt an alignment.

■ Measuring equipment and Jigs

- Oscilloscope (Unless otherwise specified in particular, use 10:1 probes.)
- Signal generator
- Direct current milliammeter
- Direct current voltmeter.
- Electrical tools

■ Test Signal

- 1) Monoscope signal
When you have no monoscope signal source for adjustment, connect the unit to a VCR and play an alignment tape (Monoscope).
- 2) Colour bar signal
In this manual, unless otherwise specified in particular, use colour bar signal in specifications below.

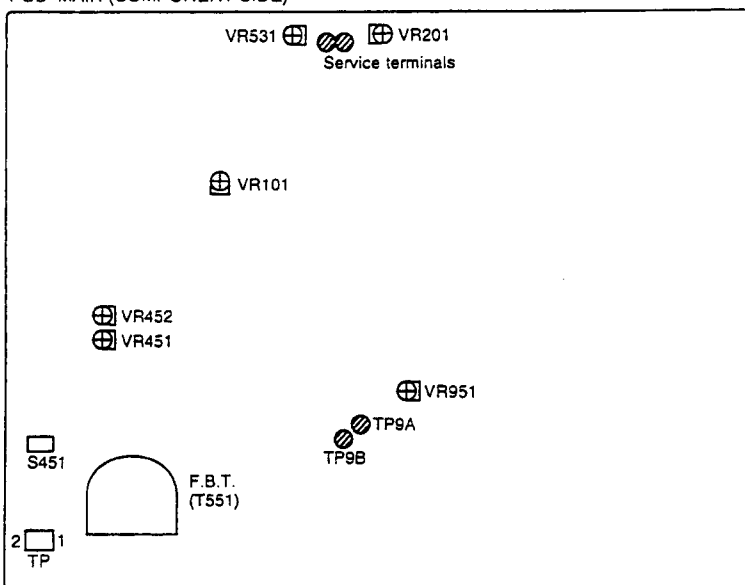


PAL

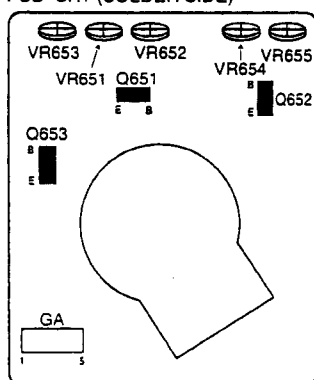
Split-Field Colour Bars (with 100% window)

LOCATION OF TESTPOINTS AND ADJUSTMENTS

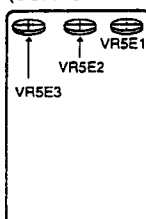
PCB-MAIN (COMPONENT SIDE)



PCB-CRT (SOLDER SIDE)



PCB-PCC CONT (COMPONENT SIDE)



[VIF circuit] 1. RF AGC		Adjustment purpose The best receiving condition of RF signal.
		Symptom when incorrectly adjusted Poor S/N ratio or cross modulation.
Measuring instrument	---	1. Supply an RF signal (Programme). 2. Turn on AFT. 3. Adjust VR101 so that the picture and sound have no beat, noise and inter-modulation distortion.
Test point	---	
EXT trigger	---	
Measurement range	---	
Input signal	RF signal (Programme)	
Input terminal	RF IN terminal	

PCB-MAIN (COMPONENT SIDE)

■ VR101



[Power circuit] 2. B4 Voltage		Adjustment purpose The best value of power supply voltage for horizontal deflection circuit.
		Symptom when incorrectly adjusted Too bright or too dark picture. Too compressed or too expanded horizontal width of picture.
Measuring instrument	DC Voltmeter	1. Supply an RF signal (Programme). 2. Observe the voltage at TP9A and TP9B (Plus lead to TP9A). 3. Adjust VR951 so that the voltage is a value listed in the table below.
Test point	+ lead : TP9A - lead : TP9B	
EXT trigger	---	
Measurement range	---	
Input signal	RF signal (Programme)	
Input terminal	RF IN terminal	

	21 inch	25 inch
Voltage Value	122 ± 3V	145 ± 1V

PCB-MAIN (COMPONENT SIDE)

 VR951
 TP9B TP9A

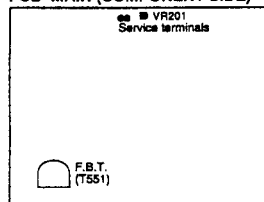

[CRT circuit] 3. Cut Off, White	Adjustment purpose Rate of electron beam shot from each electron gun of R, G and B.
	Symptom when incorrectly adjusted Coloured monochrome, too dark or too bright picture.

Measuring instrument	Oscilloscope
Test point	collector of Q651
EXT trigger	---
Measurement range	DIV 5V TIM 20 μ s
Input signal	---
Input terminal	---

- * This adjustment must follow the Purity and Convergence adjustments.
 - * Preheat the set for twenty minutes or more.
 - * Adjustment Item 10 (Sub Cont) must be performed immediately after this one.
1. Set the no signal condition in AV mode.
 2. Set VR651, VR652 and VR653 to the mechanical centre position.
 3. Set VR654, VR655 and VR201 to the mechanical centre position.
 4. Observe the waveform at the collector of Q651. (Use GA connector pin ② for ground.)
 5. Adjust VR651 so that the pedestal level is 150V.

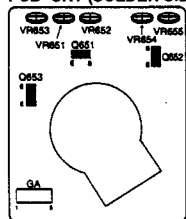


PCB-MAIN (COMPONENT SIDE)

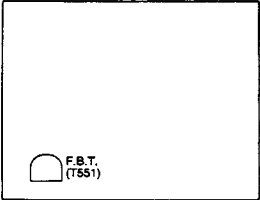


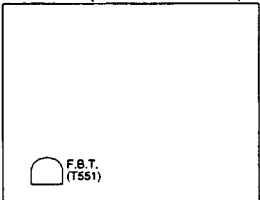
6. Observe the waveform at the collector of Q652. (Use GA connector pin ② for ground.)
7. Adjust VR652 so that the pedestal level is 150V.
8. Observe the waveform at the collector of Q653. (Use GA connector pin ② for ground.)
9. Adjust VR653 so that the pedestal level is 150V.

PCB-CRT (SOLDER SIDE)



10. Short - circuit the service terminals.
11. Adjust SCREEN control on F.B.T. to the point where one red, green or blue line becomes just visible.
12. Adjust two of VR651, VR652 and VR653 so that the horizontal line is white.
13. Open the service terminals.
14. Supply a video signal (White raster).
15. Adjust VR654 and VR 655 so that the entire screen is pure white.

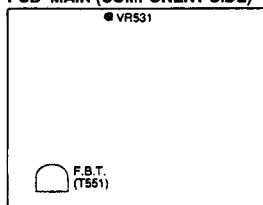
4. Focus		Adjustment purpose Sharpness of picture.
		Symptom when incorrectly adjusted Poor sharpness of picture.
Measuring instrument	---	1. Supply an RF signal(Programme). 2. Adjust FOCUS volume on F.B.T. to the best overall focus.
Test point	---	
EXT trigger	---	
Measurement range	---	
Input signal	RF signal (Programme)	
Input terminal	RF IN terminal	
PCB-MAIN (COMPONENT SIDE) 		

5. Black Level		Adjustment purpose Black level of video signal.
		Symptom when incorrectly adjusted Too bright or too dark picture.
Measuring instrument	---	1. Supply a video signal (Colour bar). 2. Set COLOUR control to minimum. 3. Make sure that the blue bar area does not brighten. If necessary, adjust SCREEN control on FBT so that the blue bar area does not brighten. 4. Make sure that the red bar area is slightly bright. If necessary, adjust SCREEN control on FBT so that the red bar area is slightly bright.
Test point	---	
EXT trigger	---	
Measurement range	---	
Input signal	Video signal (Colour bar)	
Input terminal	VIDEO IN terminal	
PCB-MAIN (COMPONENT SIDE) 		

[Deflection circuit] 6. Horizontal Centre		Adjustment purpose Horizontal position of picture.
		Symptom when incorrectly adjusted Picture too shifted to the left, or the right.
Measuring instrument	---	<ol style="list-style-type: none"> 1. Supply a video signal (Monoscope). 2. Adjust VR531 so that readings of left and right markers are the same.
Test point	---	
EXT trigger	---	
Measurement range	---	
Input signal	Video signal (Monoscope)	
Input terminal	VIDEO IN terminal	

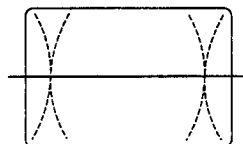
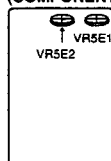


PCB-MAIN (COMPONENT SIDE)

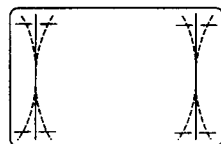


7. East West PCC (25" model only)		Adjustment purpose Horizontal linearity of picture.
		Symptom when incorrectly adjusted Horizontal distortion of picture.
Measuring instrument	---	<ol style="list-style-type: none"> 1. Supply a video signal (Crosshatch). 2. Press OPTIMUM button on the remote hand unit. 3. Observing the second line from both ends on the screen. Adjust VR5E1 so that the upper and lower distortions are symmetrical. 4. Adjust VR5E2 so that the both vertical lines are straight. Repeat step 3 to 4 above, if necessary.
Test point	---	
EXT trigger	---	
Measurement range	---	
Input signal	Video signal (Crosshatch)	
Input terminal	VIDEO IN terminal	

PCB-PCC CONT (COMPONENT SIDE)



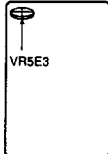
VR5E1

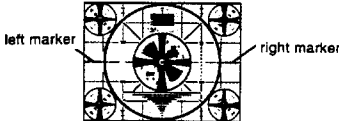


VR5E2

8. Horizontal Width (25" model only)		Adjustment purpose	Horizontal width of picture.
		Symptom when incorrectly adjusted	Too compressed or too expanded horizontal width of picture.
Measuring instrument	---	<ol style="list-style-type: none">1. Supply a video signal (Monoscope).2. Press OPTIMUM button on the remote hand unit.3. Adjust VR5E3 so that the sum of left and right markers is 4.5 – 5.8 (equivalent to 7 – 9% overscan).	
Test point	---		
EXT trigger	---		
Measurement range	---		
Input signal	Video signal (Monoscope)		
Input terminal	VIDEO IN terminal		

**PCB—PCC CONT
(COMPONENT SIDE)**



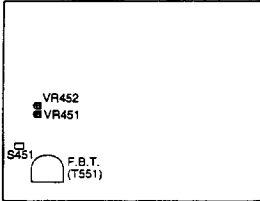


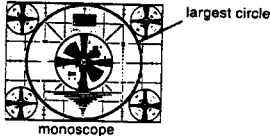
left marker

right marker

9. Vertical Height, Vertical Linearity, Vertical Centre		Adjustment purpose	Vertical height of picture.
		Symptom when incorrectly adjusted	Too compressed or too expanded vertical height of picture. Vertical linearity of picture.
Measuring instrument	---	<ol style="list-style-type: none"> 1. Supply a video signal (Monoscope). 2. Press OPTIMUM button on the remote hand unit. 3. Adjust VR452 for approx. 90% vertical size of raster. 4. Adjust VR451 for symmetry of vertical linearity. 5. Adjust VR452 so that the largest circle is a complete round. 6. Adjust S451 so that the largest circle is vertical centre position. 	
Test point	---		
EXT trigger	---		
Measurement range	---		
Input signal	Video signal (Monoscope)		
Input terminal	VIDEO IN terminal		

PCB—MAIN (COMPONENT SIDE)





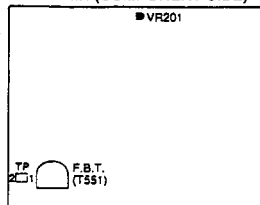
monoscope

[Video circuit] 10. Sub Cont	<table> <tr> <td>Adjustment purpose</td><td>The best value of beam current.</td></tr> <tr> <td>Symptom when incorrectly adjusted</td><td>Too bright or too dark picture.</td></tr> </table>	Adjustment purpose	The best value of beam current.	Symptom when incorrectly adjusted	Too bright or too dark picture.
Adjustment purpose	The best value of beam current.				
Symptom when incorrectly adjusted	Too bright or too dark picture.				

Measuring instrument	DC milliammeter	* Preheat the set for twenty minutes or more. 1. Supply a video signal (Colour bar). 2. Press OPTIMUM button on the remote hand unit. 3. Observe the beam current values at TP connector pin ① and pin ②. (Plus lead to pin ①) 4. Adjust VR201 so that the beam current is a value listed in the table below.
Test point	+lead : TPconnector pin① -lead : TPconnector pin②	
EXT trigger	---	
Measurement range	---	
Input signal	Video signal (Colour bar)	
Input terminal	VIDEO IN terminal	

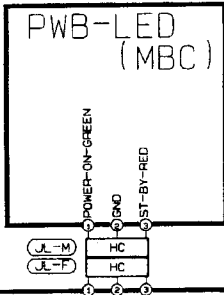
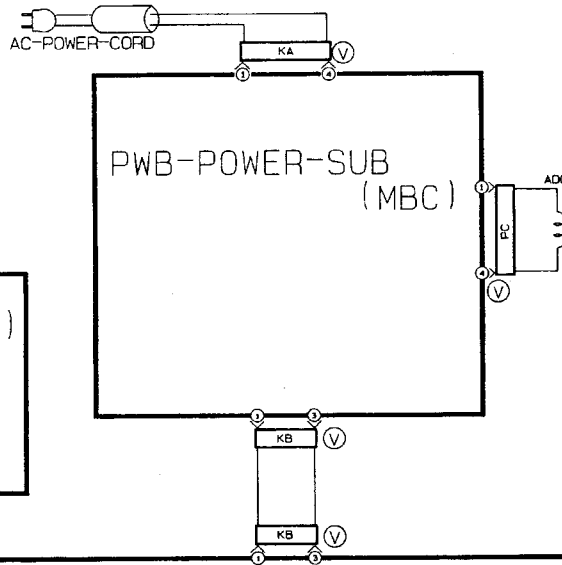
	21 inch	25 inch
Beam Current	875±20μA	1030 ±20μA

PCB—MAIN (COMPONENT SIDE)

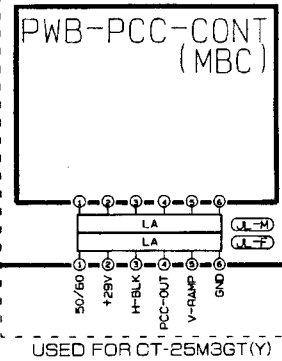


SCHEMATIC DIAGRAM MODELS

EE1 CHASSIS BLOCK DIAG



	CT-21M3GT(Y)	CT-25
ITC	A51EAL55X01	A59EC



PWB-MAIN

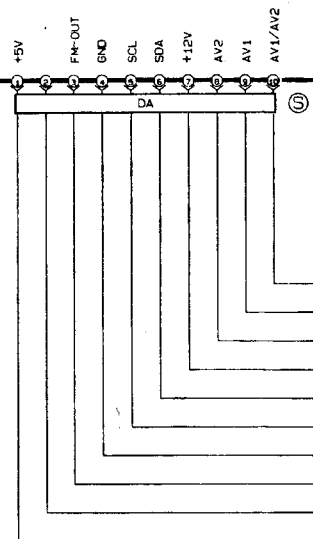
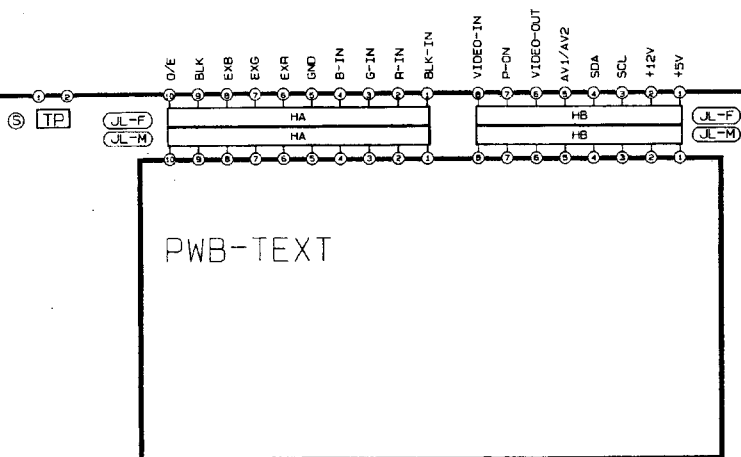
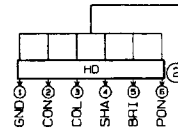
S706
POWER

P-L ARRANGEMENT

S703
CH/VOL

S702
-

S701
+



POLARIS

CHASSIS BLOCK DIAGRAM

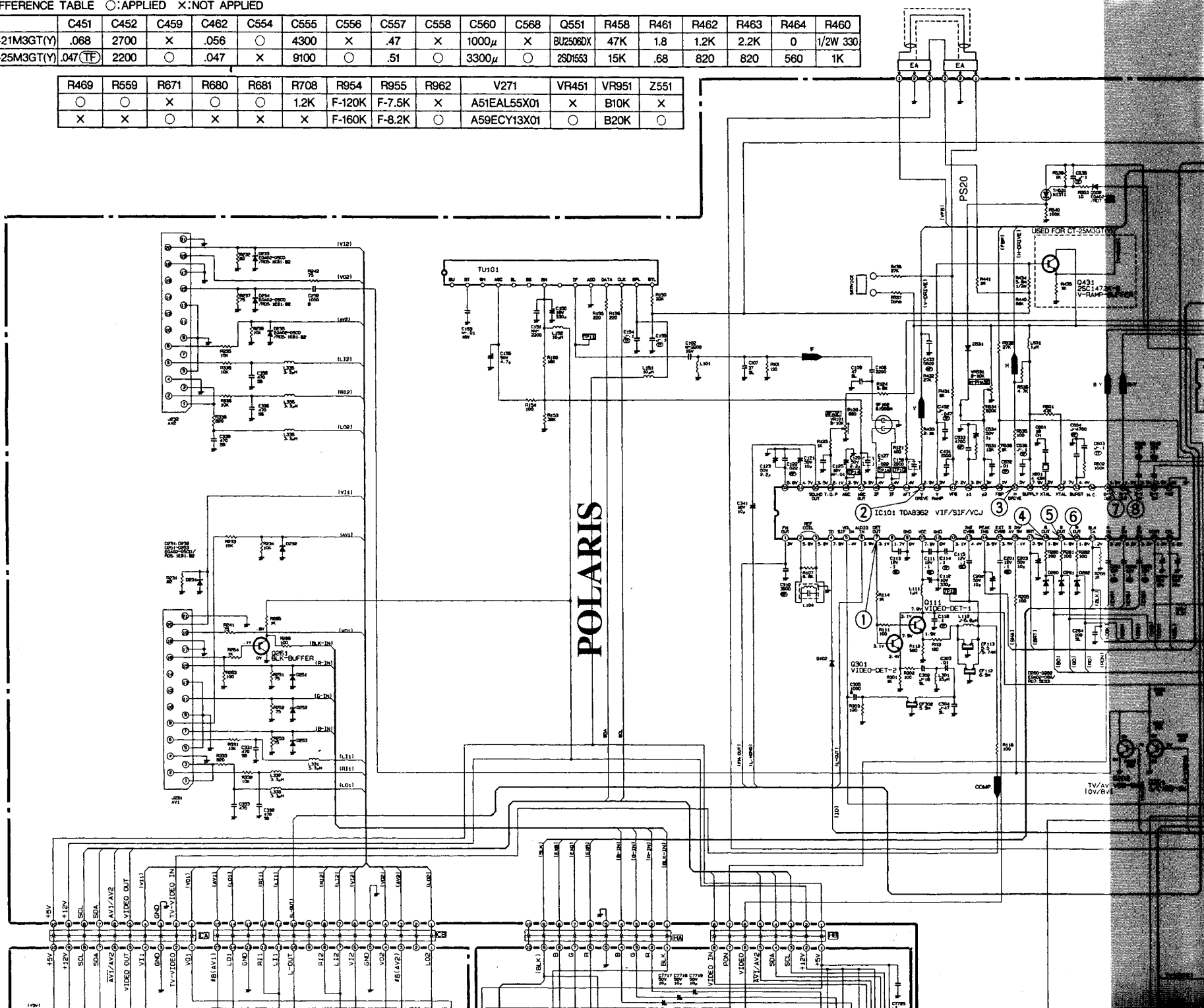


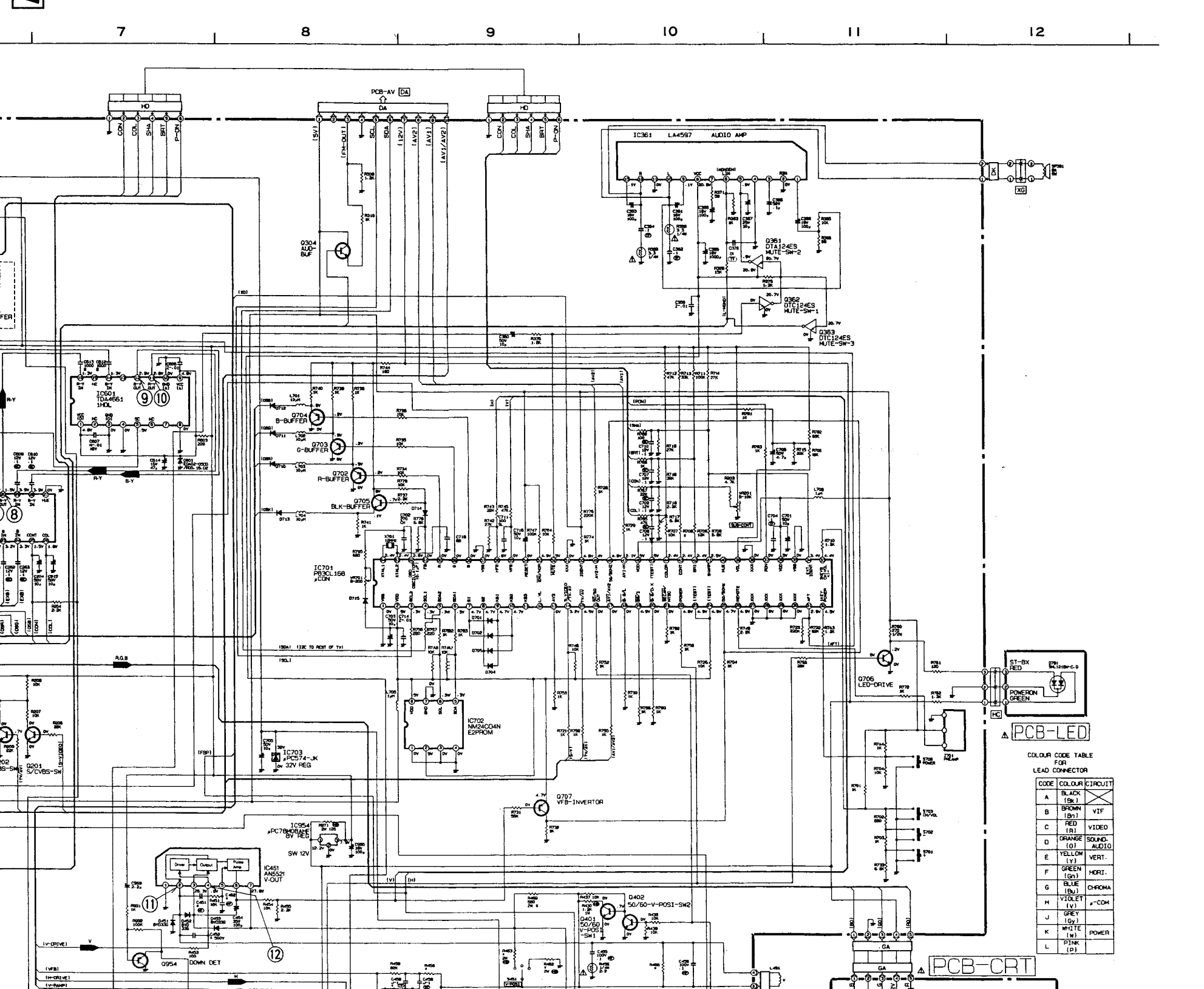
DIFFERENCE TABLE ○:APPLIED X:NOT APPLIED

	C451	C452	C459	C462	C554	C555	C556	C557	C558	C560	C568	Q551	R458	R461	R462	R463	R464	R460
CT-21M3GT(Y)	.068	2700	X	.056	○	4300	X	.47	X	1000 μ	X	BU2506DX	47K	1.8	1.2K	2.2K	0	1/2W 330
CT-25M3GT(Y)	.047 (TF)	2200	○	.047	X	9100	○	.51	○	3300 μ	○	2SD1553	15K	.68	820	820	560	1K

R469	R559	R671	R680	R681	R708	R954	R955	R962	V271	VR451	VR951	Z551
○	○	X	○	○	1.2K	F-120K	F-7.5K	X	A51EAL55X01	X	B10K	X
X	X	○	X	X	X	F-160K	F-8.2K	○	A59ECY13X01	○	B20K	○

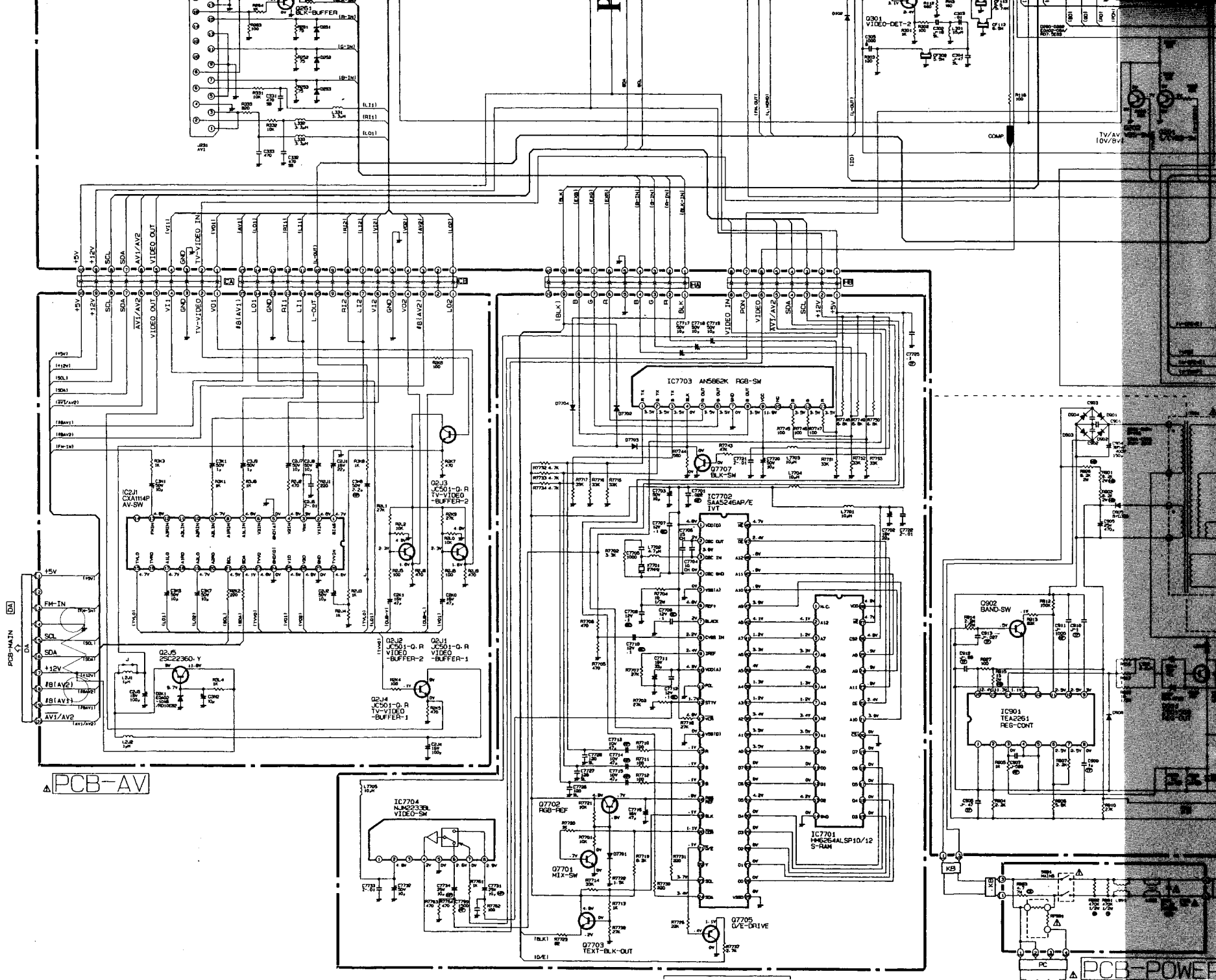
POLARIS

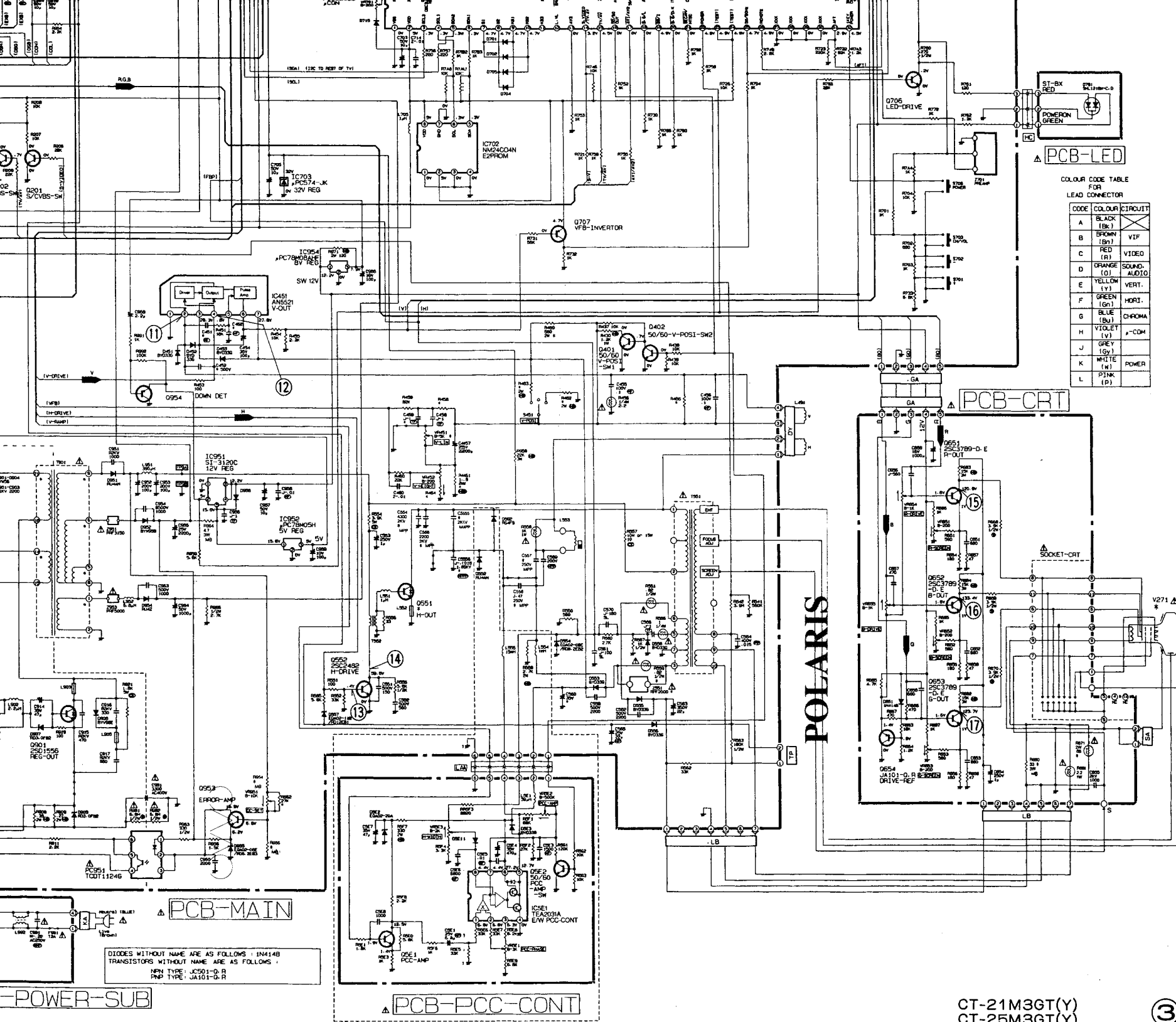




COLOUR CODE TABLE
FOR
LEAD CONNECTOR

CODE	COLOUR	CIRCUIT
A	BLACK (Bk)	VIF
B	BROWN (Br)	
C	RED (R)	VIDEO
D	ORANGE (O)	SOUND
E	YELLOW (Y)	AUDIO
F	GREEN (Gr)	VERT.
G	BLUE (Bl)	HORI.
H	VIOLET (V)	CHROMA
J	GREY (Gy)	POWER
K	WHITE (W)	POWER
L	PINK (P)	POWER

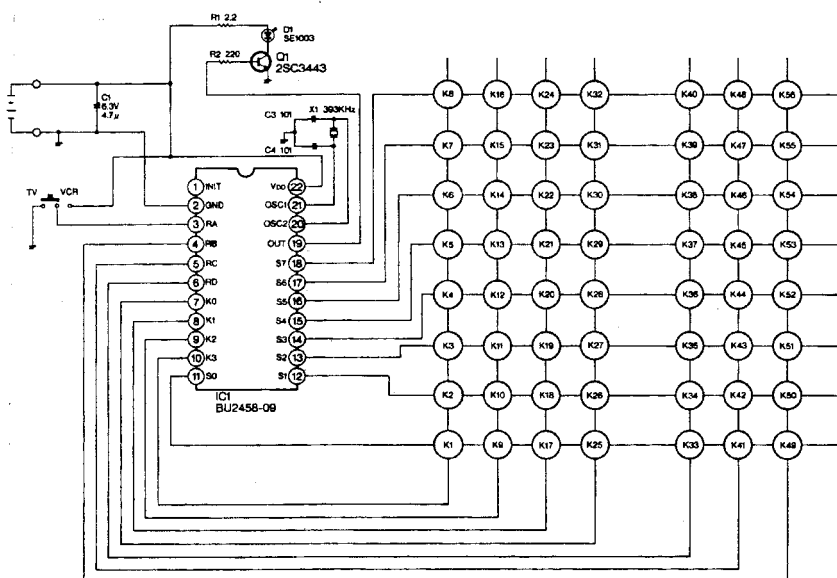




CT-21M3GT(Y)
CT-25M3GT(Y)



TRANSMITTER-REMOCON

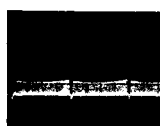


K1	1	K33	I/II
K2	2	K34	DG
K3	3	K35	CH-PRESET
K4	4	K36	STATUS
K5	5	K37	SIZE
K6	6	K38	S****
K7	7	K39	
K8	8	K40	AUTO-SEARCH
K9	9	K41	(F5) (BROWSE PREVIOUS)
K10	0	K42	REVL
K11	*	K43	MODE
K12	CM	K44	STORE
K13	CH +	K45	→ ← (NORMAL)
K14	MENU	K46	
K15	VOL -	K47	
K16	MUTE	K48	
K17	CH -	K49	
K18	VOL +	K50	
K19	(AV)	K51	
K20	(DISPLAY)	K52	
K21	CANCEL/TIME	K53	
K22	RED	K54	
K23	GREEN	K55	
K24	■/YELLOW	K56	SYSTEM
K25	■/CYAN	K57	
K26	●	K58	
K27	◀/HOLD	K59	
K28	▶/TX-MIX-TV	K60	
K29	▶/INDEX	K61	
K30	POWER	K62	
K31	◀ CH	K63	
K32	OFF TIMER	K8+K16	CHILD-LOCK

CHASSIS WAVEFORMS



①2.4Vp-p(H)



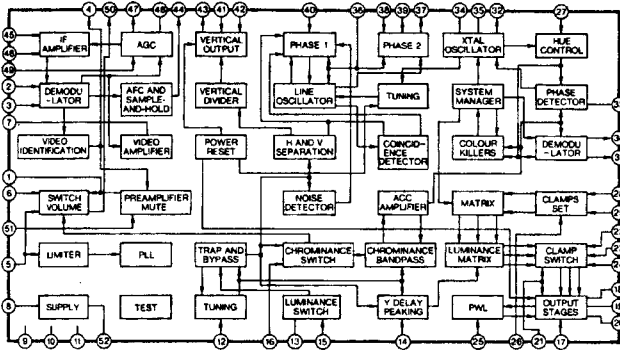
②8.8Vp-p(V)



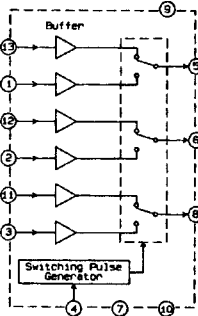
③2.0Vp-p(H)

IC BLOCK DIAGRAMS

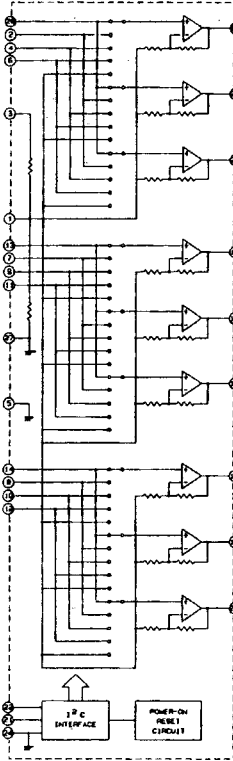
IC101 TDA8362



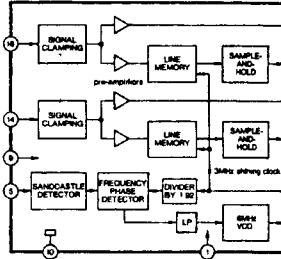
IC7703 AN5862K



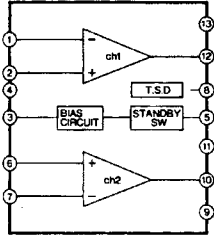
IC2J1 CXA1114P



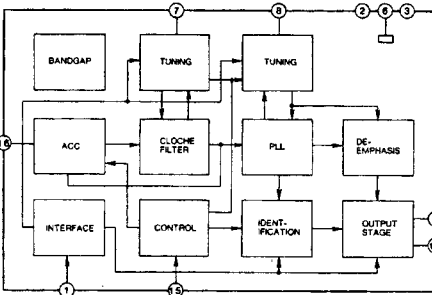
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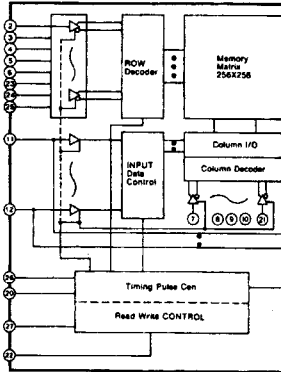
IC361 LA4597



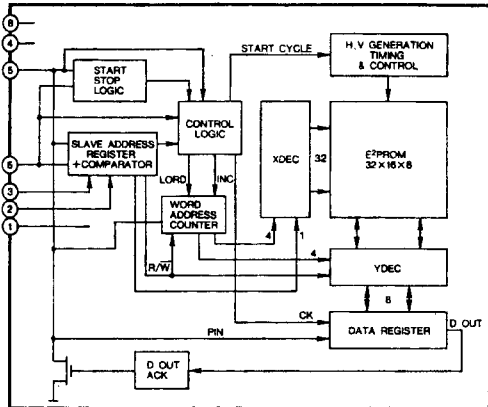
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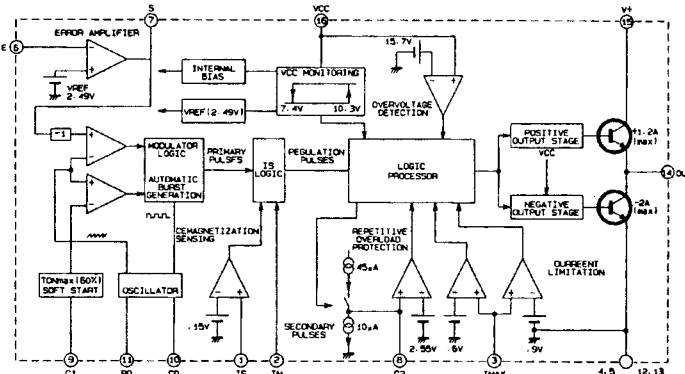
IC7701 HM6264ALSP



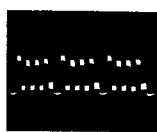
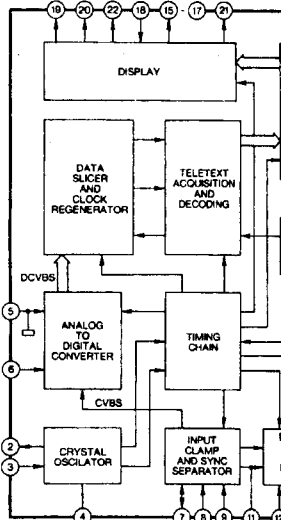
IC702 NM24C04N



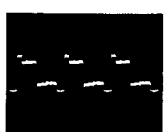
IC901 TEA2261



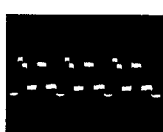
IC7702 SAA5246AP/E



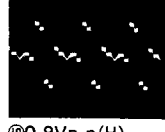
④3.8Vp-p(H)



⑤3.6Vp-p(H)



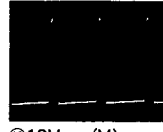
⑥3.6Vp-p(H)



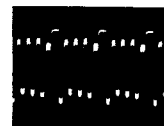
⑩0.9Vp-p(H)



⑪5.5Vp-p(V)



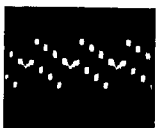
⑫12Vp-p(V)



⑬100Vp-p(H)



⑭98Vp-p(H)



⑦0.7Vp-p(H)



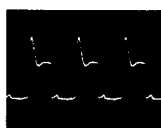
⑧0.5Vp-p(H)



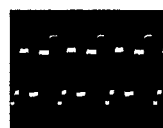
⑨1.3Vp-p(H)



⑬0.7Vp-p(H)



⑬210Vp-p(H)



⑮95Vp-p(H)

IC BLOCK DIAGRAMS

