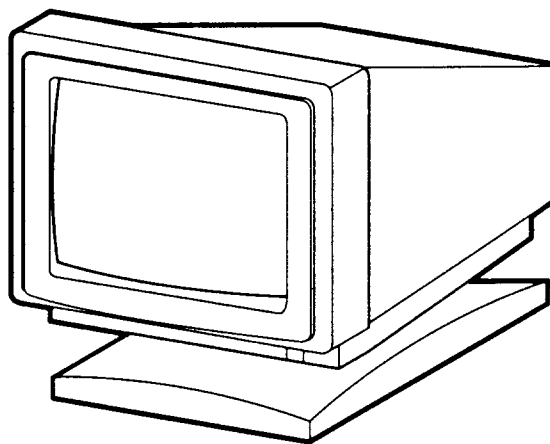


GoldStar

COLOR MONITOR SERVICE MANUAL

CAUTION

BEFORE SERVICING THE UNIT, READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL.

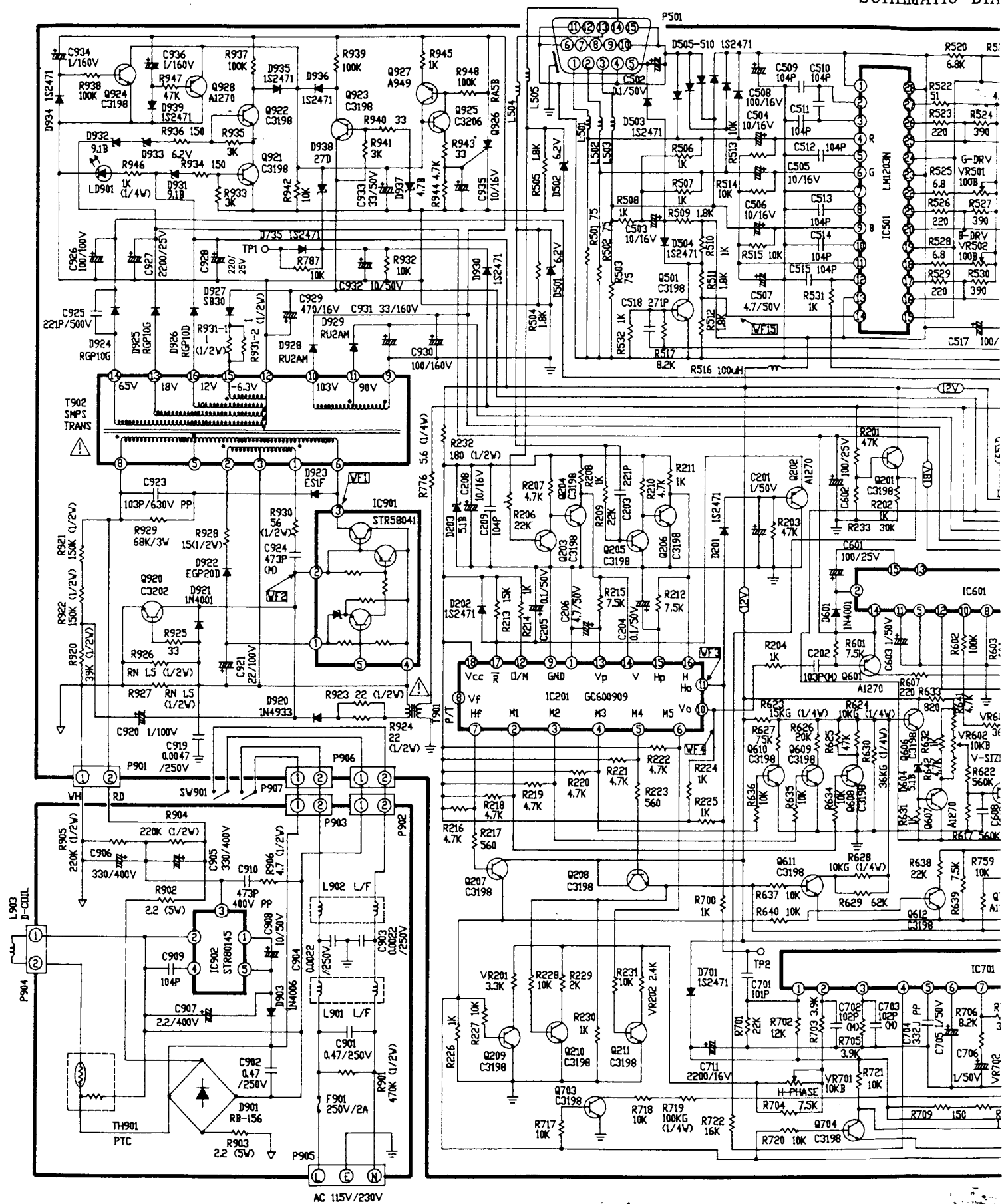


MODEL: CQ452B, CQ453B
1460 SVGA, 1453 SVGA
3028 SVGA, 3039 SVGA
1460 SSI/01, CQ453B MPR-II
CQ453B 0.39
(CA-19 CHASSIS)

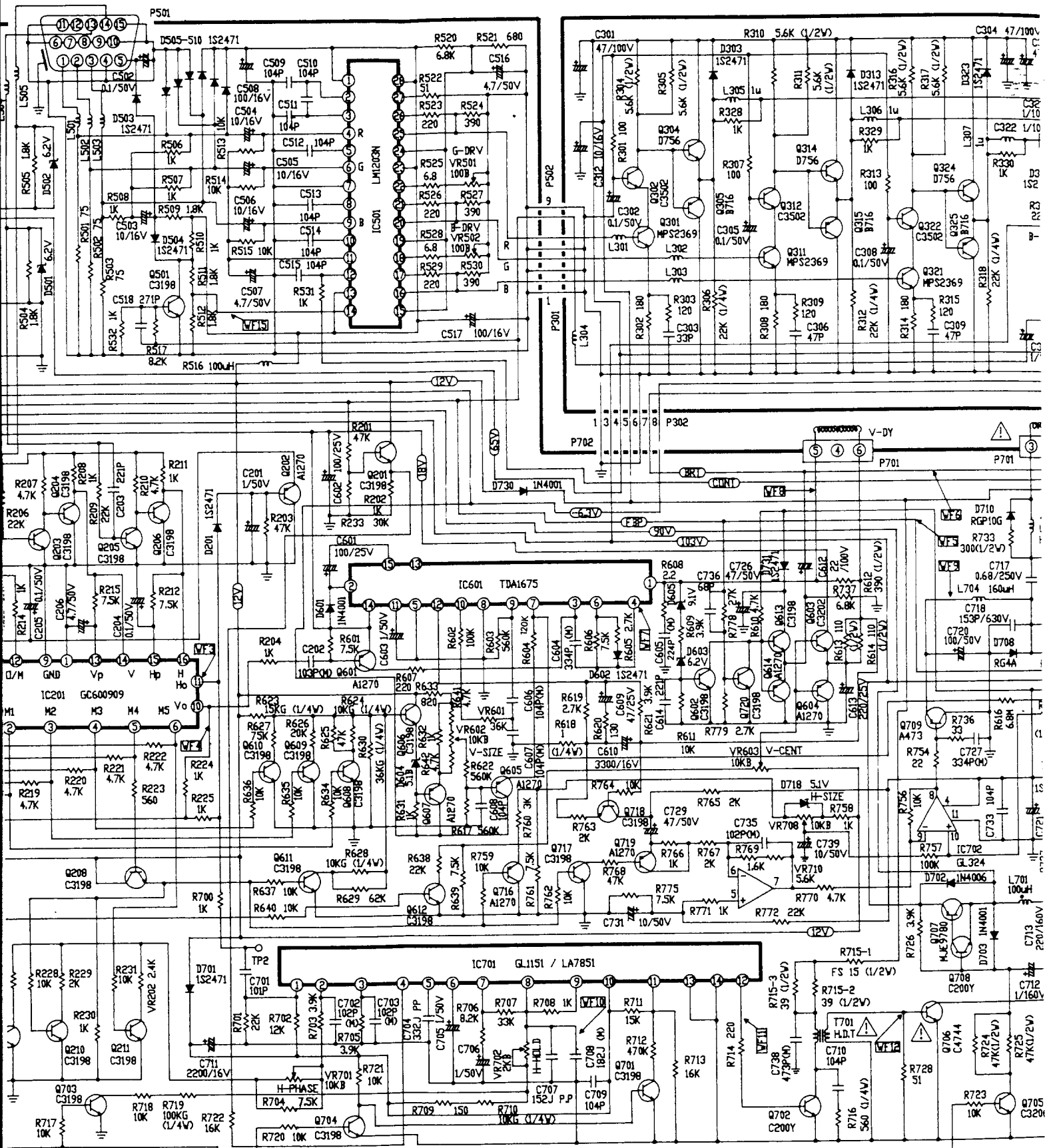


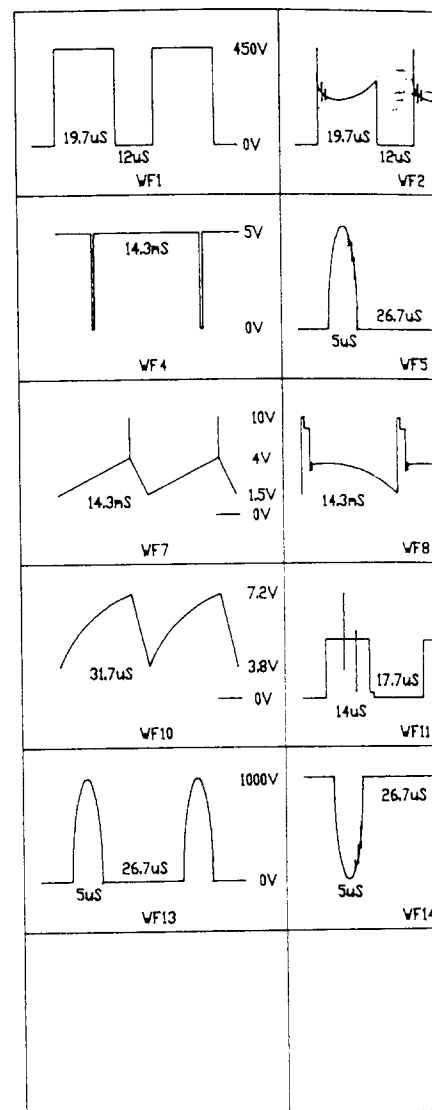
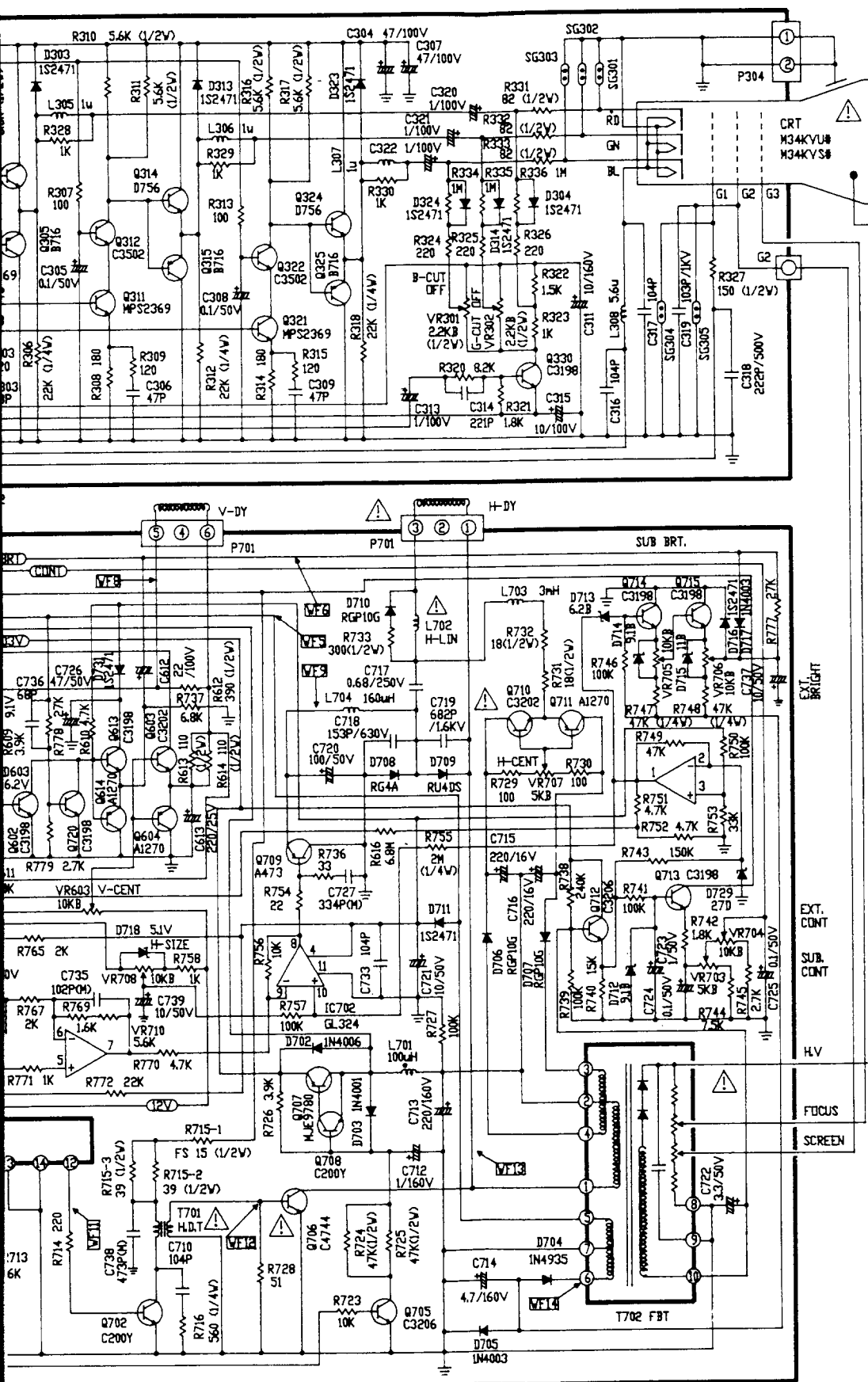
GoldStar

1447







SCHEMATIC DIAGRAM (CA-19 LH = 0.33 mH)

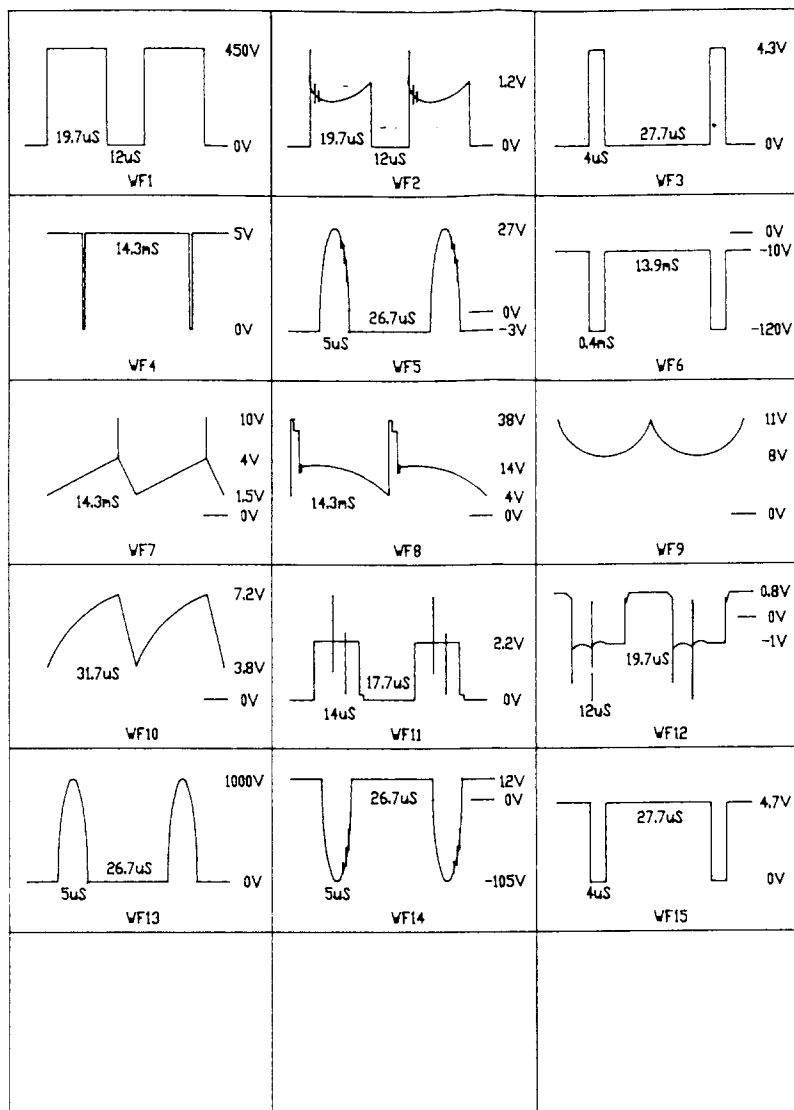


$$L_H = 0.33 \text{ mH})$$


< WAVE FORM > : VGA MODE 2
FULL WHITE PATTERN

IMPORTANT SAFETY NO
THE  SYMBOL MARK OF THIS SCHEMATIC :
FEATURES IMPORTANT FOR PROTECTION FRO
ELECTRICAL SHOCK HAZARDS, WHEN SERVIC
ONLY MANUFACTURER'S SPECIFIED PARTS BE
COMPONENTS IN THE  SYMBOL MARK OF "

LA  SYMBOLE MARQUE DE CE DIAGRAMME
CARACTÉRISTIQUES SPÉCIALES CONÇUES POUR
DES DANGERS D'INCENDIE ET DE SECOURS
SI DES PIÈCES DE CETTE  SYMBOLE MARQUE
N'UTILISEZ QUE DES PIÈCES SPÉCIFIÉES PAR



< WAVE FORM > : VGA MODE 2
FULL WHITE PATTERN

IMPORTANT SAFETY NOTICE

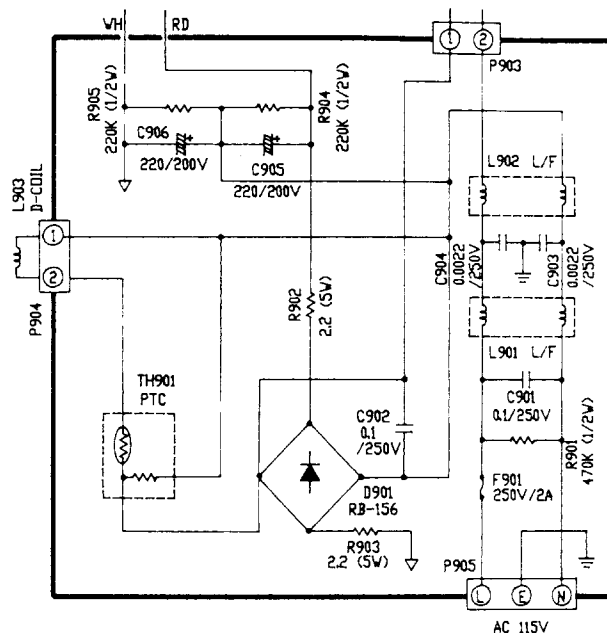
THE SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMATIC.

IMPORTANT AVIS SUR LA SÉCURITÉ

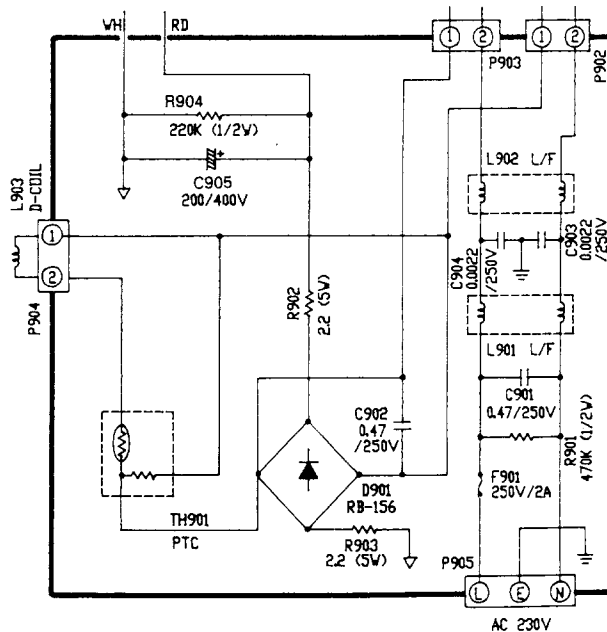
LA SYMBOLE MARQUE DE CE DIAGRAMME SCHEMATICQUE COMPREND D'IMPORTANTES CARACTÉRISTIQUES SPÉCIALES CONÇUES POUR PROTÉGER DES RAYONS X, ET DES DANGERS D'INCENDIE ET DE SECOURS ÉLECTRIQUES. EN CAS DE BESOIN SI DES PIÈCES DE CETTE SYMBOLE MARQUE DOIVENT ÊTRE REMPLACÉ'S N'UTILISEZ QUE DES PIÈCES SPÉCIFIÉES PAR LE MANUFACTURIER.

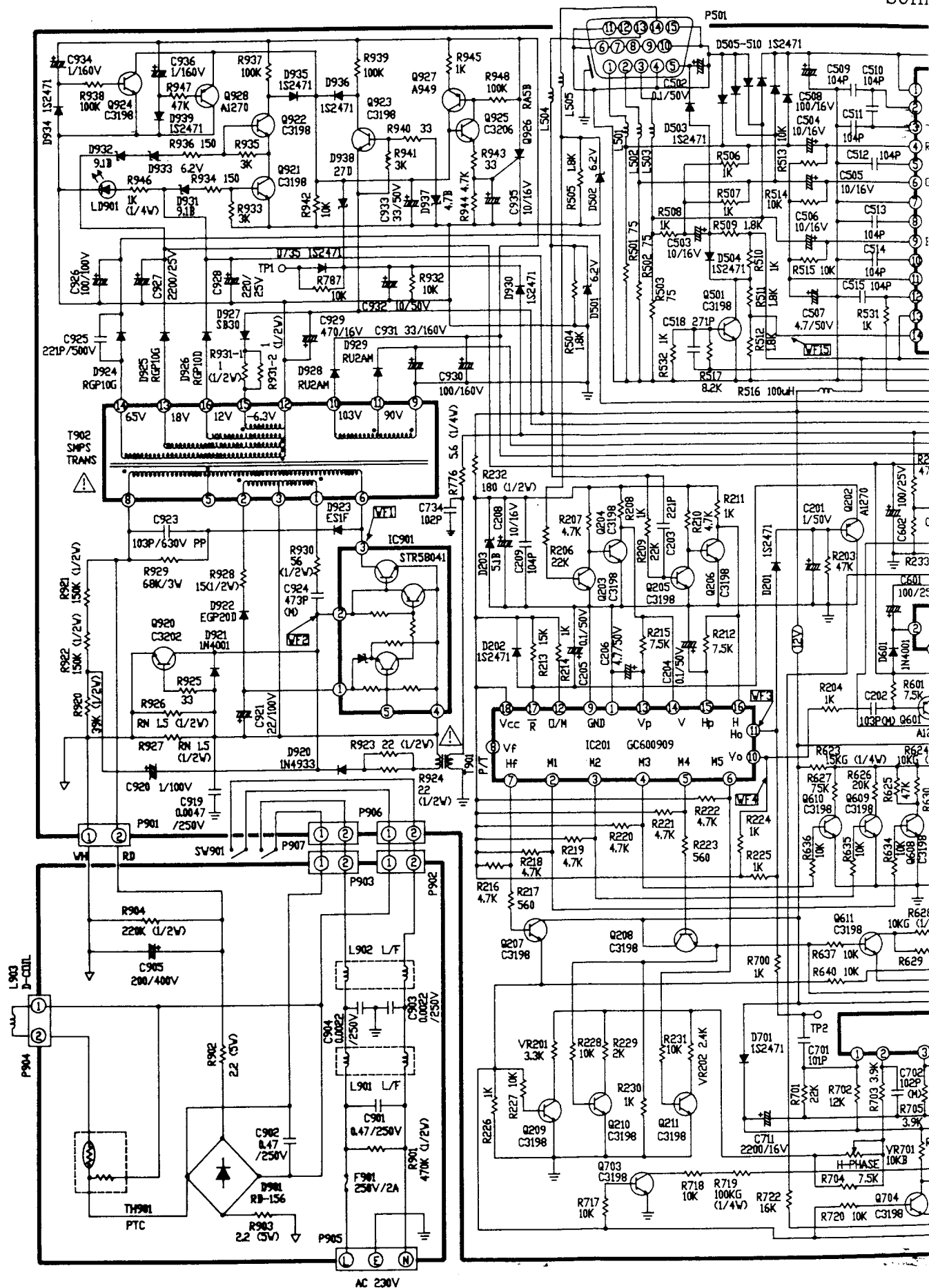
* COMPARISON POWER SCHEMATIC DIAGRAM

1) Only 115V Zone

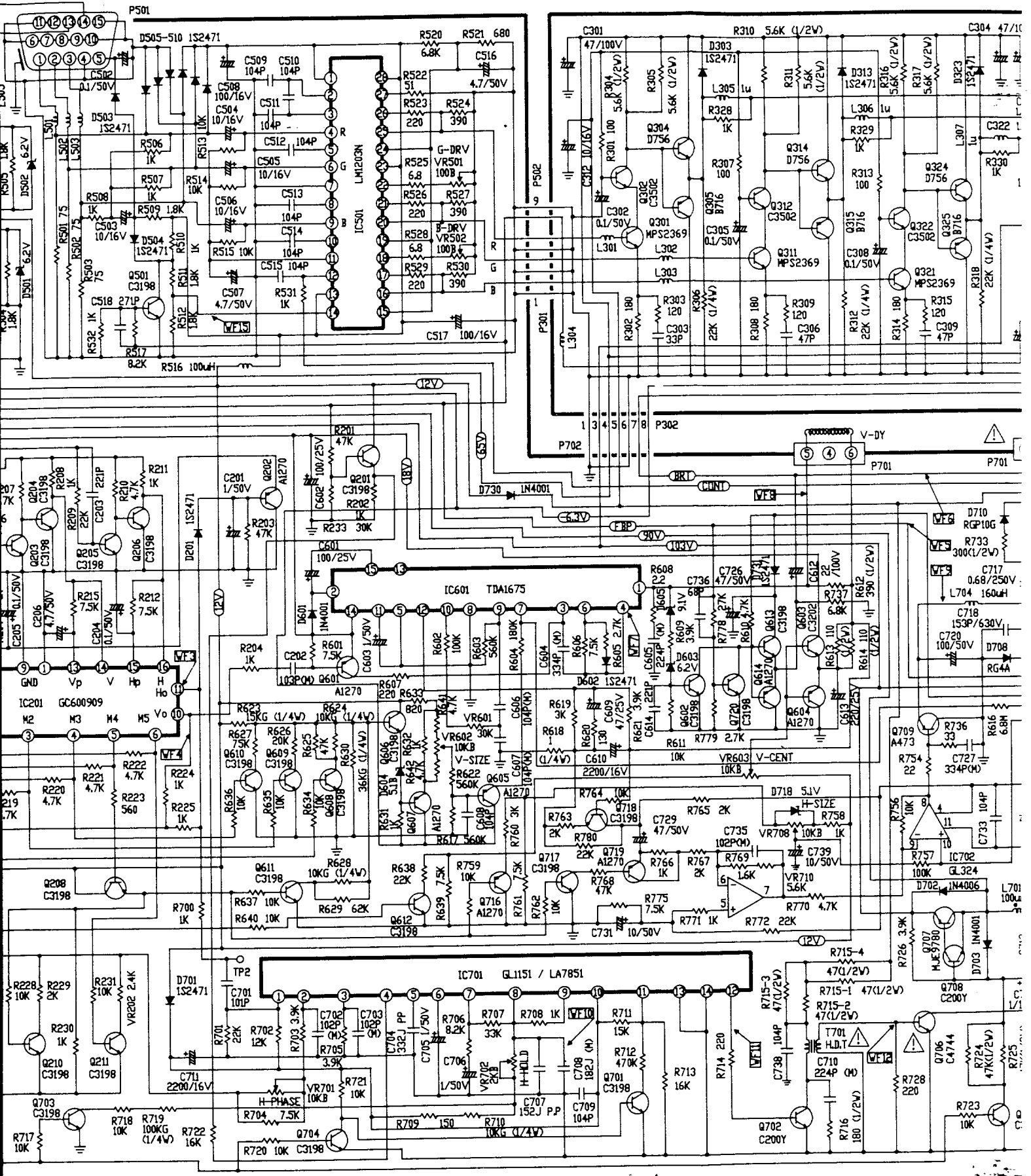


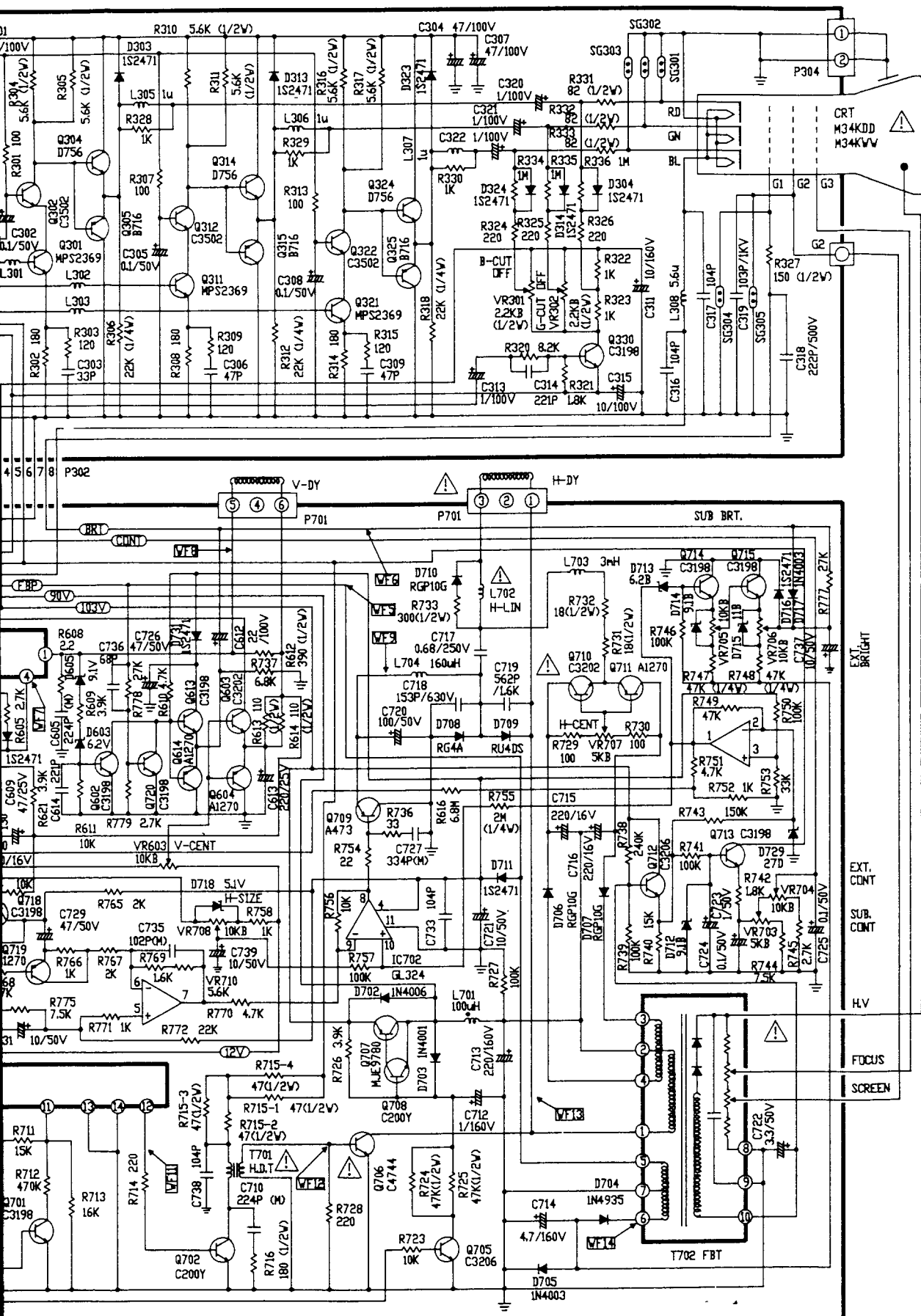
2) Only 220V~240V Zone





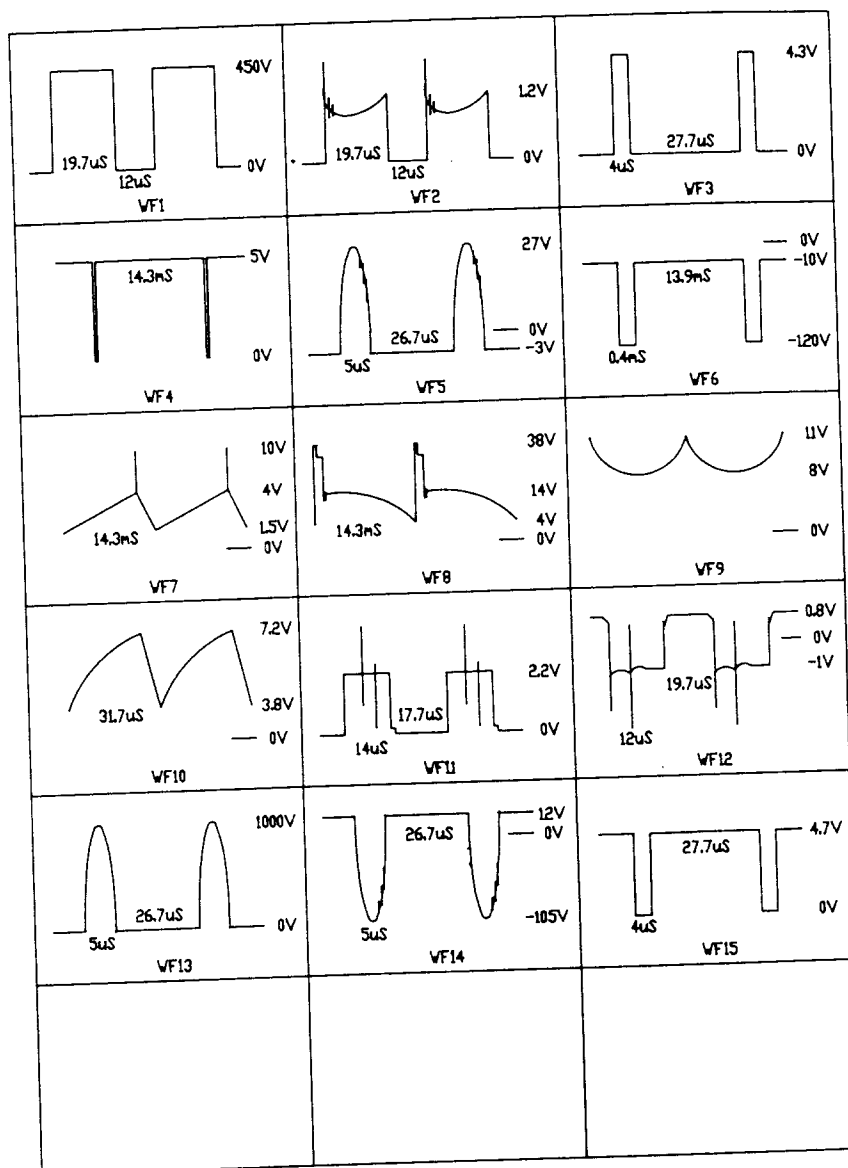
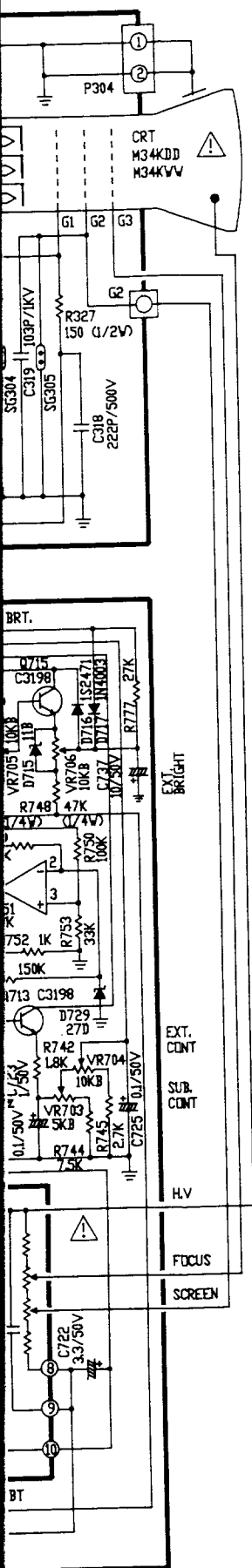
SCHEMATIC DIAGRAM (1460 SSI/01, CQ453B MPR-II 220~240V)







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



< WAVE FORM > : VGA MODE 2
FULL WHITE PATTERN

IMPORTANT SAFETY NOTICE

THE  SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC.

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FEATURES

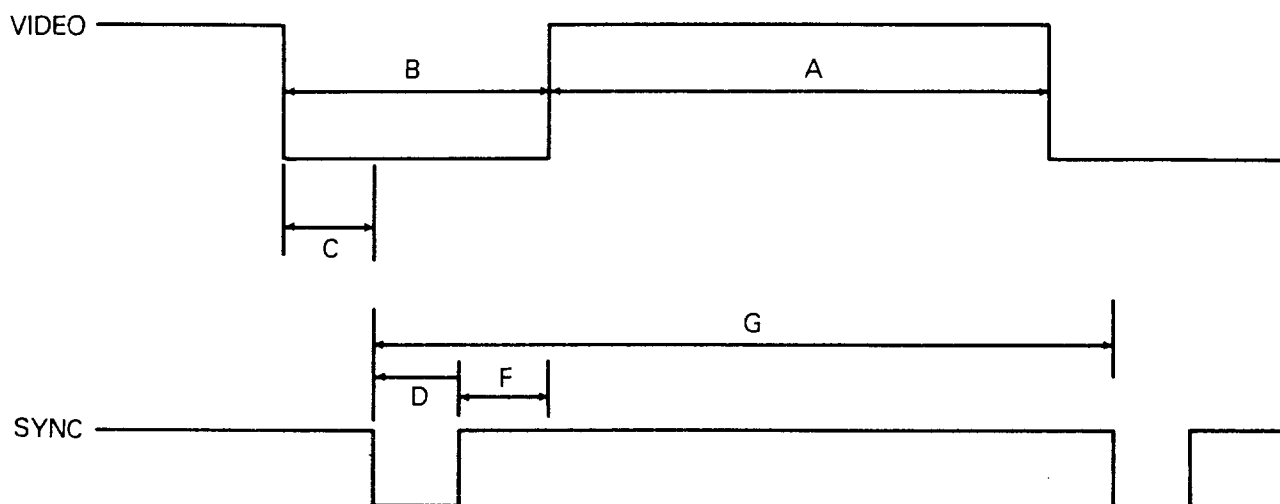
This Color Monitor is a high-quality, high-content Analog Display.

- 45 MHz Bandwidth.
- High-Resolution CDT (Color Display Tube) Display;
- Horizontal 1024 dots, vertical 768 lines

It has the following features:

- 14 inch Color Display
- 3 Different, independent to drive the a RED, a GREEN and a BLUE Line.

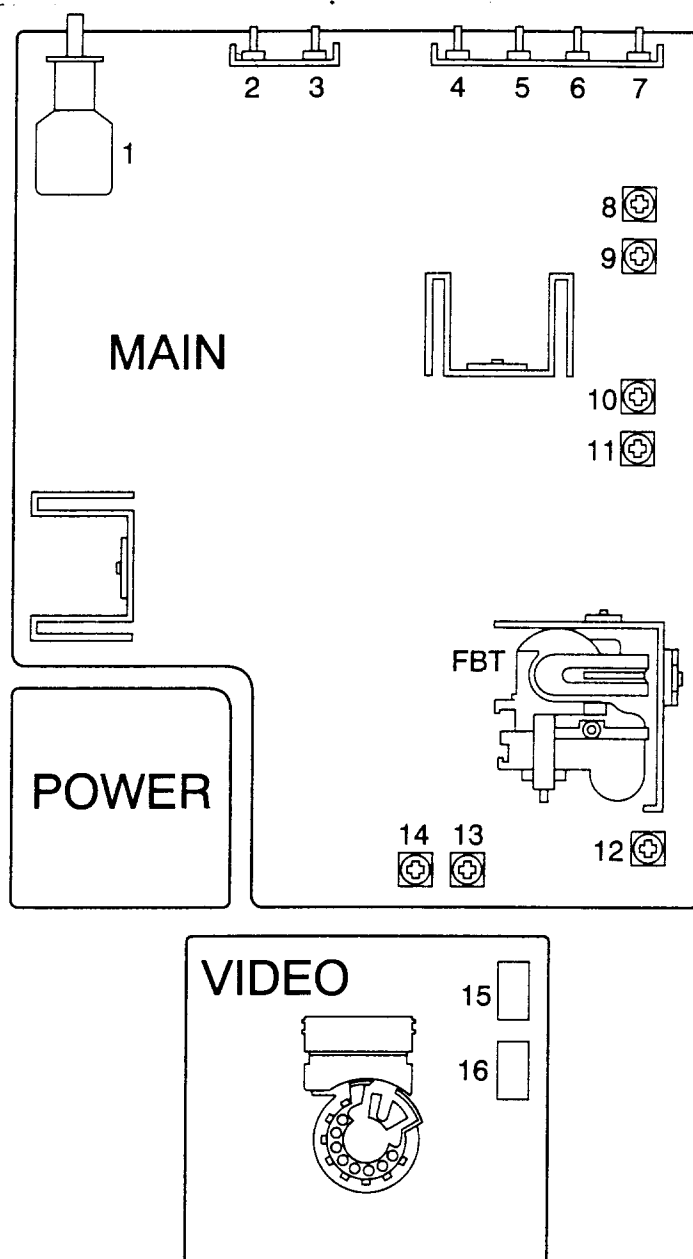
TIMING CHART



MODE		MODE 1	MODE 2	MODE 3	MODE 4	MODE 5	MARK
		VGA 1	VGA 2	VGA 3	EVGA	8514/A	
H O R I Z O N T A L	POLARITY	POSITIVE	NEGATIVE	NEGATIVE	POSITIVE	POSITIVE	
	FREQUENCY	31.47 KHz			35.16KHz	35.52KHz	
	TOTAL PERIOD	31.78 μ S			28.44 μ S	28.15 μ S	G
	DISPLAY	25.43 μ S			22.22 μ S	22.81 μ S	A
	BLANKING TIME	6.36 μ S			6.16 μ S	5.35 μ S	B
	FRONT PORCH	0.64 μ S			0.6 μ S	0.18 μ S	C
	SYNC WIDTH	3.81 μ S			2.00 μ S	3.92 μ S	D
	BACK PORCH	1.91 μ S			3.56 μ S	1.25 μ S	F
V E R T I C A L	POLARITY	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	POSITIVE	
	FREQUENCY	70 Hz	70 Hz	60 Hz	56Hz	87Hz(i)	
	TOTAL PERIOD	14.27 mS	14.27 mS	16.68 mS	17.77mS	11.53mS	G
	DISPLAY	11.12 mS	12.71 mS	15.25 mS	17.06mS	10.83mS	A
	BLANKING TIME	3.15 mS	1.554 mS	1.434 mS	0.709mS	0.701mS	B
	FRONT PORCH	1.176 mS	0.38 mS	0.32 mS	0.028mS	0.028mS	C
	SYNC WIDTH	0.064 mS	0.064 mS	0.064 mS	0.056mS	0.113mS	D
	BACK PORCH	1.91 mS	1.11 mS	1.05 mS	0.625mS	0.56mS	F

ALIGNMENT AND ADJUSTMENT

PARTS LOCATION



No.	Ref. No.	Control Function	No.	Ref. No.	Control Function
1	SW901	POWER SWITCH	9	VR710	S-PCC
2	VR706	BRIGHT	10	VR705	SUB-BRIGHT
3	VR704	CONTRAST	11	VR703	SUB-CONTRAST
4	VR708	H-SIZE	12	VR707	RASTER CENTER(H-CENTER)
5	VR701	H-POSITION(H-PHASE)	13	VR502	B-DRIVE
6	VR602	V-SIZE	14	VR501	G-DRIVE
7	VR603	V-CENTER	15	VR302	G-CUTOFF
8	VR702	H-HOLD	16	VR301	B-CUTOFF

ADJUSTMENT PROCEDURE

ORDER	ITEM	LOCATION No.	EQUIPMENT	SPEC	REMARK
1	H-HOLD	VR702	FREQUENCY COUNTER SHORT CLIP	31.45KHz \pm 100Hz	1) SET PC OR SIGNAL GENERATOR TO VGA MODE. 2) CONNECT THE TP2 PIN ON MAIN BOARD TO GND WITH SHORT CLIP. 3) CONNECT THE FREQUENCY COUNTER BETWEEN GND AND R776 LEAD WHICH IS ADJACENT TO PULSE TRANS (T901). 4) ADJUST THE FREQUENCY TO SPEC.
2	CUT-OFF	VR301, 302	COLOR ANALYZER	X = 0.282 \pm 0.005 Y = 0.304 \pm 0.005	DISPLAY BLACK PATTERN (COLOR 0,0) AT VGA MODE 3.
3	SUB-BRIGHT	VR705	LUMINANCE METER	0.6 \sim 0.7 F/L	1) DISPLAY BLACK PATTERN (COLOR 0,0) AT VGA MODE 3. 2) EXTERNAL BRIGHT CONTROL VOLUME : MAX POSITION.
4	WHITE BALANCE	VR501, 502	COLOR ANALYZER	X = 0.282 \pm 0.005 Y = 0.304 \pm 0.005	1) DISPLAY 70 x 70 mm WHITE PATTERN (COLOR 15, 0). AT THE CENTER OF SCREEN AT VGA MODE 3. 2) EXTERNAL BRIGHT, CONTRAST CONTROL VOLUME : MAX POSITION.
5	SUB-CONTRAST	VR703	LUMINANCE METER	54 F/L \pm 2 F/L	
6	FOCUS	(ON FBT)	————	————	DISPALY 80 x 25 "H" CHARACTERS AND ADJUST TO BEST CONDITION.
7	HOLD DOWN CHECK	TP1	MULTI METER DC POWER SUPPLIER	24.5V \pm 1V	1) MEASURE THE VOLTAGE OF TP1 (SHOULD BE 24.5V \pm 1V). 2) SUPPLY 30V \pm 0.5V TO TP1 WITH DC POWER SUPPLIER AND THE MONITOR SHOULD BE HOLDED DOWN IMMEDIATELY. 3) OFF THE POWER SWITCH FOR 20 SECONDS, AND THEN CONFIRM THE POWER ON.

* VGA MODE 3 : 640 DOTS x 480 LINES

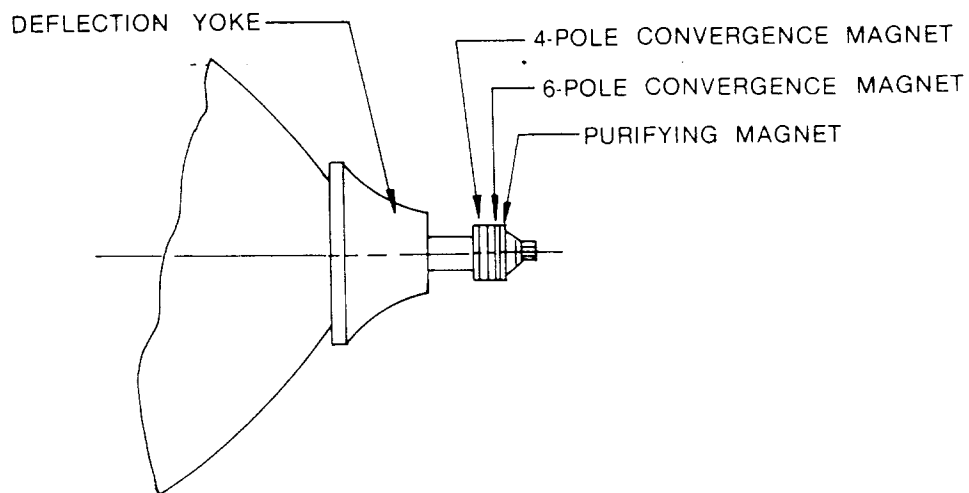
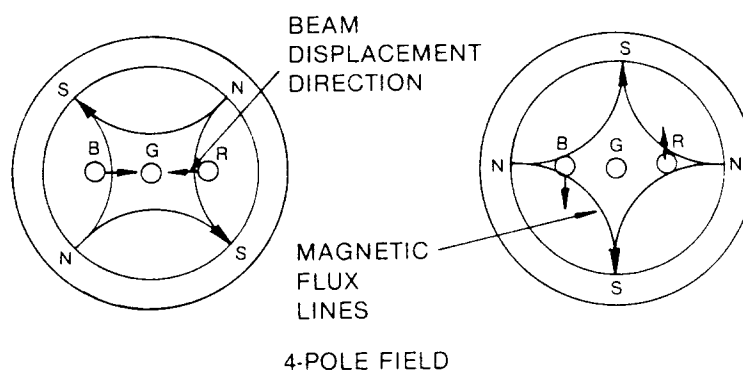


Figure 2, Relative Placement of Components



Beam Motion Produced by the six-pole and four-pole Convergence Magnets.

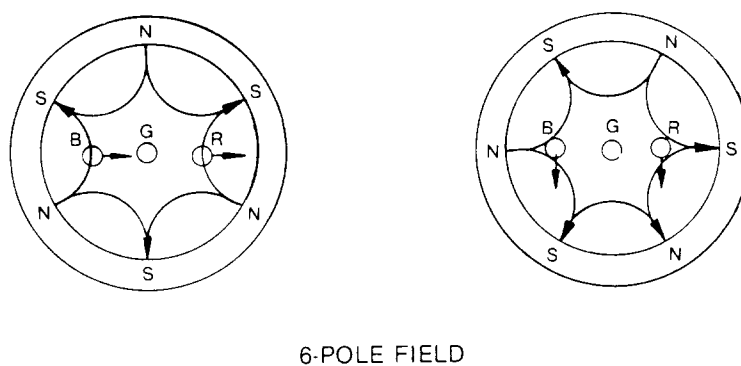


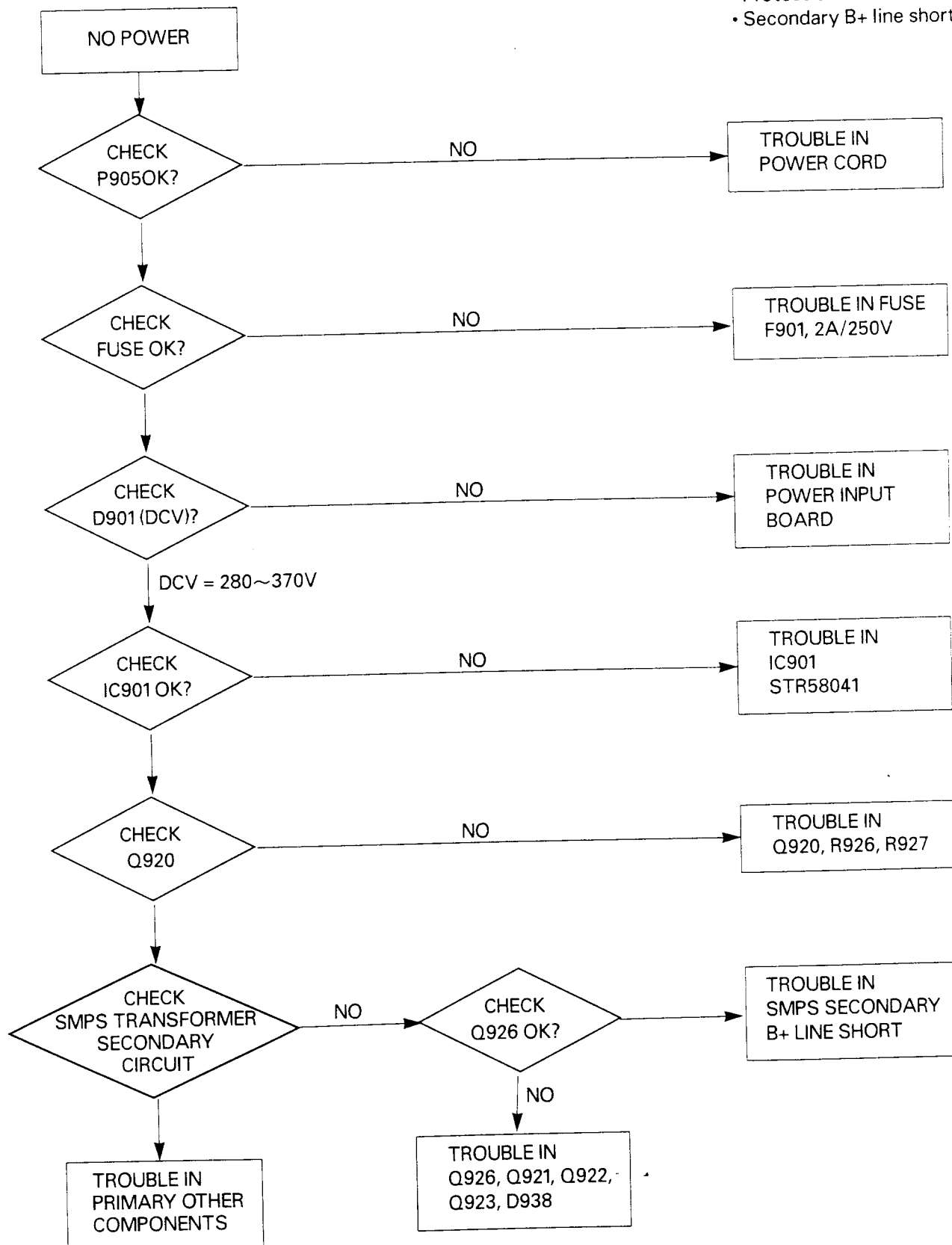
Figure 3, Static Convergence System

TROUBLE SHOOTING GUIDE

1. NO POWER

Circuits Checked:

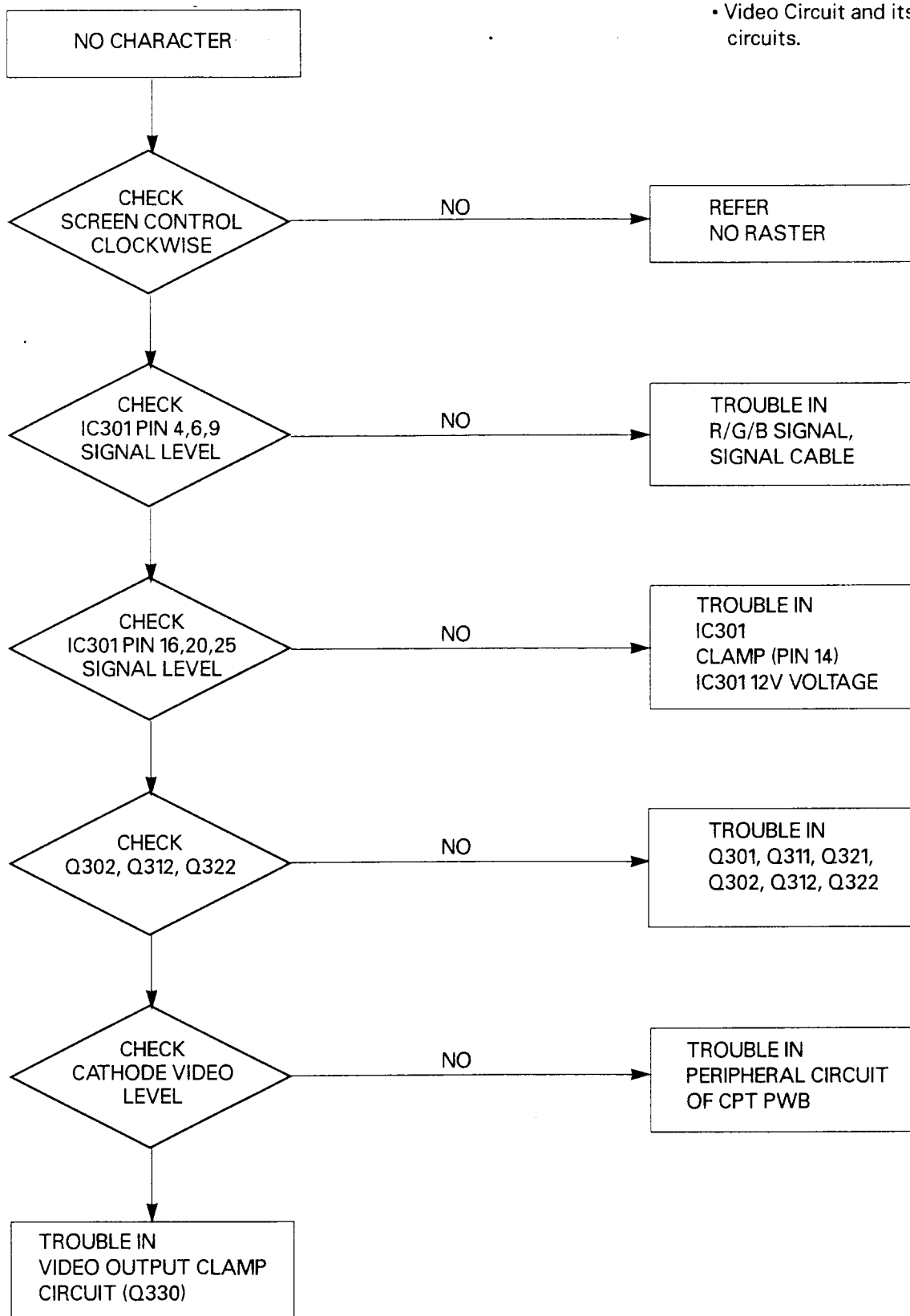
- Power input
- Protection Circuit
- Secondary B+ line short



2.NO CHARACTER

Circuits Checked:

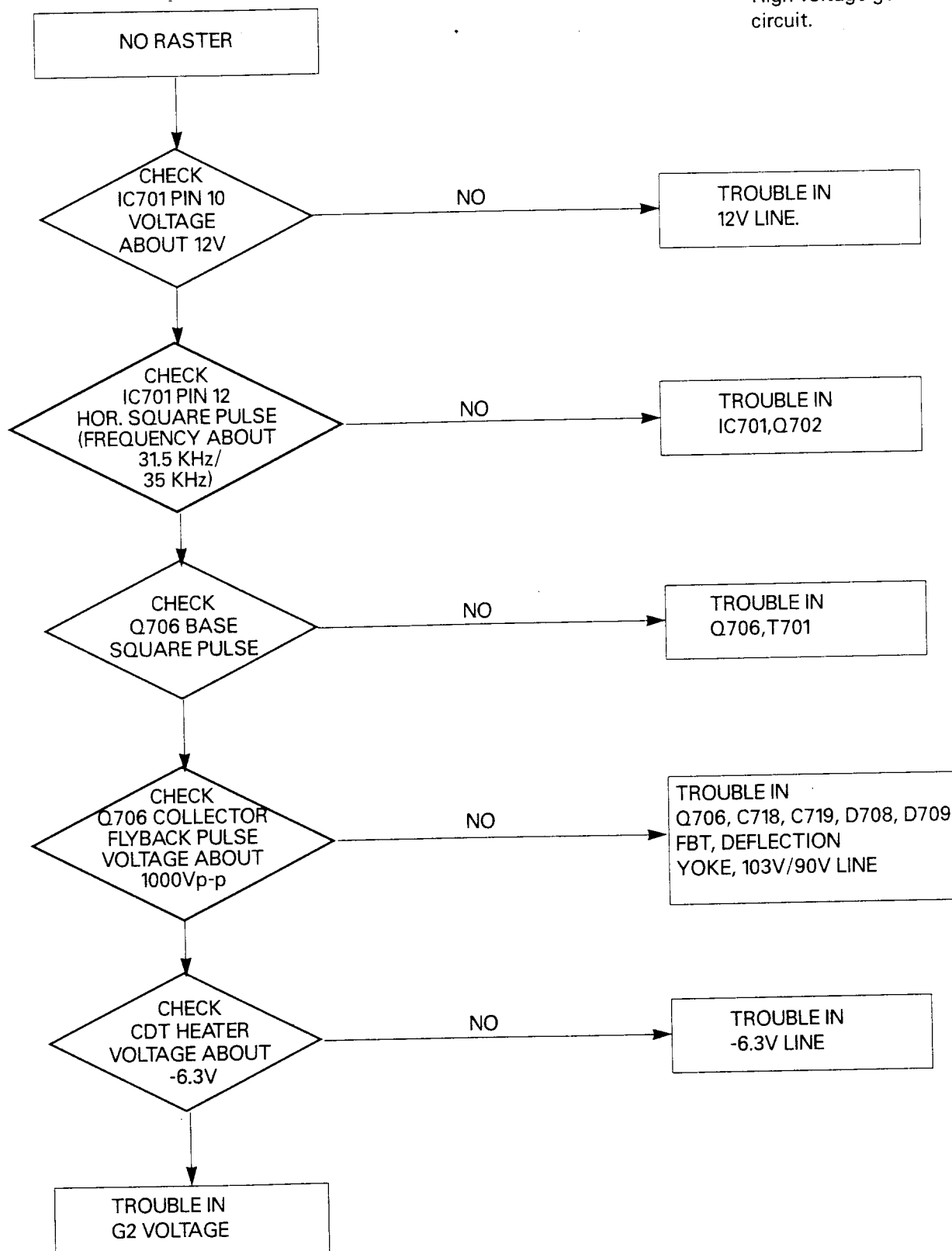
- Video Circuit and its related circuits.



3.NO RASTER

Circuits Checked:

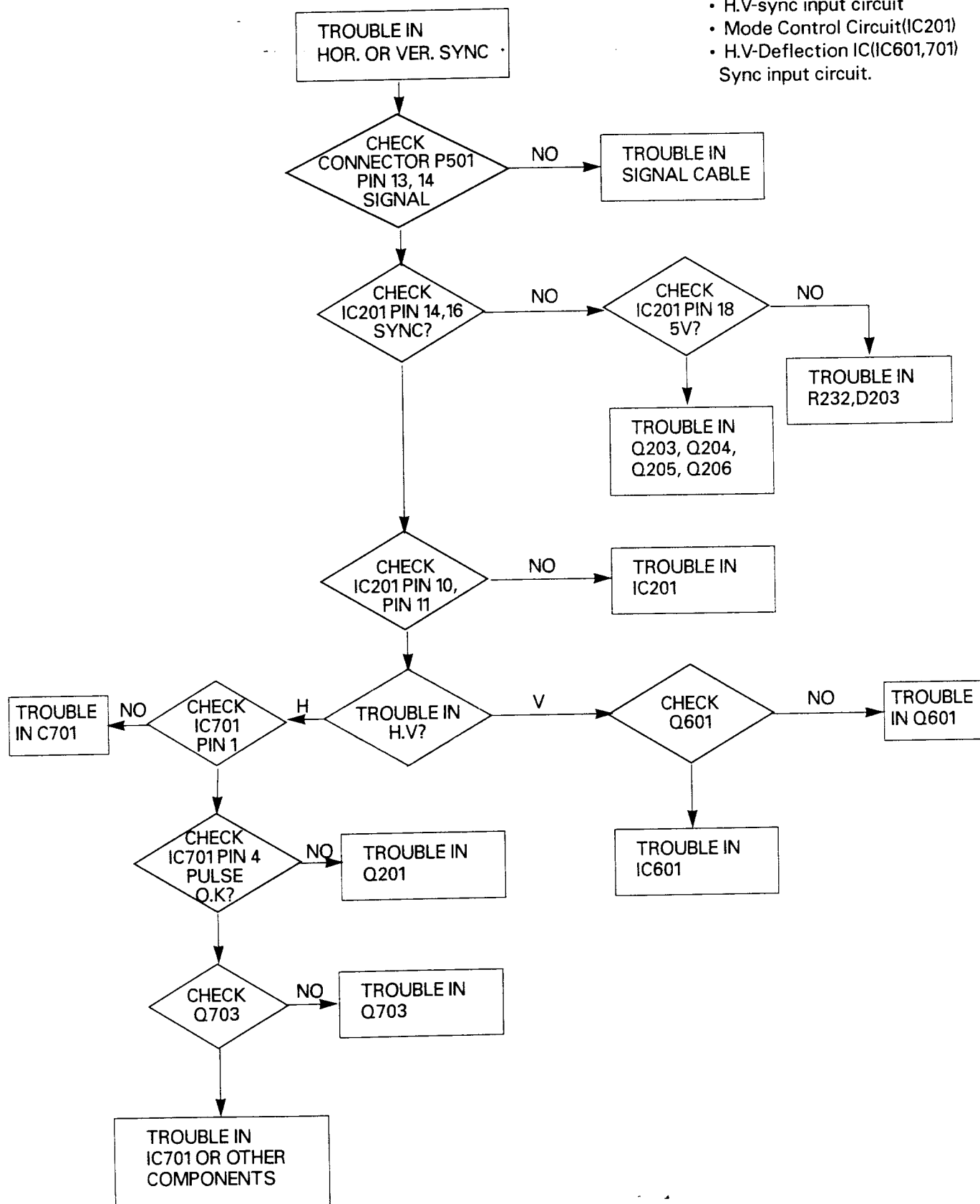
- High voltage generating circuit.

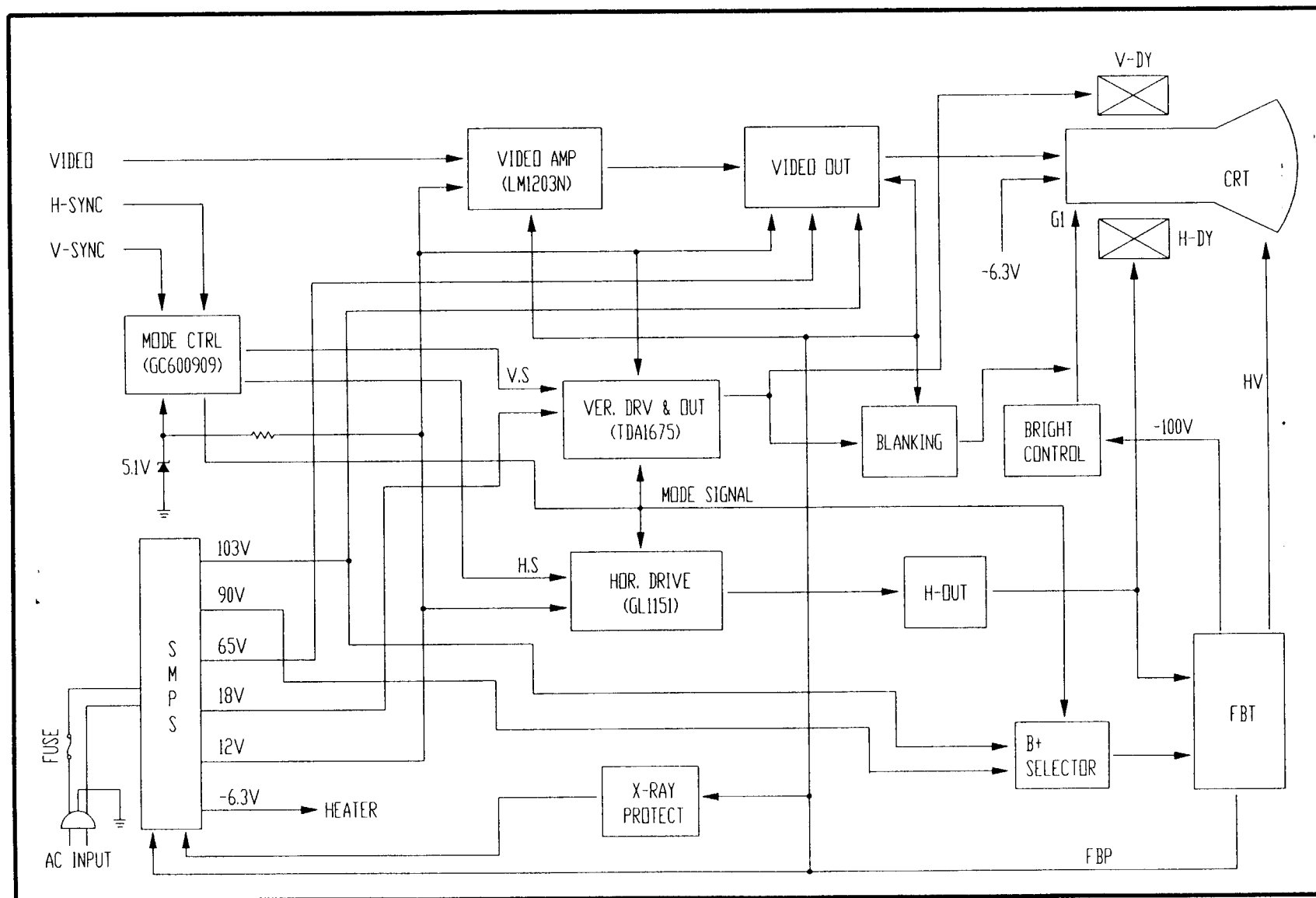


4.TROUBLE IN H.V SYNC

Circuits Checked:

- H.V-sync input circuit
- Mode Control Circuit(IC201)
- H.V-Deflection IC(IC601,701) Sync input circuit.





BLOCK DIAGRAM

DESCRIPTION OF BLOCK DIAGRAM

1. SMPS

First of all if you turn on the power switch, the line voltage is applied to the rectifier diode (D 901) and rectified voltage is applied to the primary of trans.

Depending on turn ratio of the transformer, the secondary voltage appears at the secondary.

And it is rectified by each diode. The output voltages are as follows;

DC 103V, 90V, 65V, 18V, 12V, -6.3V

2. MODE CONTROL

Display modes are detected by horizontal and vertical sync signal, and the mode signals control the vertical and horizontal processing ICs.

3. VER, DRV & OUT

The vertical sync signal with 56Hz/ 60Hz/ 70Hz/ 87Hz/ TTL level from mode control IC is applied to vertical IC.

The output signal of the IC drives vertical deflection yoke.

4. HOR. DRIVE

The horizontal sync signal with 31.5KHz/ 35.5KHz TTL level from mode control IC is applied to horizontal IC, The output signal of the IC drives the H-OUT.

5. H-OUT

Switching transistor (Q713) drives horizontal deflection yoke and FBT with diode modulator.

6. B + SELECTOR

The input voltage of FBT is changed by mode signal as follows;

31.5KHz mode : 90V DC

35.5KHz mode : 103V DC

7. X-RAY PROTECT

If the high voltage of FBT approximately reach to 29 KV in abnormal state, the SMPS stops operating.

And all circuits stop operating.

8. VERT BLANKING

This circuit is operated that vertical retrace line is invisible, output signal of vertical Blanking circuit is applied to G1 on CRT.

9. BRIGHT CONTROL

This circuit vary the brightness of the video screen by controlling the G1 voltage.

10. VIDEO AMP

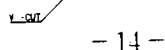
The video signal from PC is amplified, and the amplified signal is sent to VIDEO OUT.

The VIDEO AMP contains self raster function. (when the cable is disconnected with PC)

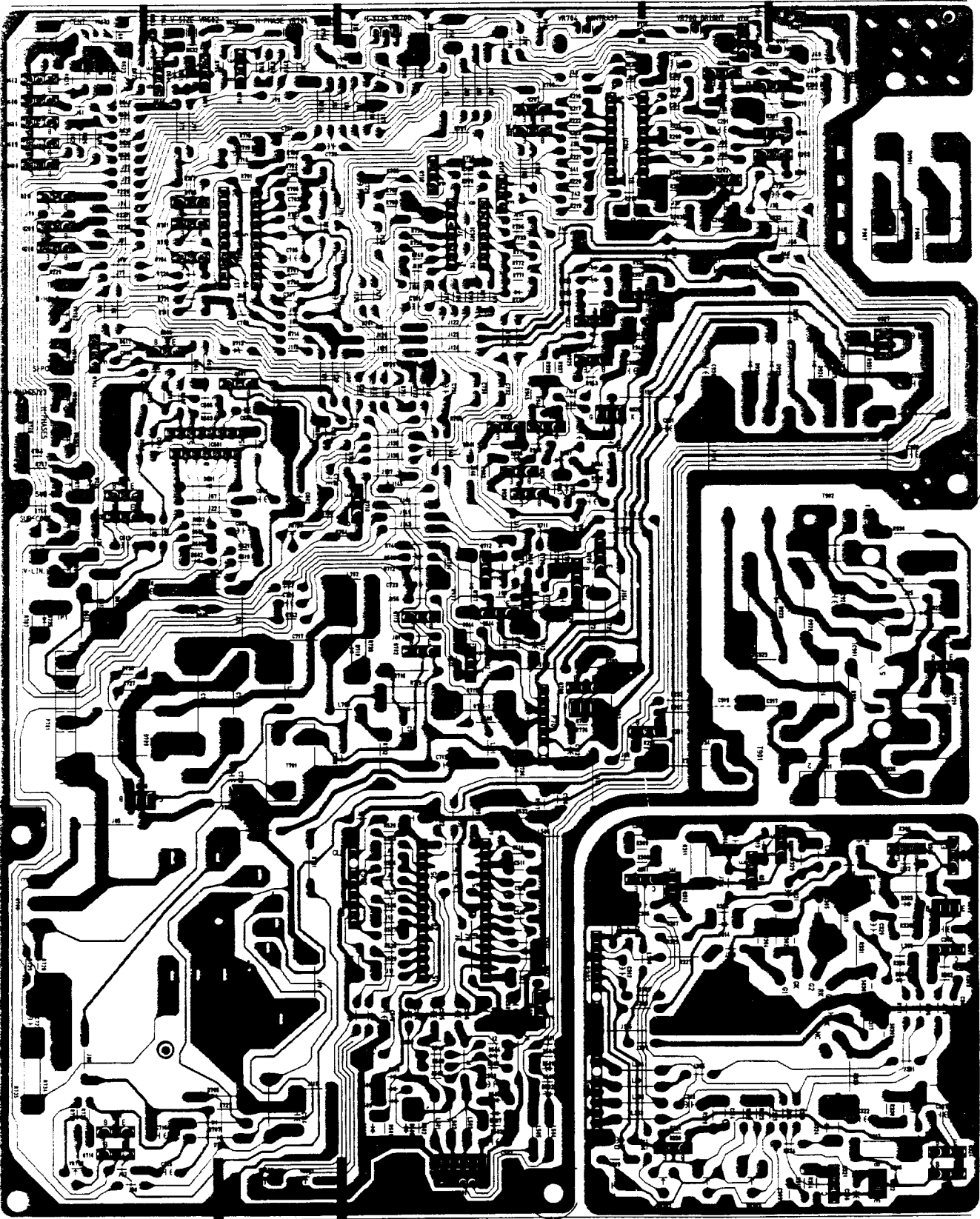
11. VIDEO OUT

The video signal from the VIDEO AMP is amplified again, and applied to each cathode on CRT.

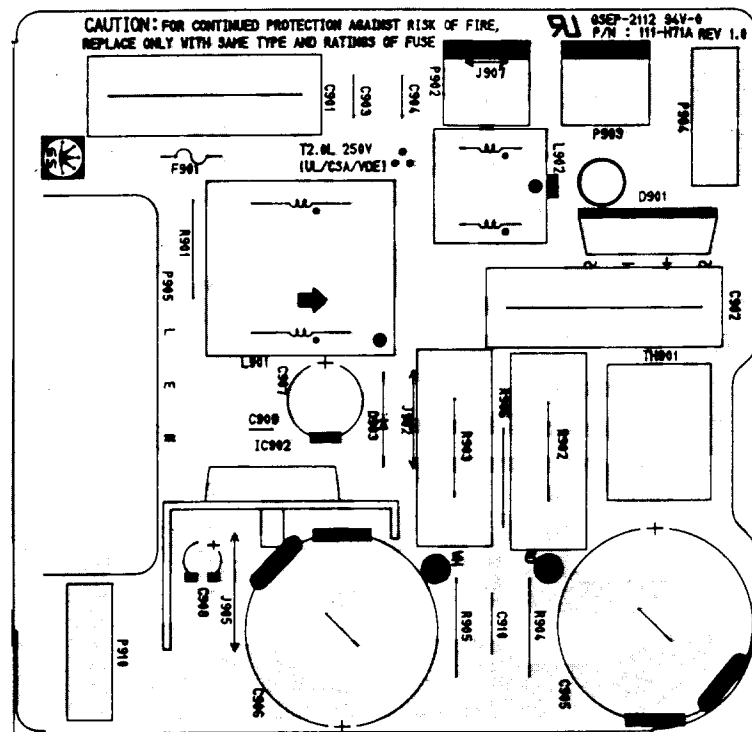
1. Main with Video Board(Top Side)



2. Main with Video Board(Bottom Side)



3. Power Input Board(TopSide)



4. Power Input Board(Bottom Side)

