



GoldStar

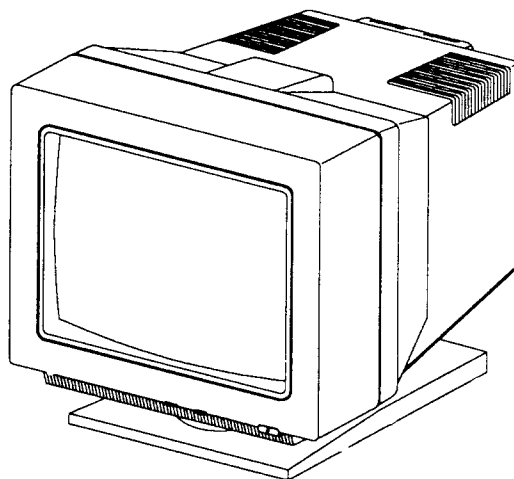
COLOR MONITOR SERVICE MANUAL

CAUTION

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

For Service Manuals
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554
email:- mauritron@dial.pipex.com

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**MODEL: CQ430(1460/1455 PLUS)
CQ432
(CA-8 CHASSIS)**



GoldStar

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SPECIFICATIONS

1. PICTURE TUBE

Size : 14 inch
 Gun : In-Line
 Deflection Angle: 90°
 Neck Diameter : 29.1 mm
 Phosphor: P22
 Dot Pitch: 0.28 mm

2. SIGNAL

- 2-1 SYNC. INPUT SIGNAL:
 H.V. Separate TTL Level Posi./Nega.
- 2-2 VIDEO INPUT SIGNAL:
 RGB ANALOG (0~0.7 Vpp)
- 2-3 SIGNAL CONNECTOR:
 15 PIN "D" Type
- 2-4 SCANNING FREQUENCY
- Horizontal: 31.5 KHz/35.2 KHz/35.52 KHz.
 - Vertical: 56 Hz/60 Hz/70 Hz/87 Hz (Interlaced)

3. POWER SUPPLY (Factory Preset)

- 3-1 Power Rating
- AC 98-132V 60Hz, 1.2A Max. (US)
 AC 196-264V 50Hz, 0.8A Max
 (Europe/Australian)

4. DISPLAY AREA

- 4-1 Active Video Area:
 VGA, EVGA: 240mm x 180mm
 8514/A: 250mm x 187mm
- 4-2 Display Color: Full Colors
- 4-3 Display Resolution: 1024 dots x 768 Lines.
- 4-4 Video Bandwidth: 36 MHz.

5. EXTERNAL CONTROL

- 5-1 Front: Power ON/OFF
 Switch,
 Contrast, Brightness
 (See Fig. 1)
- 5-2 Rear: V-Size
 H-Size
 V-Center
 H-Position
 (See Fig. 1)

6. ENVIRONMENT

- 6-1 Operating 10 to 41°C
 Temperature: (Ambient)
- 6-2 Relative Humidity: 8 to 80%
 (noncondensing)
- 6-3 Altitude: 10,000ft

7. DIMENSIONS

	CQ430	CQ432
Width	356mm(14.0 in)	356mm(14.0 in)
Depth	375mm(14.7 in)	375mm(14.7 in)
Height	308mm(12.1 in)	309mm(12.2 in)
H(With T/S)	358mm(14.1 in)	354mm(14.0 in)

8. WEIGHT (W/Tilt Swivel)

- Net Weight: 11.5 Kg (25.3 lbs.)
 Gross Weight: 13 Kg (28.6 lbs.)

PREFACE

SAFETY PRECAUTIONS

SAFETY-RELATED COMPONENT WARNING!

There are special components used in GoldStar color monitor which are important for safety. These parts are marked ($\triangle$) on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with the manufacture's specified parts to prevent X-RADIATION, shock, fire or other hazards. Do not modify the original design without obtaining written permission from GoldStar or this will void the original parts and labor guarantee.

CAUTION: No modification of any circuit should be attempted.

Service work should be performed only after you are thoroughly familiar with all of the following safety checks and servicing guidelines.

SAFETY CHECK

Care should be taken while servicing this color monitor because of the high voltage used in the deflection circuits. These voltages are exposed in such areas as the associated flyback and yoke circuits.

FIRE & SHOCK HAZARD

- An isolation transformer must be inserted between the color monitor and AC power line before servicing the chassis.
- In servicing, attention must be paid to the original lead dress especially in the high voltage circuit. If a short circuit is found, replace all parts which have been overheated as a result of the short circuit.
- All the protective devices must be reinstalled per original design.
- Soldering must be inspected for the cold solder joints, frayed leads, damaged insulation, solder splashes or the sharp points. Be sure to remove all foreign materials.

IMPLOSION PROTECTION

All used display tubes are equipped with an integral implosion protection system, but care should be taken to avoid damage and scratching during installation. Use only same type display tubes.

X-RADIATION

The only potential source of X-Radiation is the picture tube. However, when the high voltage circuitry is operating properly there is no possibility of an X-Radiation problem. The basic precaution which must be exercised is to keep the high voltage at the factory-recommended level: the nominal high voltage is 25KV and must not exceed 30KV at zero beam current at rated voltage. The following steps describe how to measure the high voltage and how to prevent X-radiation.

Note: It is important to use an accurate high voltage meter calibrated periodically.

- To measure the high voltage, use a high impedance high voltage meter, Connect (–) to chassis and (+) to the CRT anode button.
- Turn the brightness control fully clockwise.
- Measure the high Voltage. The high voltage meter should indicate at the factory-recommended level.
- If the upper meter indication exceeds the maximum level, immediate service is required to prevent the possibility of premature component failure.
- To prevent X-Radiation possibility, it is essential to use the specified picture tube.

CAUTION:

Please use only plastic screwdriver for shock protection during service operation.

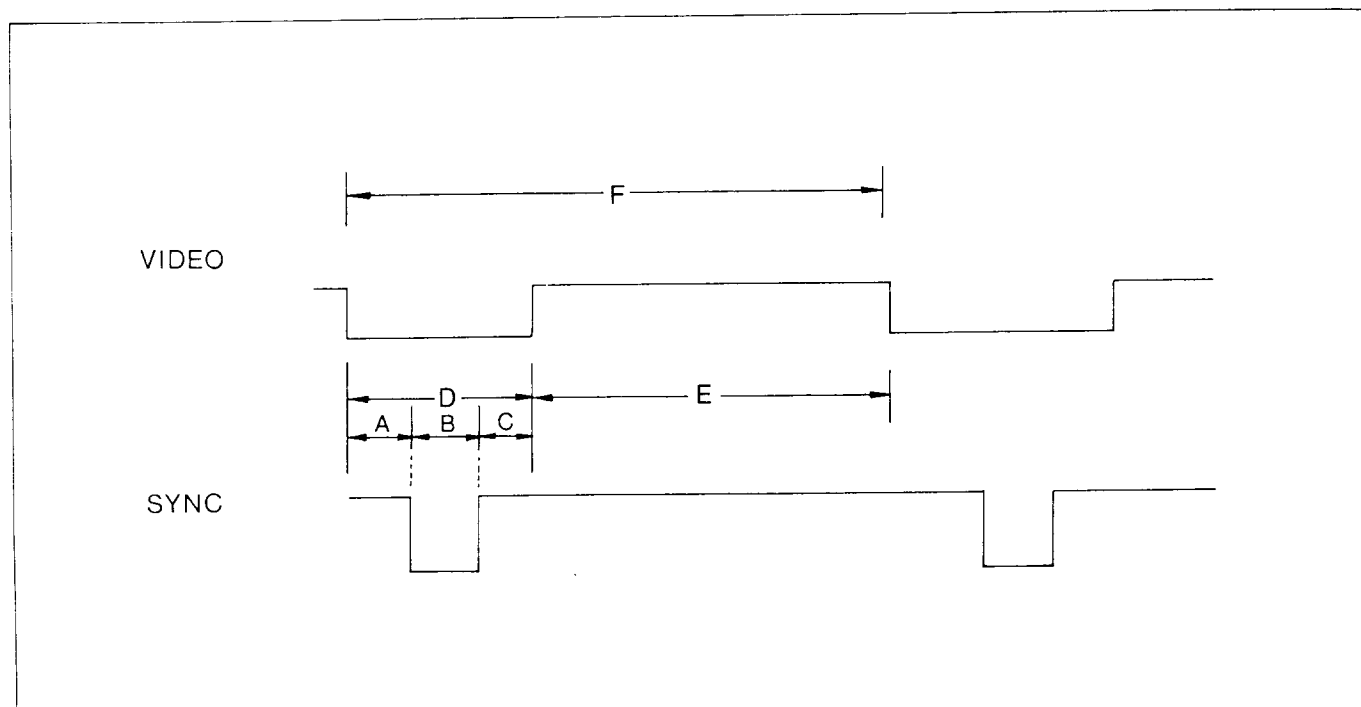
FEATURES

The CQ430 (1460/1455 PLUS), CQ432 Color Monitor is a high-quality, high-content Analog Display. It has the following features:

- 14 inch Color Display
 - 3 Different, independent lines to drive the display
 - a RED, a GREEN and a BLUE Line.
 - 36 MHz Bandwidth.
- High-Resolution CDT (Color Display Tube)
Displays; Horizontal 1024 dots, vertical 768 lines without blurring the characters.

- Analog-Compatibility at a H-frequency of 31.5 KHz/35.2 KHz/35.52 KHz.
- Customer Diagnostic Self-Test patterns.

TIMING CHART



MODE NO.	REFERENCE SIGNAL (IBM PS/II)	SYNC SIG- NAL	SYNC POLAR- ITY	UNIT	A	B	C	D	E	F	REMARK
1	FH: 31.5 KHz/350 LINES	H V	+ -	uS mS	0.64 1.18	3.81 0.06	1.91 1.91	6.36 3.15	25.42 11.12	31.78 14.27	non- interlaced
2	FH: 31.5 KHz/400 LINES	H V	- +	uS mS	0.64 0.38	3.81 0.06	1.91 1.11	6.36 1.55	25.42 12.71	31.78 14.27	non- interlaced
3	FH: 31.5 KHz/480 LINES	H V	- -	uS mS	0.64 0.32	3.81 0.06	1.91 1.05	6.36 1.43	25.42 15.25	31.78 16.68	non- interlaced
4	FH: 35.5 KHz/768 LINES	H V	+ +	uS mS	0.18 0.014	3.92 0.113	1.25 0.563	5.35 0.69	22.80 10.81	28.15 11.50	interlaced
5	FH: 35.2 KHz/600 LINES	H V	+/- +/-	uS mS	0.67 0.03	2.00 0.06	3.56 0.63	6.23 0.72	22.22 17.06	28.45 17.78	non- interlaced

CONTROLS LOCATION

The CQ430(1460/1455 PLUS), CQ432 Color Monitor uses a 15-pin "D" type connector for Analog input. Figure 1 shows the monitor controls on the front and rear panels.

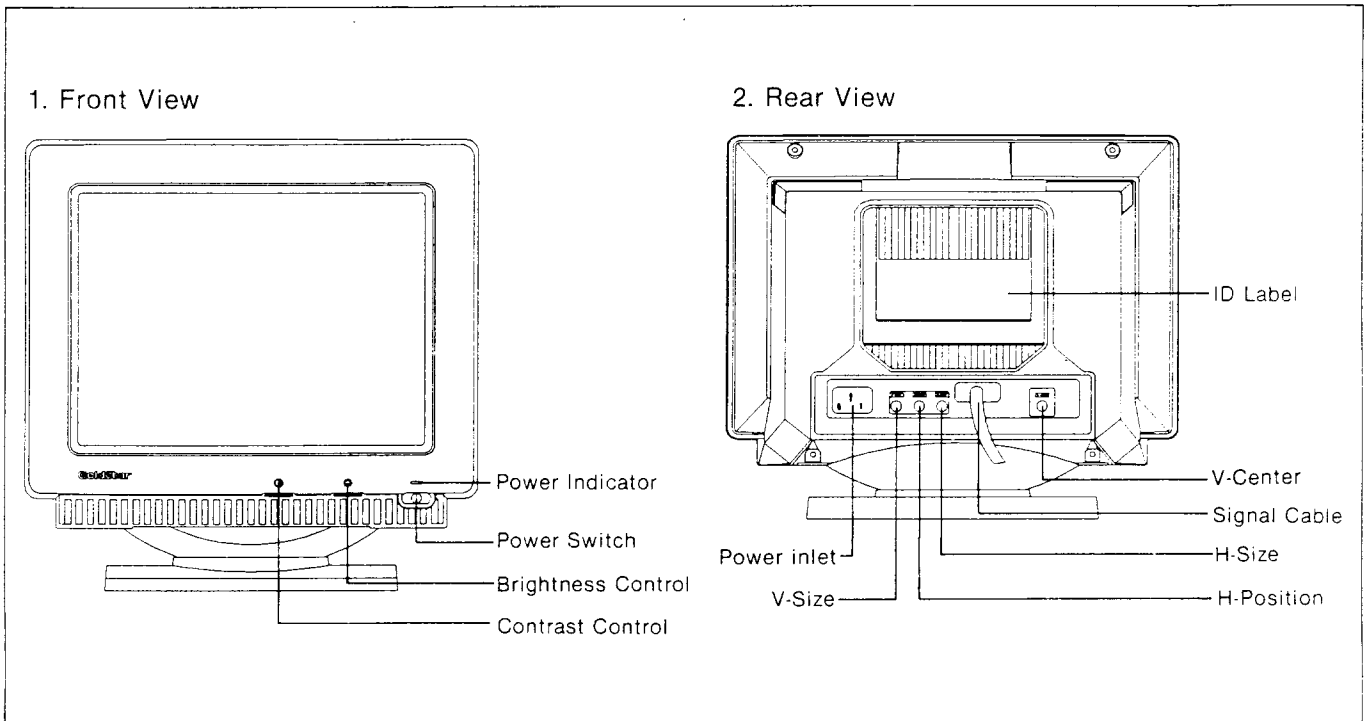


Figure 1, Monitor Controls

- **POWER (PUSH-ON)**
The power switch is push button type.
Push this button, the power is ON.
Push this button again, the power is OFF.
- **CONTRAST (VR709)**
Slide this knob to right side to increase contrast.
- **BRIGHTNESS (VR710)**
Slide this knob to right side to increase brightness.
- **V-SIZE (VR606)**
Turn this control to adjust the vertical size of the display.
- **H-SIZE (VR701)**
Turn this control to adjust the horizontal size of the display.
- **V-CENTER (VR610)**
Turn this control to adjust the vertical position of the display.
- **H-POSITION (VR708)**
Turn this control to adjust the image center of the display.

CIRCUIT DESCRIPTION

POWER SUPPLY

The power supply is a SMPS (Switching Mode Power Supply) that consists of switching IC(IC901), SMPS transformer (T902) pulse transformer (T901), over current protection transistor (Q901) and the associated components. The primary winding of the SMPS transformer is applied the pulse by operating IC901. Therefore, rectified DC output voltage is obtained by the secondary winding of SMPS transformer T902.

POWER SUPPLY DESCRIPTIONS

This SMPS (Switching Mode Power Supply) using STR53041(STR58041: 220V) obtains rectified DC 100V, 88V, 67V, 18V, 14V, 6V from AC120V, 60Hz (USA Version)/AC 220V, 50Hz (Europe version).

Power is supplied in the following procedure:

- 1) AC120V/AC220V supplied from the AC socket is rectified by D901.
- 2) Rectified voltage is supplied to the T902.
The primarily rectified voltage by D901 is supplied to PIN 7 of T902 through PIN 5 of T902.
- 3) A switching pulse is applied at PIN 2 of the IC901.
- 4) This oscillation causes IC901 to switched, and at the secondary terminal of T902, a voltage (proportional to the turn ratio) is generated.

HORIZONTAL AFC AND OSCILLATION LIMITTER

The AFC circuit consists of phase detection circuit of IC701 and the associated components. The oscillation limit circuit is necessary to prevent the pulse from excessive high voltage. This circuit is located in IC702 and controls the oscillator to maintain the control signal in its correct frequency and in phase with the horizontal sync signal.

HORIZONTAL DRIVE CIRCUIT

To obtain horizontal drive pulses from IC702 PIN 12, the horizontal osciallator must be working.

Horizontal drive pulses from IC702 PIN 12 are applied to horizontal drive transformer and drive transistor Q702.

The B + for T701 is supplied from the 14V line.

HORIZONTAL DEFLECTION OUTPUT

Horizontal drive pulses from IC702 PIN 12 are coupled through T701 to the base of horizontal output Q707. Transistor Q702 is biased on when the beam is at about mid-screen.

The charge stored in C722 causes current to flow through the horizontal yoke winding and Q707 to ground. When the beam reaches the right side of the screen, Q702 is turned off, and the current in the yoke is directed into C721 and C723.

At the same time current flows into C721 and C723 from the regulated B + via the horizontal choke coil (L702) winding.

Due to resonance, the current then reverses and flows back through the horizontal yoke winding into C722 and C719.

X-RAY PROTECTION CIRCUIT

The X-RAY protection circuit consists of D701, D702, R718, R719, R720, VR717 and the associated component that connected to PIN 13 of IC702. A voltage from the FBT PIN 5 is divided by R720 and VR717. Under normal operating conditions, the resultant voltage (TP1) maintains the specified value.

If a malfunction causes exeessive high voltage, the voltage of FBT PIN 5 is increasing and TP1 voltage is increasing. As a result, D701 is conducted when the cathode voltage of D701 is arrived as much as Zener voltage. A voltage increase at IC702 PIN 13 makes the X-RAY protection circuit conduct, and the horizontal oscillation operation no longer functional. The circuit latches as above, and it is necessary for the circuit to turn the power off for at least 30 seconds to function again.

VERTICAL OSCILLATION/DRIVE CIRCUIT

The time constant circuit that determines the vertical osciallation frequency consists of C604, R606 and R607. (IC701 PIN 18).

The vertical ramp generator output circuit (IC603 PIN 6) is driven by the vertical sync. negative polarity pulse from the IC702 PIN 16.

The negative feedback waveform at IC603 PIN 7 driven from the vertical deflection output is applied to the other input of the differential amplifier.

ADJUSTMENT

GENERAL INFORMATION

All adjustments are thoroughly checked and corrected when the monitor leaves the factory.

Therefore the monitor should operate normally and produce proper color and pictures upon installation. However, several minor adjustments may be required depending on the particular location in which the monitor is to operate. This monitor is shipped completely in carton. Carefully draw out the monitor from the carton and remove all packing materials.

Check and adjust all the customer controls such as Brightness and Contrast to obtain a normal picture.

AUTOMATIC DEGAUSSING

A degaussing coil mounted around the picture tube so that external degaussing is normally unnecessary after moving the monitor. The monitor should be properly degaussed upon installation. The degaussing coil switched on.

If the set is moved or faced in a different direction, the power switch must be switched off for at least 10 minutes in order that the automatic degaussing circuit operates properly.

Should the chassis or parts of the cabinet become magnetized to cause poor color purity, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube, the sides and front of the monitor, and slowly withdraw the coil to a distance of about 2 meters before disconnecting it from the AC source. If color shading still persists, perform the convergence adjustment procedures, as mentioned later.

HORIZONTAL HOLD ADJUSTMENT

1. Disconnect the signal cable from signal source.
2. Connect the ground terminal of frequency counter to chassis ground and the other terminal to red covered wire of DY connector.
3. Adjust VR716 (H.HOLD), so that the horizontal frequency is 35.34 ± 0.05 kHz.

H.RASTER CENTER ADJUSTMENT

1. Disconnect the signal cable from the signal source.
2. Adjust VR714, so that the raster position is horizontal center.

VERTICAL LINEARITY ADJUSTMENT

1. Display the MODE 3 crosshatch pattern on the monitor.
2. Adjust VR611, so that the vertical linearity should be best condition.

VERTICAL SIZE ADJUSTMENT

1. Set the V.Size control (VR606) to center (locked position).
2. Display the crosshatch pattern at VGA mode 1.
3. Adjust Sub V.Size control (VR601), so that the vertical size of the image is 180 ± 2 mm.
4. Display the crosshatch pattern at VGA mode 2.
5. Adjust Sub V.Size control (VR602), so that the vertical size of the image is 180 ± 2 mm.
6. Display the crosshatch pattern at VGA mode 3.
7. Adjust Sub V.Size control (VR603), so that the vertical size of the image is 180 ± 2 mm.
8. Display the crosshatch pattern at EVGA mode.
9. Adjust Sub V.Size control (VR605), so that the vertical size of the image is 180 ± 2 mm.
10. Display the crosshatch pattern at 8514/A MODE.
11. Adjust Sub V.Size control (VR604), so that the vertical size of the image is 187 ± 2 mm.

SIDE PINCUSHION ADJUSTMENT

1. Display the crosshatch pattern at VGA mode 3.
2. Adjust VR711 and VR712, so as to minimize the side pincushion distortion.

H.POSITION ADJUSTMENT

1. Set the H.Position control (VR708) to center (locked position).
2. Display the crosshatch pattern at VGA mode 3.
3. Adjust Sub H.Phase VR.(VR705), so that the image is horizontal center position.
4. Display the crosshatch pattern at EVGA mode.
5. Adjust Sub H.Phase VR.(VR707), so that the image is horizontal center position.
6. Display the crosshatch pattern at 8514/A mode.
7. Adjust Sub H.Phase VR.(VR706), so that the image is horizontal center position.

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H.SIZE ADJUSTMENT

1. Set the H.Size control (VR701) to center (locked position).
2. Display the crosshatch pattern at VGA mode 3.
3. Adjust Sub H.Size VR.(VR702), so that the horizontal size is 240 ± 2 mm.
4. Display the crosshatch pattern at EVGA mode.
5. Adjust Sub H.Size VR.(VR704), so that the horizontal size is 240 ± 2 mm.
6. Display the crosshatch pattern at 8514/A mode.
7. Adjust Sub H.Size VR.(VR703), so that the horizontal size is 250 ± 2 mm.

WHITE BALANCE ADJUSTMENT

1. THE NECESSARY INSTRUMENT

- White Balance meter.
- External Degaussing Coil (Degauss the monitor before adjustment).
- Photometer

2. PREPARING ADJUSTMENT

- Connect the signal cable with PC, and display the Color 0.0 pattern on the monitor.
- Minimize the screen control of FBT.
- Set the Sub Bright (VR713) and the Sub Contrast (VR715) to mechanical center.
- Set the Contrast VR to the MAX and Bright VR to the MAX.
- Set the G drive (VR301) and the B drive (VR302) to mechanical center.
- Turn the R cut-off VR. (VR305), B cut-off VR. (VR303) to counter-clockwise extremely and set the G cut-off VR.(VR304) to mechanical center (about 90°).

3. ADJUSTMENT (1)

- Turn the screen control (G2) to clockwise slowly until the brightness of raster is $1 \sim 1.2$ FL.
- Let the G cut-off VR.(VR304) be the reference, and adjust the R and the B cut-off VR.(VR305, VR303) so as to get $X = 0.282$, $Y = 0.304$.

4. ADJUSTMENT (2)

- 1) Set Brightness VR to center and contrast VR to maximum.
- 2) Display Full White Pattern (Color 7.0) on the screen.
- 3) Turn the B drive (VR302) so that $X = 0.282$ and the G drive (VR301) so that $Y = 0.304$.
- 4) Repeat 3) until $X = 0.282 \pm 0.02$, $Y = 0.304 \pm 0.022$.
- 5) Set Brightness VR to MIN. and adjust contrast VR until luminance is 5 FL at Full White Pattern (Color 15,0).
- 6) Confirm $X = 0.282 \pm 0.02$, $Y = 0.304 \pm 0.022$ unless the color co-ordinate is not in spec, readjust G, B cut-off VR so that the screen is white.
- 7) Repeat 3),4),5),6) so that the screen should be white.

BRIGHTNESS ADJUSTMENT

1. Maximize the Contrast VR.
2. Display the cut-off level (Color 0.0).
3. Adjust the Sub-Bright VR.(VR713) until the raster disappears when the Bright VR is at center.
4. Confirm that whether back raster appears or not when the Bright VR is at Max.

CONTRAST ADJUSTMENT

1. Set the Bright VR at center and Contrast VR at Max.
2. Display the Full White Pattern (Color 7,0), of which the size is 70×70 , on the screen.
3. At the center of the screen, adjust the Sub Contrast VR.(VR715), so that the luminance should be $X \pm 2$ FL.

Note: The value of X is dependent on the type of CDT.

Medium short: 25

Medium : 16

FOCUS ADJUSTMENT

1. Set the Bright VR and Contrast VR to Max.
2. Display "H" character in full screen (Color 7,0)
3. Adjust Focus VR of FBT, so that the focus should be best condition.

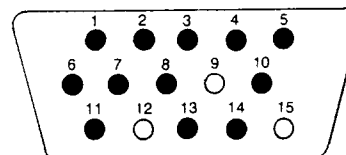
CONFIRMING SELF-TEST

1. Set the Bright VR and the contrast VR at Max.
2. Remove the signal connector from the PC.
3. Confirm that the brightness of raster is more than 5 FL.

FAIL SAFETY ADJUSTMENT

1. Set the Bright VR and Contrast VR at MIN.
2. Display the crosshatch pattern at VGA mode 3.
3. Confirm that B+ of FBT (pin 2) is $88 \pm 1V$.
4. Adjust the HOLD-DOWN VR.(VR717) so that the TP1 voltage should be $10.5 \pm 0.05 V$.
5. Fasten the VR717 with glue or as such so as not to be changed after adjustment is done.

15 Pin Connector (Male) to the Computer



- | | | |
|---------------|-----------------|-------------------|
| 1. Red | 6. Red GND | 11. ID 0 (GND) |
| 2. Green | 7. Green GND | 12. ID 1 (No Pin) |
| 3. Blue | 8. Blue GND | 13. H-Sync |
| 4. ID 2 (GND) | 9. No Pin | 14. V-Sync |
| 5. Self Test | 10. Digital GND | 15. No Pin |

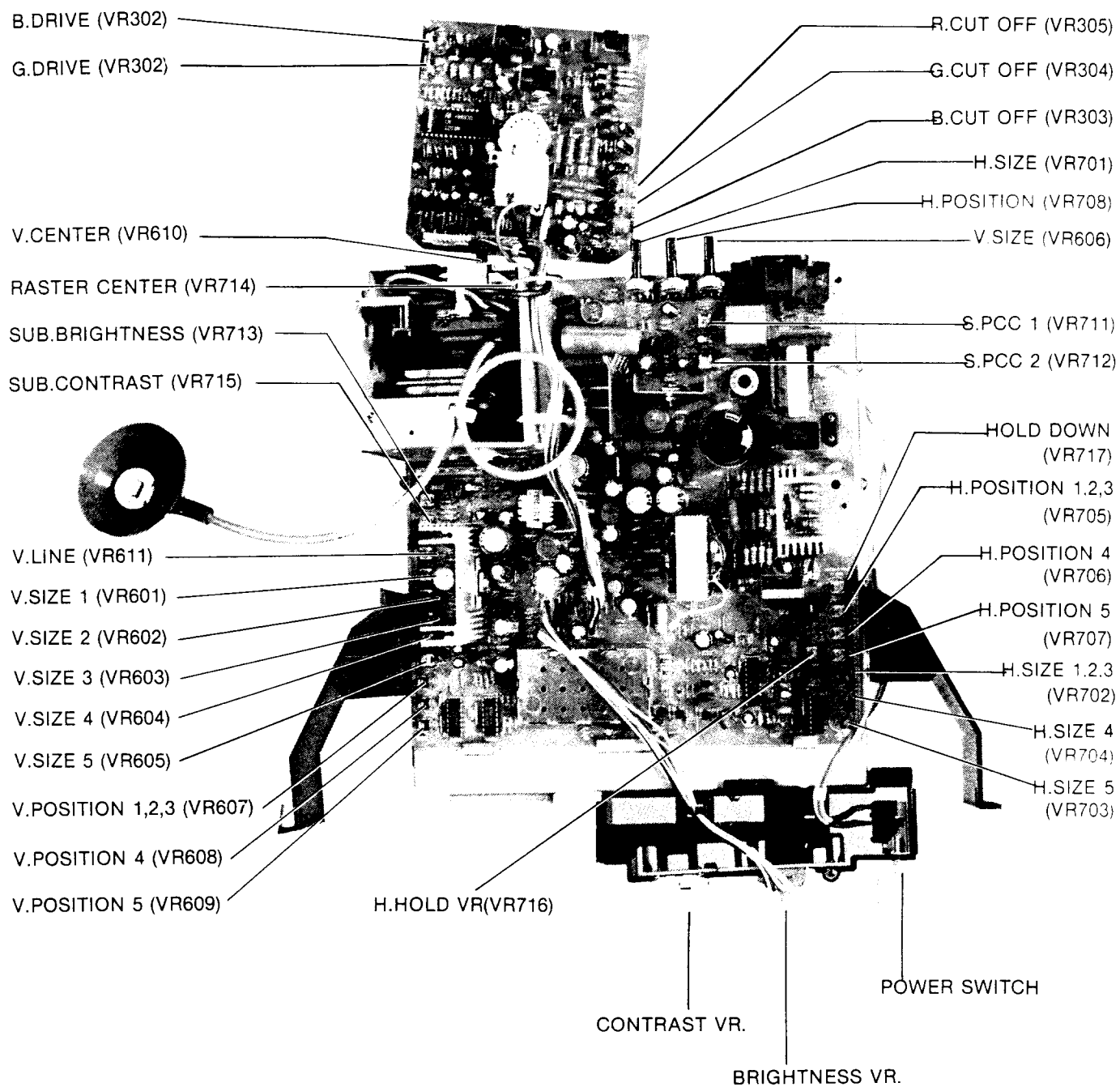


Figure 2, Chassis Important Parts

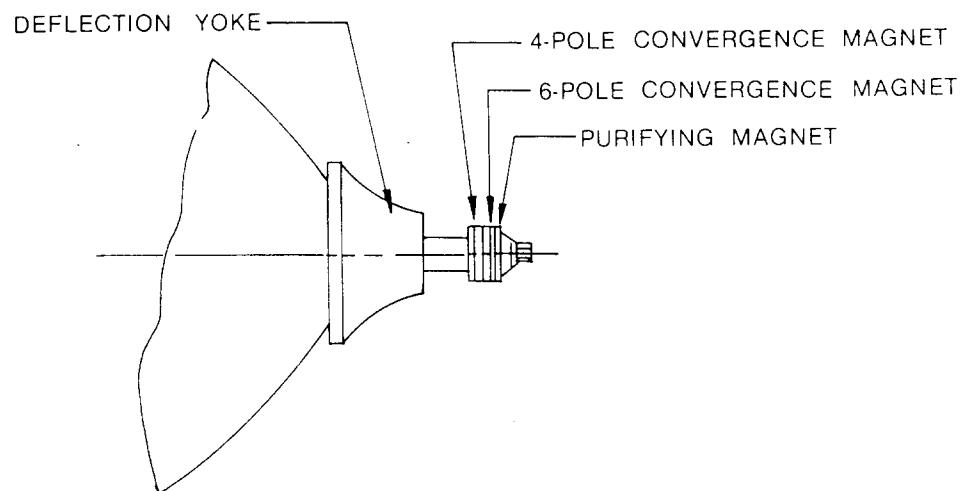
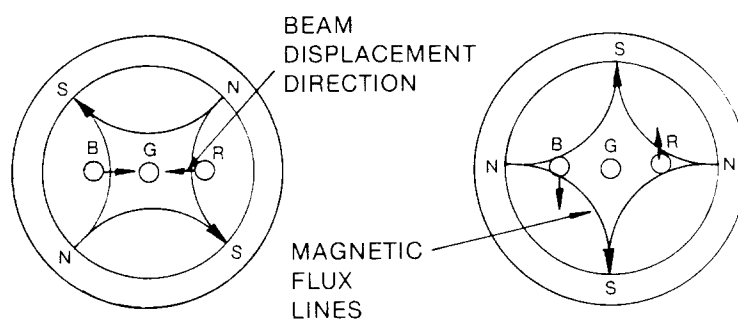


Figure 3, Relative Placement of Components



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

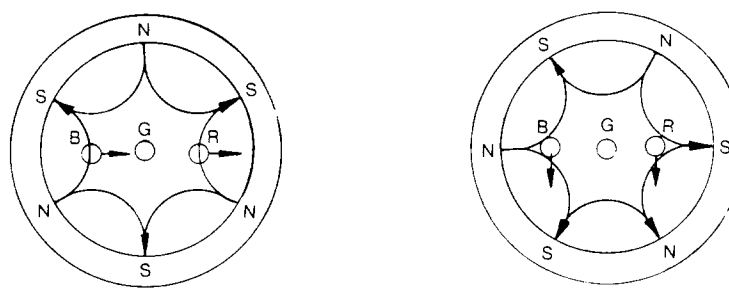
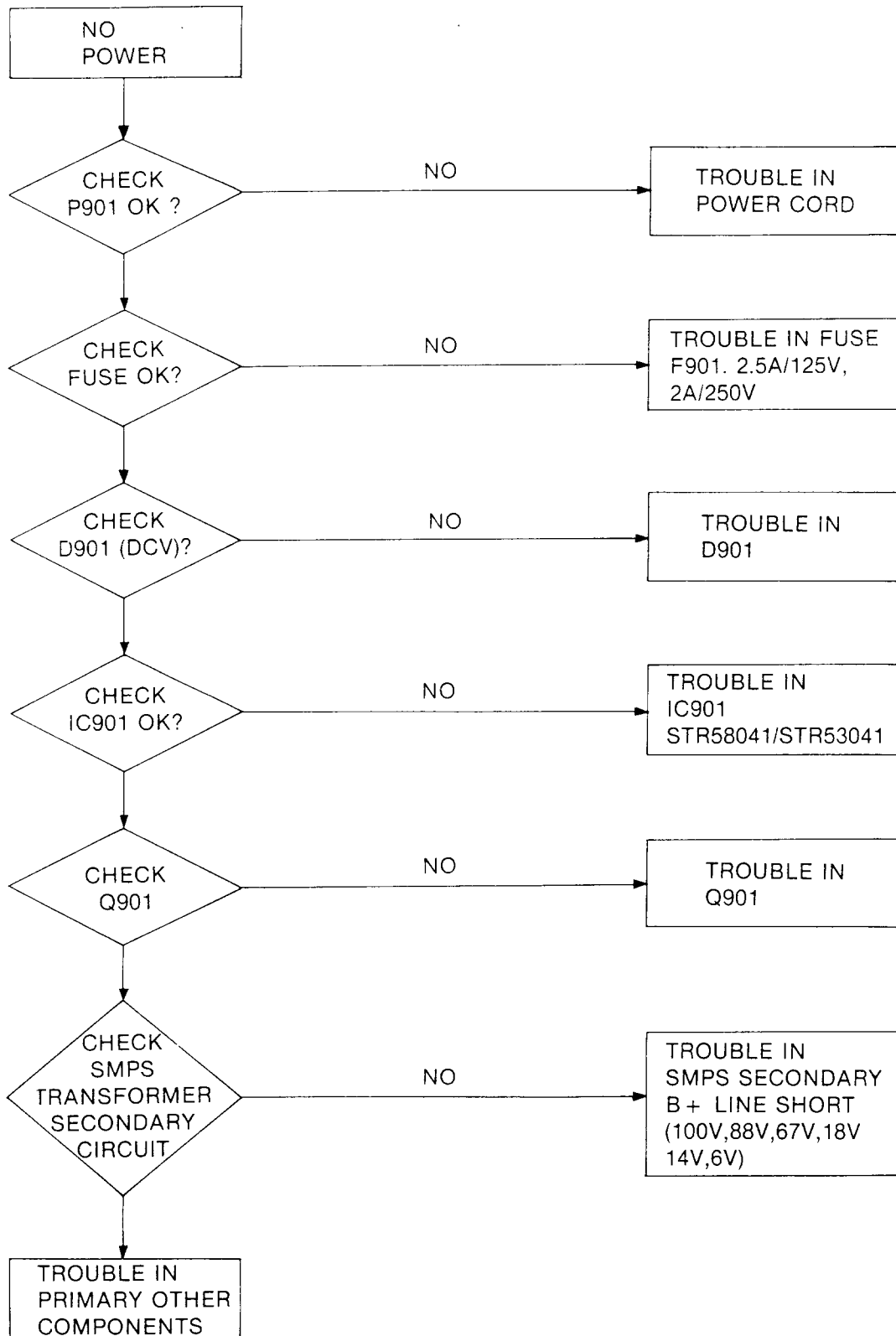


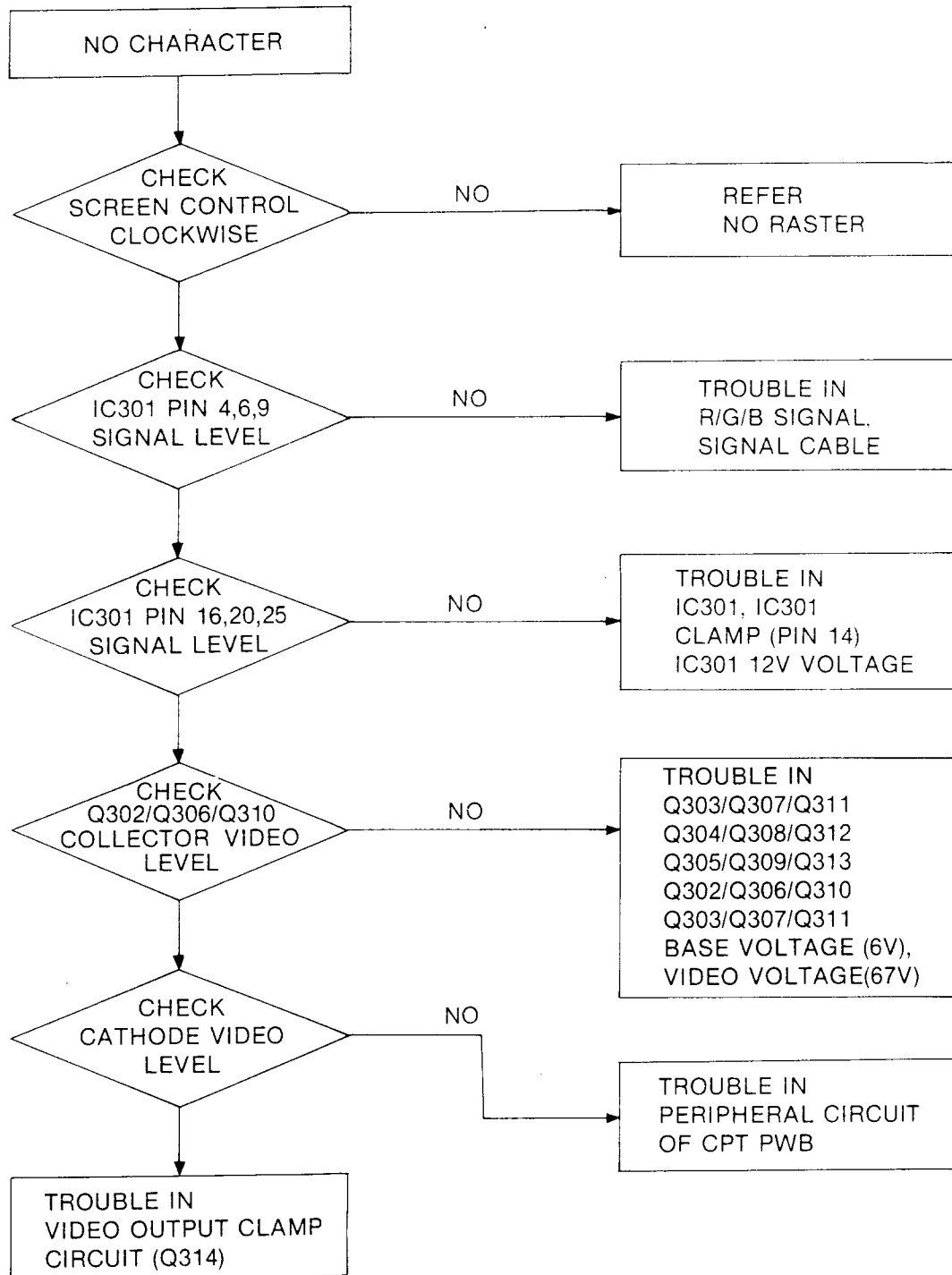
Figure 4, Static Convergence System

TROUBLE SHOOTING GUIDE

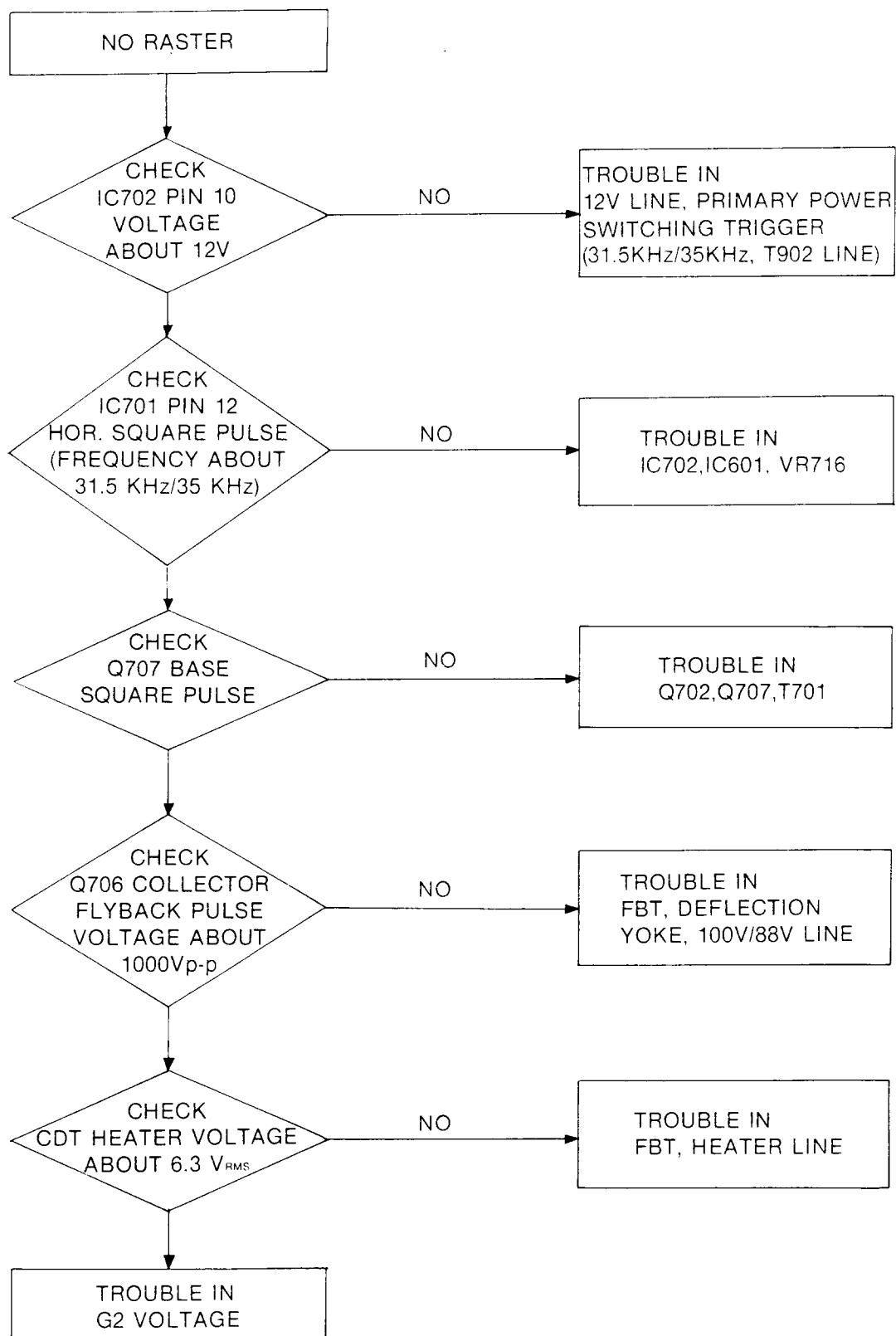
NO POWER



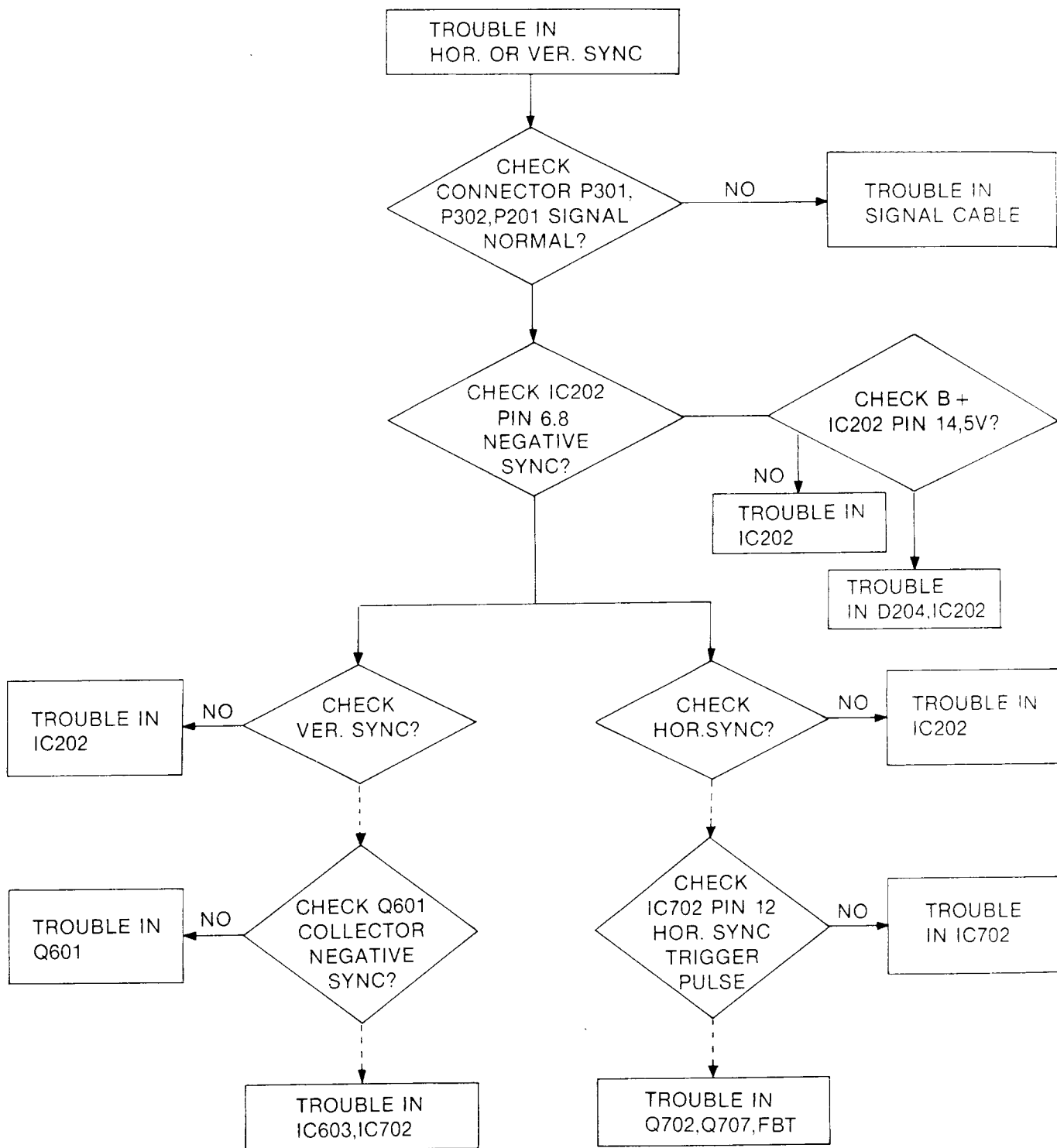
NO CHARACTER



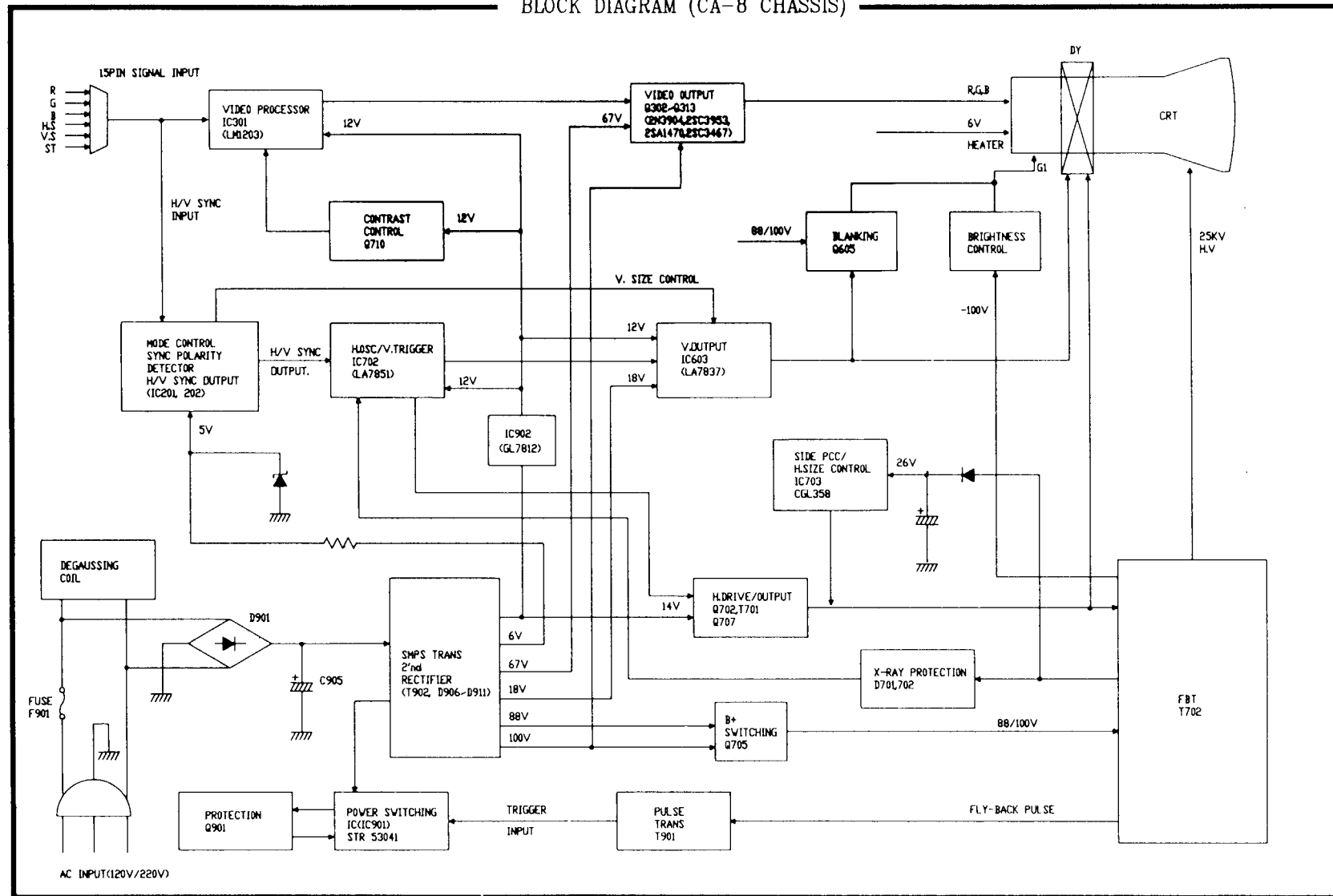
NO RASTER



TROUBLE IN H,V SYNC



BLOCK DIAGRAM (CA-8 CHASSIS)



DESCRIPTION OF BLOCK DIAGRAM

1. First of all if you push on the power switch, the voltage controlled by SWITCHING TR(IC901) in SMPS appears at the primary transformer.

2. Depending on the turns ratio of the transformer, the secondary voltages appear at the secondary and it is rectified by the RECTIFIER D906,907,908,909,910,911.

The SMPS output voltages are DC 67V/18V/14V/6V/100V/88V.

3. HORIZONTAL OPERATING PART.

The horizontal sync. input signal with 31.5 KHz/35.15 KHz/35.52 KHz TTL level is applied to horizontal OSC circuit in DEFLECTION IC (IC701 PIN#1) through GATE ARRAY (IC201, 202)

Then, this signal is driven by horizontal drive transistor (Q702) and horizontal output transistor (Q707), it drives FBT(T702) turning at 31.5 KHz/35.15 KHz/35.52 KHz.

Also it drives horizontal DEFLECTION YOKE.

4. VERTICAL OPERATING PART

The vertical sync. input signal with 56 Hz/60 Hz/70 Hz/87 Hz TTL level is applied to vertical OSC. part of drive IC(IC701 PIN#18).

Again, after the output signal from IC(IC701) applied vertical out IC(IC601), it drives vertical DEFLECTION YOKE.

5. VIDEO OPERATING PART

After R.G.B signals with 31.5 KHz/35.15 KHz/35.52 KHz frequency are applied by video processor IC(IC301), they are applied to video out transistor and they are applied to each R.G.B cathode of CDT.

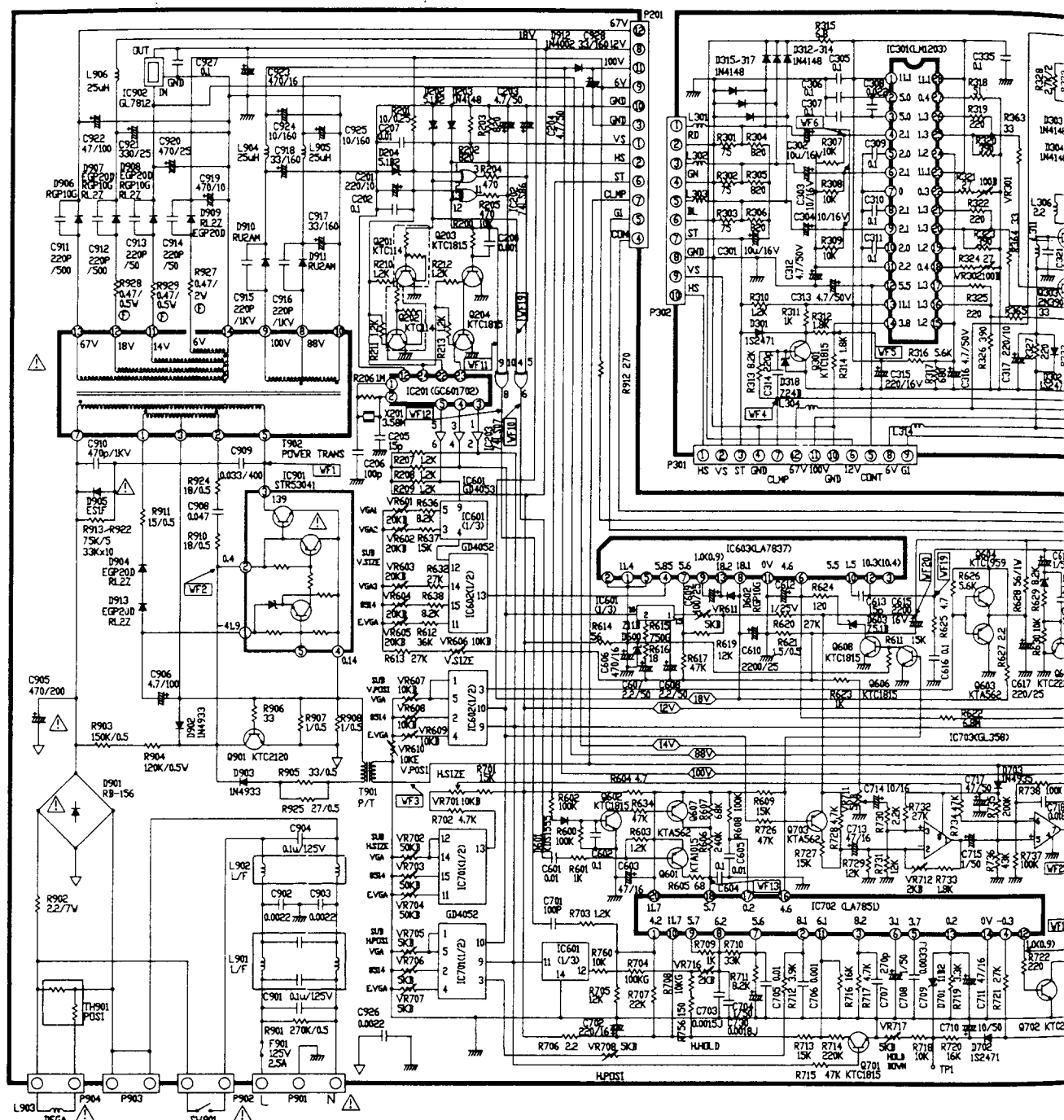
RED	Q302,303,304,305
GREEN	Q306,307,308,309
BLUE	Q310,311,312,313

6. X-RAY PROTECTION PART

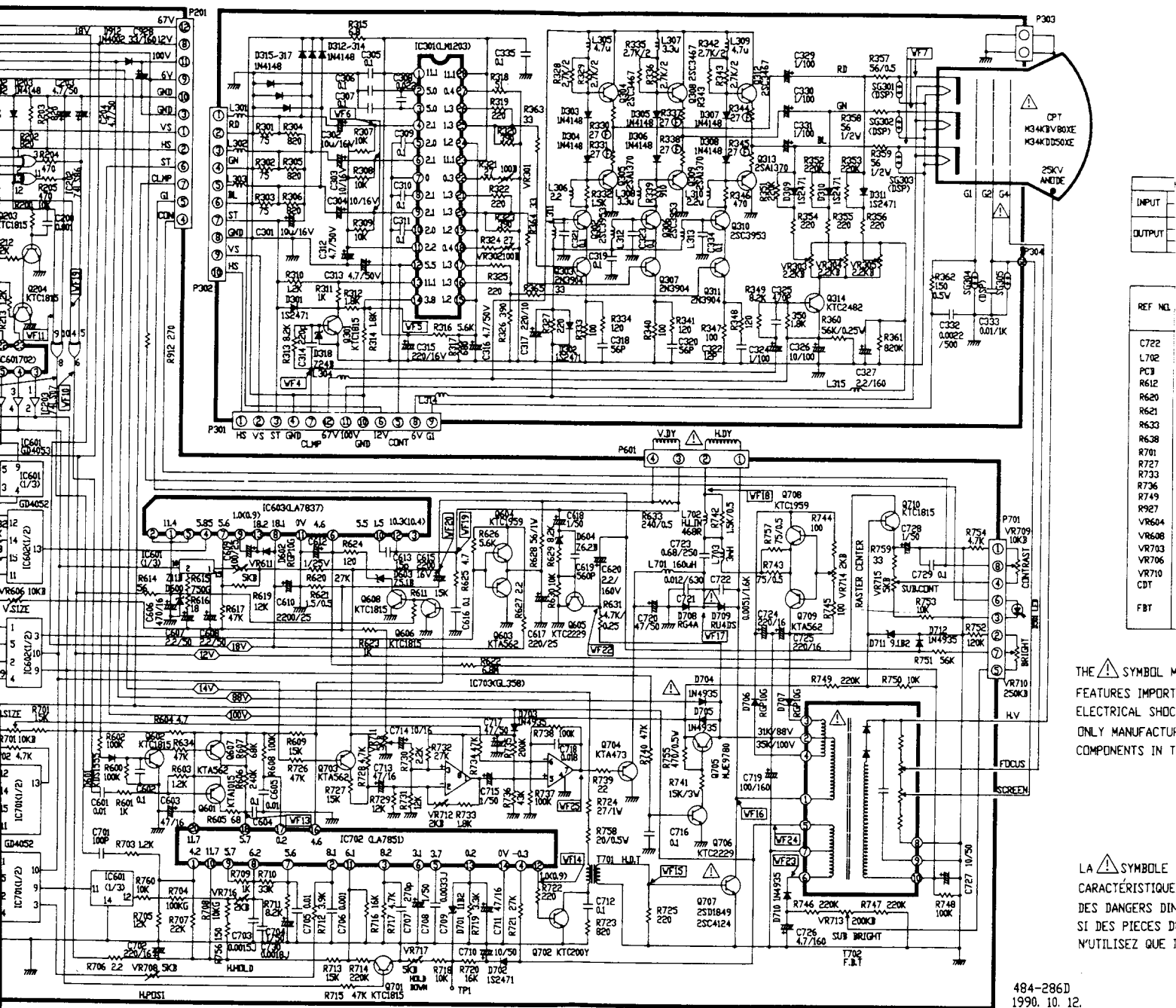
Output voltage from pin#5 of FBT(T702) is applied to diode D702.

The output voltage of zener diode(D701) is applied to X-RAY PROTECTION CIRCUIT, and this circuit controls horizontal OSC. circuit in DEFLECTION IC(IC701).

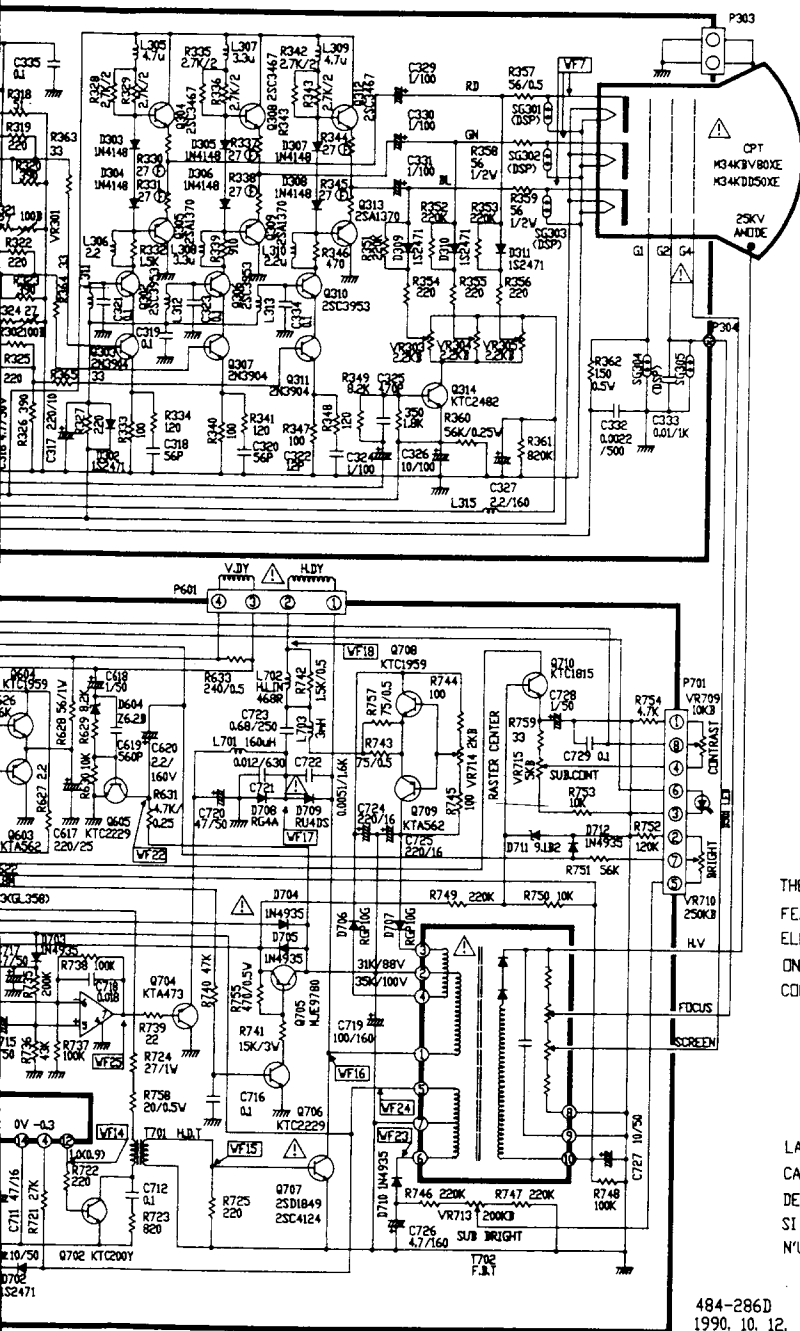
1. SCHEMATIC DIAGRAM (LOW VERSION, WITH 8514/A)



RSION, WITH 8514/A)



484-286D
1990. 10. 12.



IC201 FUNCTION							
MODE	VGA1	VGA2	VGA3	BS14	E.VGA		
INPUT	VS (22P/D)	MEGA	POST	MEGA	POST	ME/PD	NON
	HS (22P/D)	POST	MEGA	MEGA	POST	ME/PD	NON
A (CP/D)	LOW	LOW	LOW	HIGH	HIGH	HIGH	HIGH
B (4P/D)	LOW	LOW	HIGH	LOW	HIGH	LOW	LOW
C (CP/D)	LOW	HIGH	LOW	LOW	HIGH	HIGH	HIGH

REF. NO.	0.28 DOT CDT(V/BS14/A)	0.31 DOT CDT(V/D BS14/A)
C722	MPP, 0.0051uF/1600V	MPP, 0.0062uF/1600V
L702	150-468R	150-468R
PCB	CONTROL, III-D26C	CONTROL, III-D26A
R612	RD, 36 KOhm 1/6V	RD, 33 KOhm 1/6V
R620	RD, 27 KOhm 1/6V	RD, 24 KOhm 1/6V
R621	RD, 15 Ohm 1/2V	RD, 1 Ohm 1/2V
R633	RD, 240 Ohm 1/2V	RD, 180 Ohm 1/2V
R638	RD, 8.2 KOhm 1/6V	RD, 15 KOhm 1/6V
R701	RD, 15 KOhm 1/6V	RD, 22 KOhm 1/6V
R727	RD, 15 KOhm 1/6V	RD, 22 KOhm 1/6V
R733	RD, 18 KOhm 1/6V	RD, 220 Ohm 1/6V
R736	RD, 43 KOhm 1/6V	RD, 51 KOhm 1/6V
R749	RD, 220 KOhm 1/6V	RD, 270 KOhm 1/6V
R927	RF, 0.47 Ohm 2V	RF, 0.33 Ohm 1V
VR604	SEMI-FIXSR-19R 20Kb	JUMP WIRE
VR608	SEMI-FIXSR-29R 10Kb	RD, 390 Ohm 1/6V(R3)
VR703	SEMI-FIXSR-29R 50Kb	RD, 12 KOhm 1/6V(RD)
VR706	SEMI-FIXSR-19R 5Kb	RD, 12 KOhm 1/6V(R2)
VR710	VR, 250Kb	VR, 250Kb
CDT	MATSUSHITA M34KBV80XE	HITACHI M34JCA30X
FBI	HITACHI M34KD50XE	HITACHI M34JCA30X
	MATSUSHITA M34JGV19	HITACHI P2435333
	HITACHI P2435335	HITACHI P2435333

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.

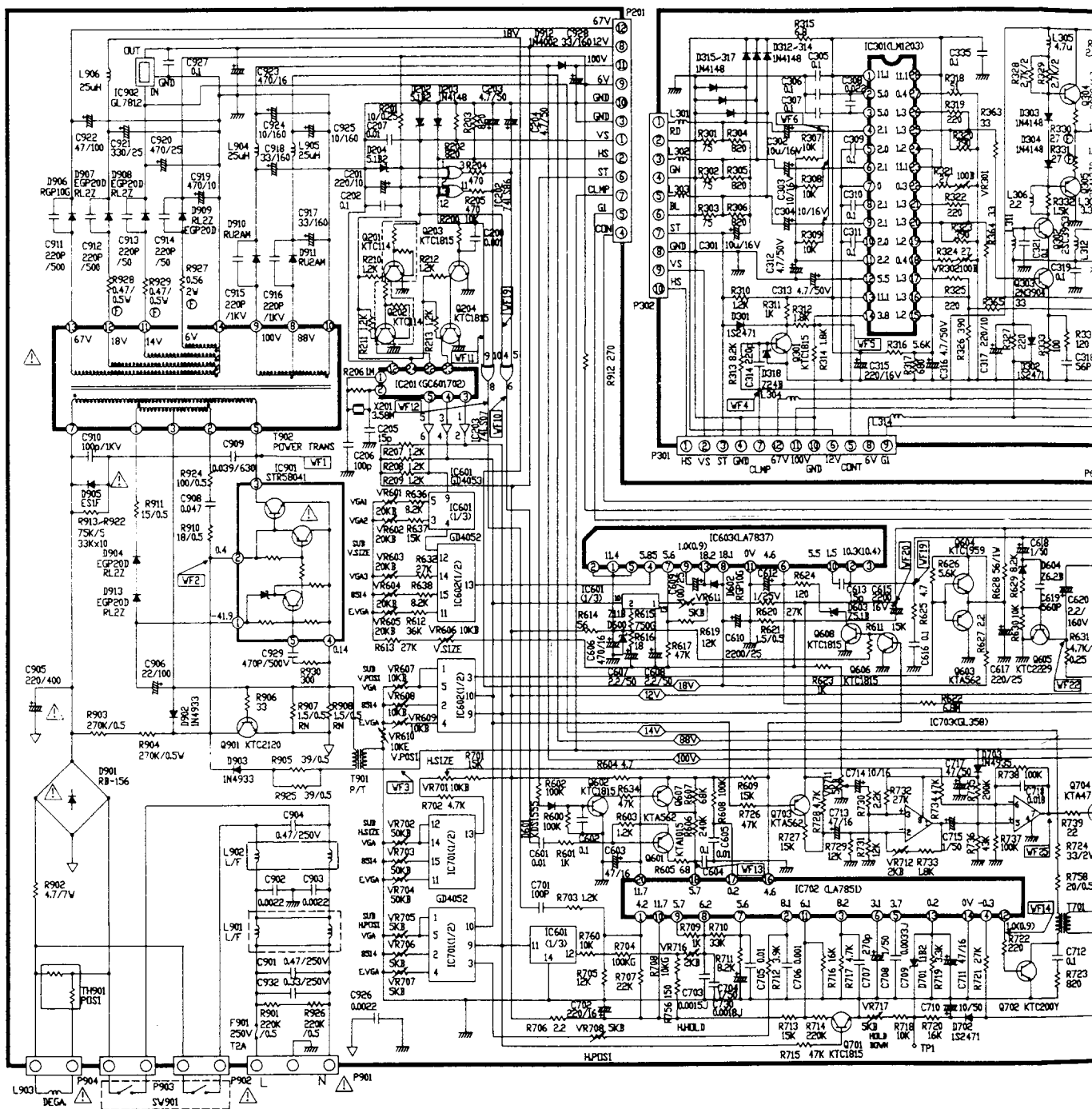
IMPORTANT AVIS SUR LA SÉCURITÉ

LA  SYMBOLE MARQUE DE CE DIAGRAMME SCHEMATIQUE 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 REMPLACÉES N'UTILISEZ QUE DES PIÈCES SPÉCIFIÉES PAR LE MANUFACTURIER.

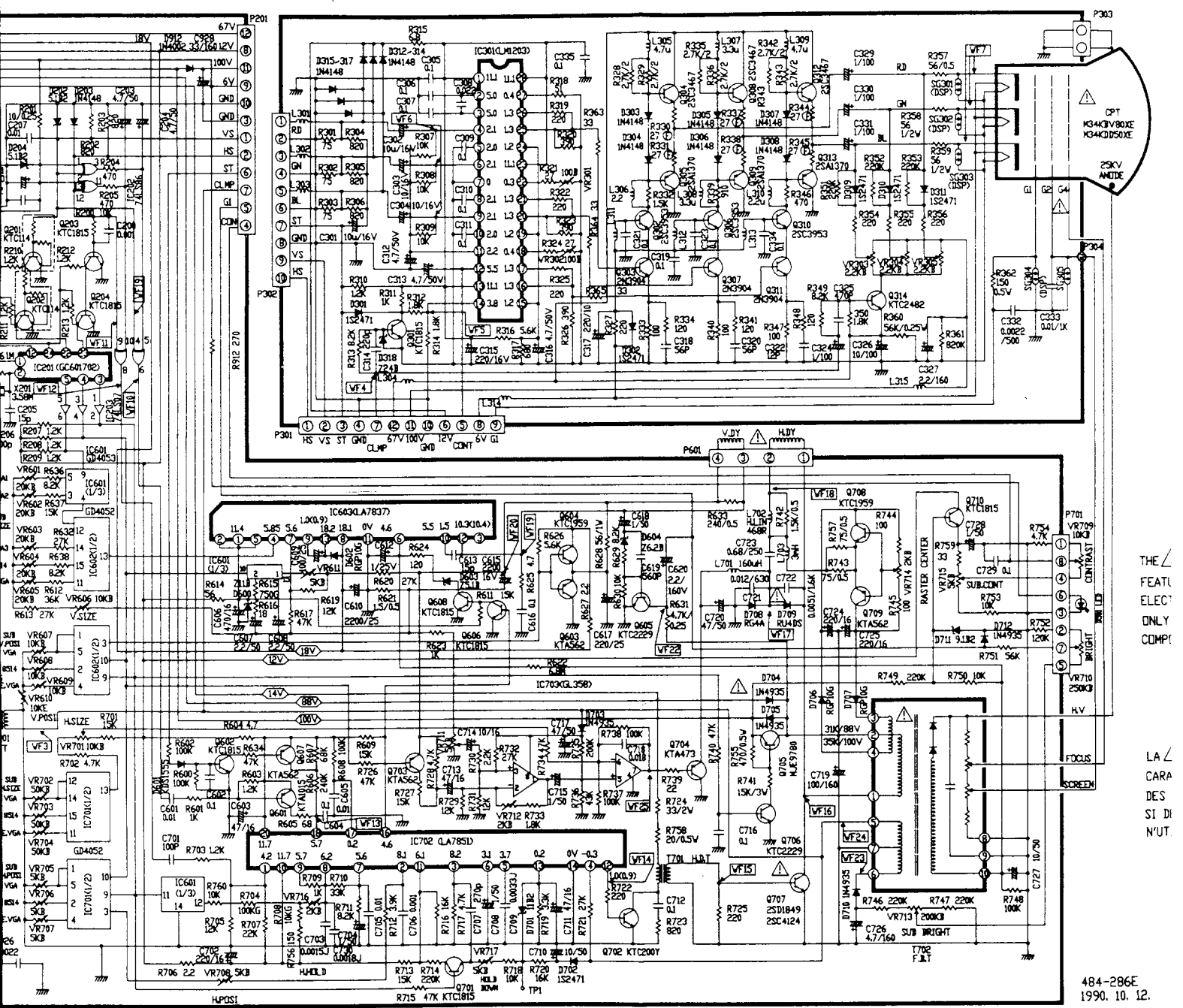
484-286D
1990. 10. 12.

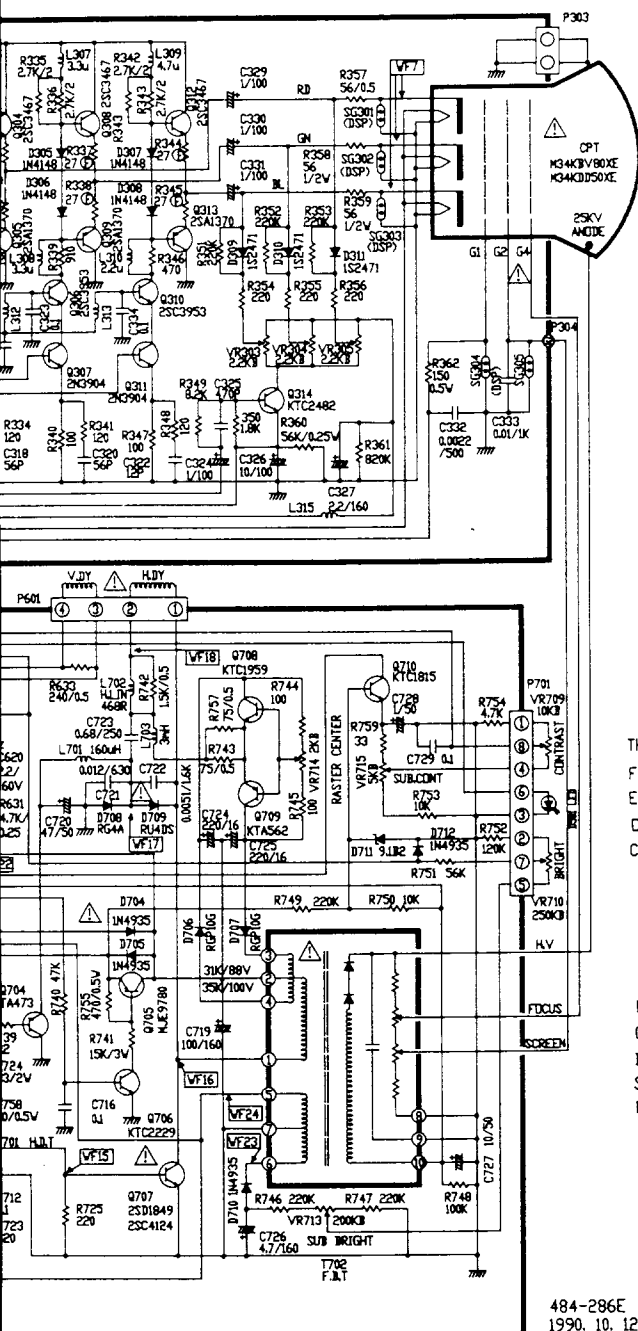
For Service Manuals
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554
email:- mauritron@dial.pipex.com

2. SCHEMATIC DIAGRAM (HIGH VERSION, WITH 8514/A)



VERSION, WITH 8514/A)





IC201 FUNCTION

	MODE	VG1	VG2	VG3	BS14	E.VGA	
INPUT	VS (22P90)	MEGA	POST	MEGA	POST	NE/PO	NON
	HS (22P90)	POST	MEGA	MEGA	POST	NE/PO	NON
OUTPUT	A CP/D	LOW	LOW	LOW	HIGH	HIGH	HIGH
	B CP/D	LOW	LOW	HIGH	LOW	HIGH	LOW
	C CP/D	LOW	HIGH	LOW	LOW	HIGH	HIGH

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.

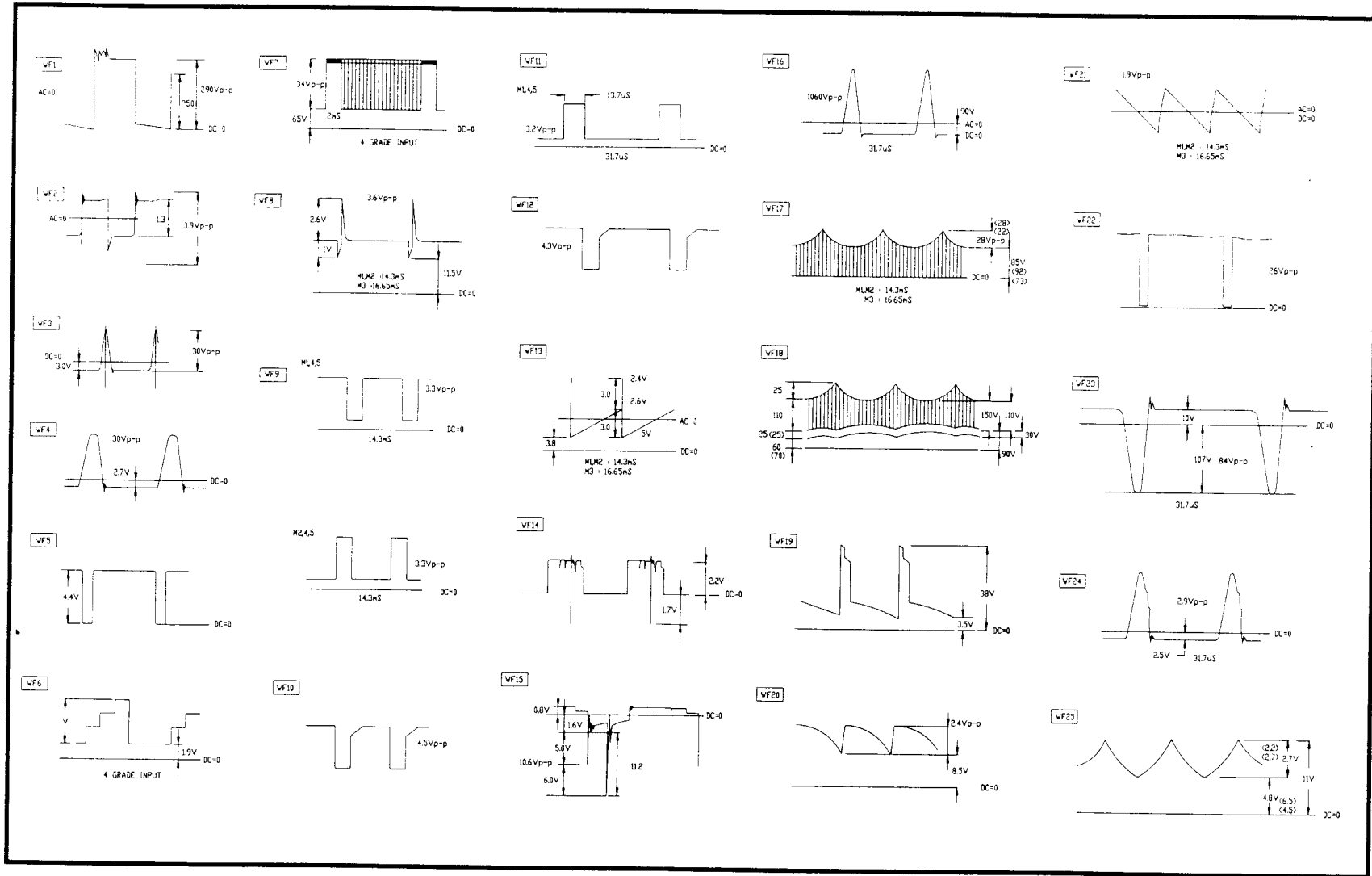
IMPORTANT AVIS SUR LA SÉCURITÉ

LA  SYMBOLE MARQUE DE CE DIAGRAMME SCHEMATIQUE 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 REMPLACÉES UTILISEZ QUE DES PIÈCES SPÉCIFIÉES PAR LE MANUFACTURIER.

484-286E
1990. 10. 12.

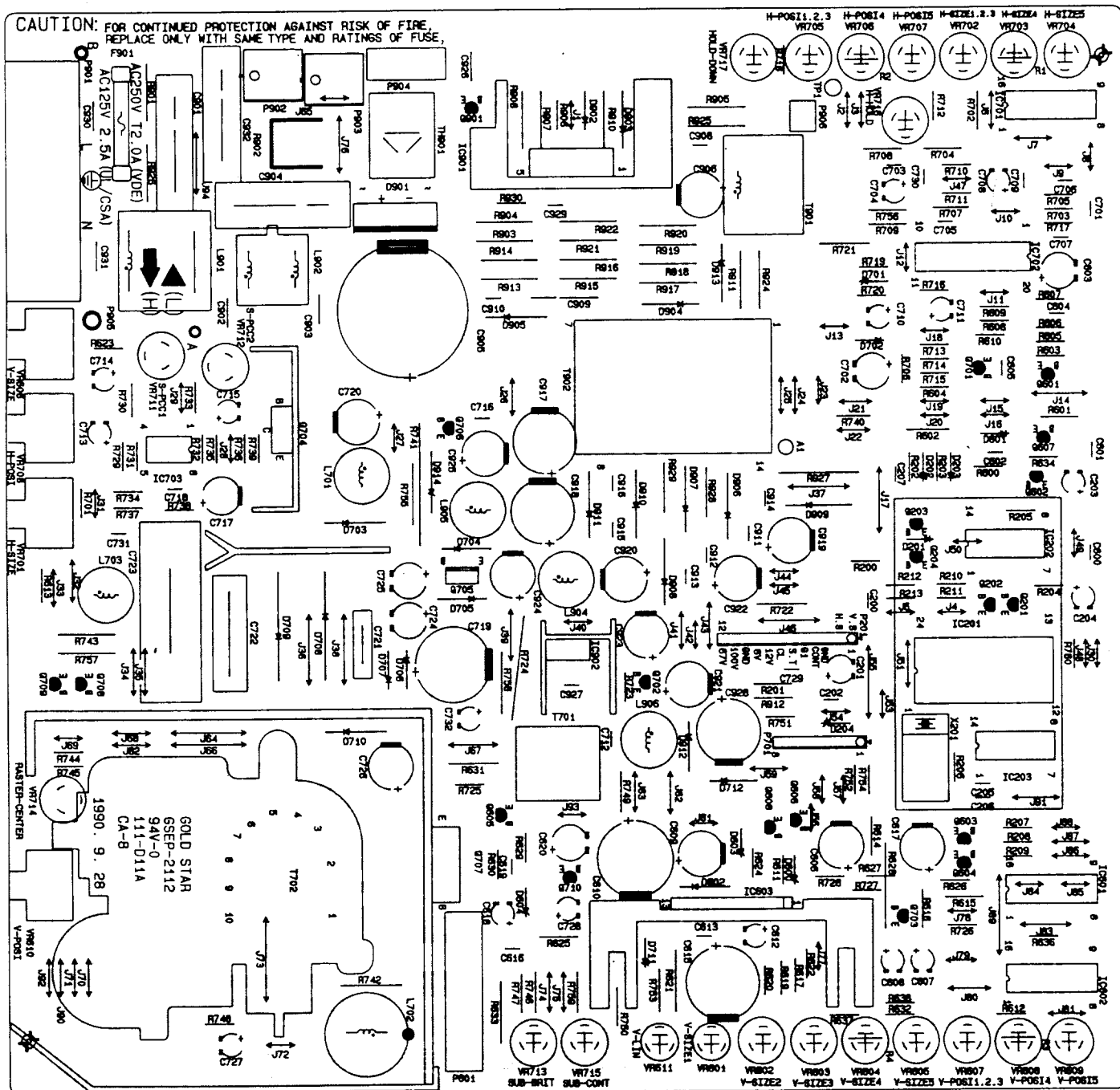
For Service Manuals
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351894
Fax (01844) 352554
email: mauritron@dial.pipex.com

CA-8 CHSSIS WAVE FORM

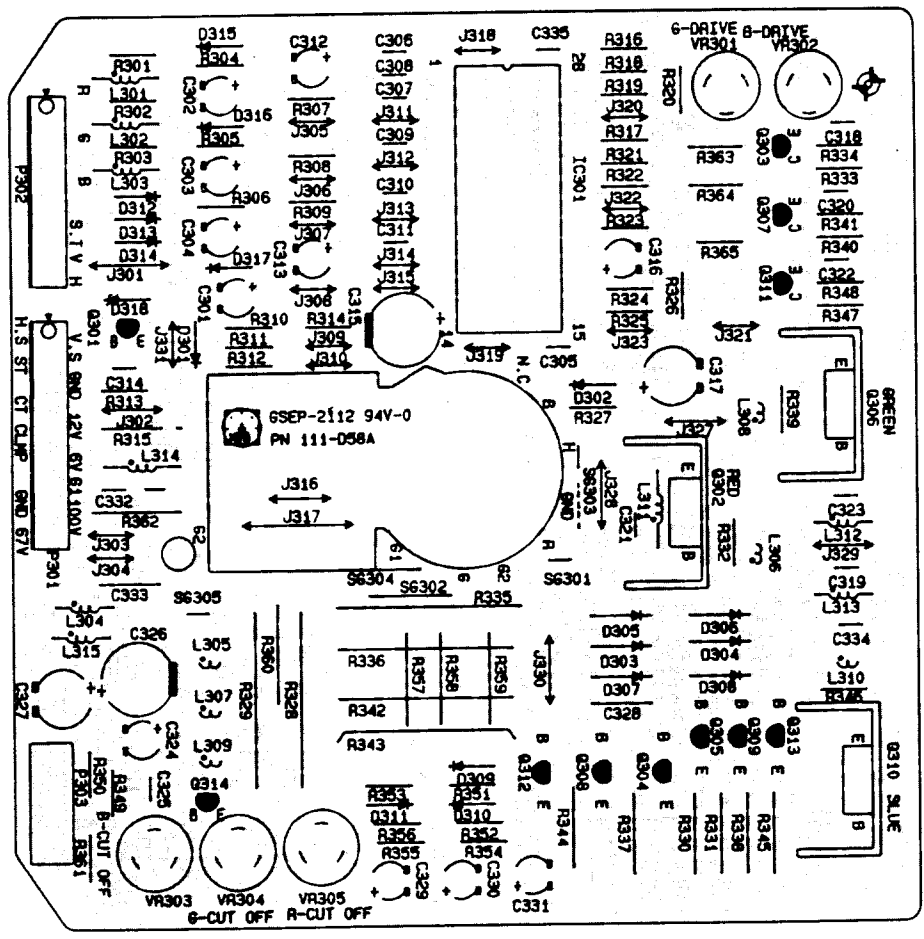


* ALL POINT VOLTAGE ARE
DC VOLTAGE IN MODE3 (VCA3)
() = M4 (8514A)
< > = M5 (E-VGA)

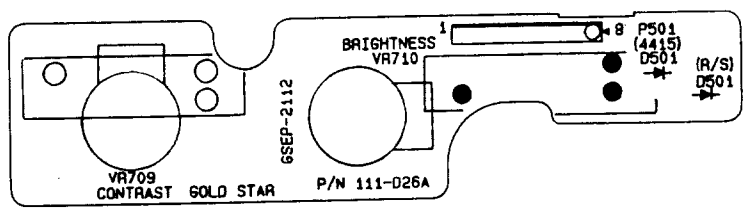
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE,
REPLACE ONLY WITH SAME TYPE AND RATINGS OF FUSE



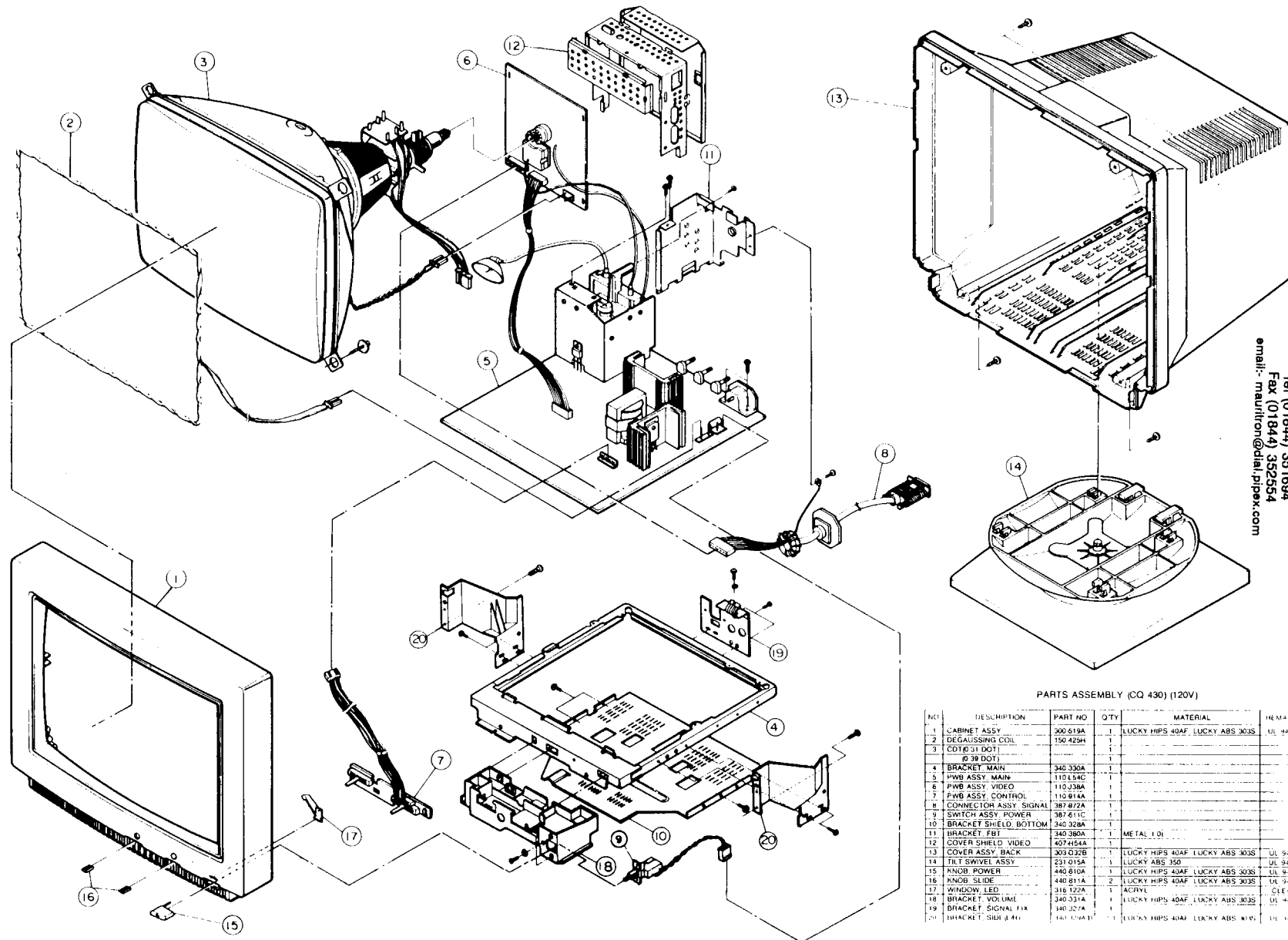
2. VIDEO PCB



3. CONTROL PCB



EXPLODED VIEW

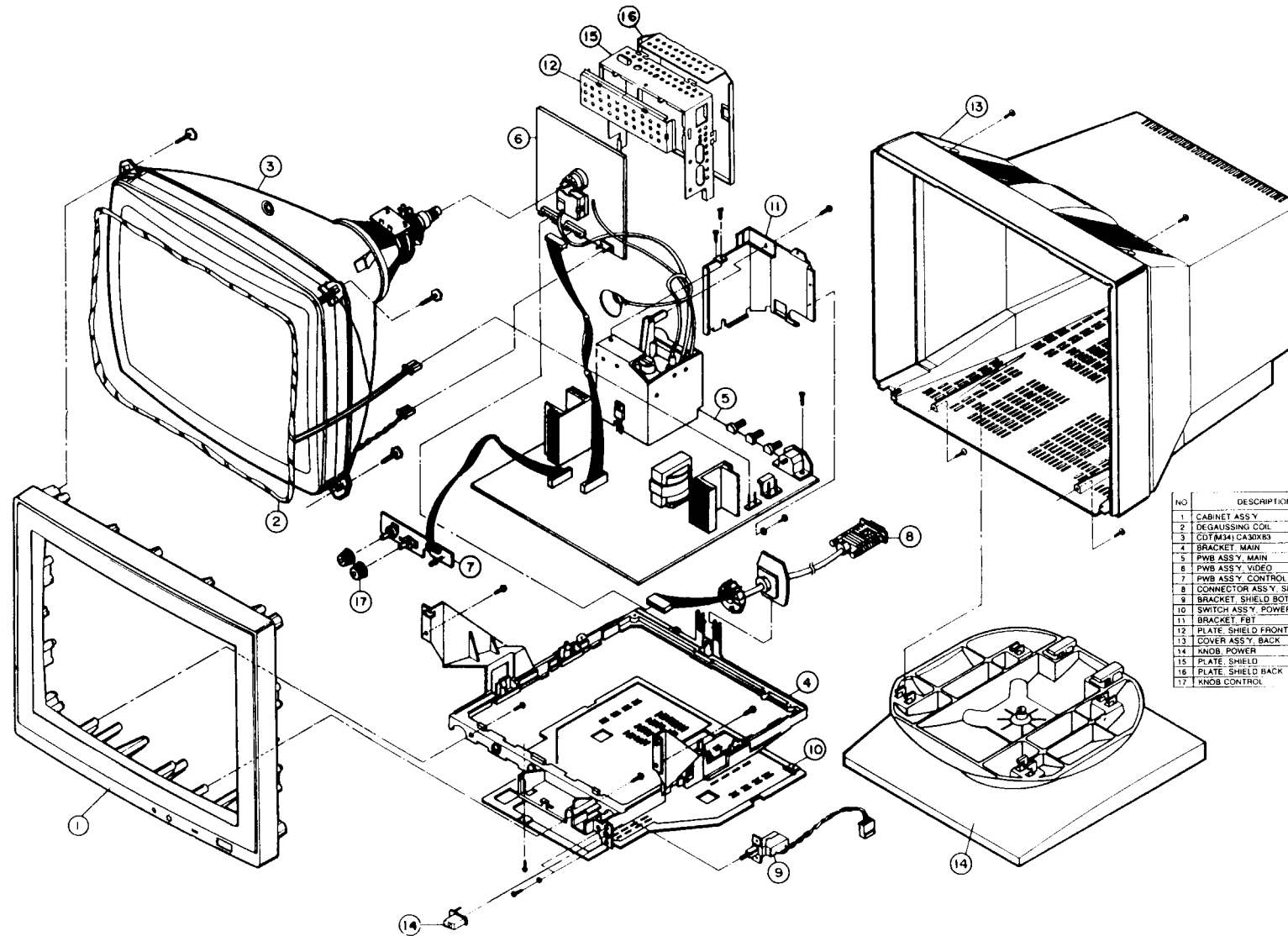


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MAURITRON SERVICES
 8 Cherry Tree Road, Chinnor
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 Tel: (01844) 351694
 Fax: (01844) 352554
 email: mauritron@btinternet.com

PARTS ASSEMBLY (CQ 430) (120V)

NO	DESCRIPTION	PART NO	QTY	MATERIAL	REMARKS
1	CABINET ASSY	300 519A	1	LUCKY HPS 40AF LUCKY ABS 303S	UL 94-B
2	DEGAUSSING COIL	150 429H	1		
3	CDT 39 DOT		1		
4	BRACKET MAIN	340 330A	1		
5	PWB ASSY. MAIN	110 L54C	1		
6	PWB ASSY. VIDEO	110 039A	1		
7	PWB ASSY. CONTROL	110 914A	1		
8	CONNECTOR ASSY. SIGNAL	387 8/2A	1		
9	SWITCH ASSY. POWER	387 611C	1		
10	BRACKET SHIELD, BOTTOM	340 302A	1		
11	BRACKET, FBI	340 380A	1	METAL 1.0I	
12	COVER SHIELD, VIDEO	407 H54A	1		
13	COVER ASSY. BACK	303 032B	1	LUCKY HPS 40AF LUCKY ABS 303S	UL 94-B
14	TRT SWIVEL ASSY	231 015A	1	LUCKY ABS 350	UL 94-B
15	KNOB, POWER	440 810A	1	LUCKY HPS 40AF LUCKY ABS 303S	UL 94-B
16	KNOB, SLIDE	440 811A	2	LUCKY HPS 40AF LUCKY ABS 303S	UL 94-B
17	WINDOW, LED	316 122A	1	ACRYL	CLEAR
18	BRACKET, VOLUME	340 331A	1	LUCKY HPS 40AF LUCKY ABS 303S	UL 94-B
19	BRACKET, SIGNAL FIX	340 327A	1		
20	BRACKET, SIDE, L	340 328A	1	LUCKY HPS 40AF LUCKY ABS 303S	UL 94-B

EXPLODED VIEW



PARTS ASSEMBLY (CQ 432)

NO	DESCRIPTION	PART NO	QTY	MATERIAL	REMARKS
1	CABINET ASS'Y	300 985F	1	LUCKY ABS 303S	UL 94V0
2	DEGAUSSING COIL	150 425H	1		
3	CDT M341 CA30X63		1		
4	BRACKET MAIN	340 330B	1		
5	PWB ASS'Y MAIN	110 454D	1		
6	PWB ASS'Y VIDEO	110 458D	1		
7	PWB ASS'Y CONTROL	110 P14B	1		
8	CONNECTOR ASS'Y SIGNAL	387 972C	1		
9	BRACKET SHIELD BOTTOM	340 328B	1	SBHG1-A	11
10	SWITCH ASS'Y POWER	387 656B	1		
11	BRACKET FBI	340 380A	1	SBHG1-A	11
12	PLATE SHIELD FRONT	407 H54A	1	SPTE C	0.31
13	COVER ASS'Y BACK	303 894U	1	LUCKY ABS 303S	UL 94V0
14	KNOB POWER	440 747B	1	LUCKY ABS 303S	UL 94V0
15	PLATE SHIELD	407 G49B	1	SPTE C	0.31
16	PLATE SHIELD BACK	407 G49A	1	SPTE C	0.31
17	KNOB CONTROL	440 601E	2	LUCKY ABS AF 303S	UL 94V0

REPLACEMENT PARTS LIST

CAUTION: Before replacing any these components, read carefully the “SAFETY PRECAUTION”, on page 3.

Do not degrade the safety of the receiver through improper servicing.

ABBREVIATIONS: Capacitors MPE: Metalized Polyester.

CC: Ceramic (TC), CE: Chemical, CK: Ceramic (Hi-K),
MPP: Metalized Polypropylen, BP: Bipolar, CQ: Mylar
PE: Polyester, PP: Polypropylene

Resistors RD: Carbon Film, RS: Metal Oxide Film,
RN: Metal Film, RV: Variable, RF: Fusing, SR: Semifix

(All CC and Plastic Capacitors are $\pm 5\%$, 50 Volts all resistor, $\pm 5\%$, 1/6W unless other wise noted).

S: Recommend Service Parts, **R:** Replacement Service Parts.

1. MAIN BOARD

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
RESISTORS							
R200	01165121	RD. 10K ohm 1/6W	R	R631	01157113	RD. 4.7K ohm 1/4W	R
R201	01157049	RD. 10 ohm 1/4W	R	R632	01165131	RD. 27K ohm 1/6W	R
R202	01165095	RD. 820 ohm 1/6W	R	R633	01154082	RD. 240 ohm 1/2W	R
R203	01165095	RD. 820 ohm 1/6W	R	R634	01165137	RD. 47K ohm 1/6W	R
R204	01165089	RD. 470 ohm 1/6W	R	R636	01165119	RD. 8.2K ohm 1/6W	R
R205	01165089	RD. 470 ohm 1/6W	R	R637	01165125	RD. 15K ohm 1/6W	R
R206	01165169	RD. 1M ohm 1/6W	R	R638	01165119	RD. 8.2K ohm 1/6W	R
R207	01165099	RD. 1.2K ohm 1/6W	R	R701	01165125	RD. 15K ohm 1/6W	R
R208	01165099	RD. 1.2K ohm 1/6W	R	R702	01165113	RD. 4.7K ohm 1/6W	R
R209	01165099	RD. 1.2K ohm 1/6W	R	R703	01165099	RD. 1.2K ohm 1/6W	R
R210	01165099	RD. 1.2K ohm 1/6W	R	R704	01160145	RD. 100K ohm 1/4W	R
R211	01165099	RD. 1.2K ohm 1/6W	R	R705	01165123	RD. 12K ohm 1/6W	R
R212	01165099	RD. 1.2K ohm 1/6W	R	R706	01165033	RD. 2.2 ohm 1/6W	R
R213	01165099	RD. 1.2K ohm 1/6W	R	R707	01165129	RD. 22K ohm 1/6W	R
R600	01165145	RD. 100K ohm 1/6W	R	R708	01160121	RD. 10K ohm 1/4W	R
R601	01165097	RD. 1K ohm 1/6W	R	R709	01165097	RD. 1K ohm 1/6W	R
R602	01165145	RD. 100K ohm 1/6W	R	R710	01165133	RD. 33K ohm 1/6W	R
R603	01165099	RD. 1.2K ohm 1/6W	R	R711	01165119	RD. 8.2K ohm 1/6W	R
R604	01165041	RD. 4.7 ohm 1/6W	R	R712	01165111	RD. 3.9K ohm 1/6W	R
R605	01165069	RD. 68 ohm 1/6W	R	R713	01165125	RD. 15K ohm 1/6W	R
R606	01165154	RD. 240K ohm 1/6W	R	R714	01165153	RD. 220K ohm 1/6W	R
R607	01165141	RD. 68K ohm 1/6W	R	R715	01165137	RD. 47K ohm 1/6W	R
R608	01165145	RD. 100K ohm 1/6W	R	R716	01165126	RD. 16K ohm 1/6W	R
R609	01165125	RD. 15K ohm 1/6W	R	R717	01165113	RD. 4.7K ohm 1/6W	R
R611	01165125	RD. 15K ohm 1/6W	R	R718	01165121	RD. 10K ohm 1/6W	R
R612	01165134	RD. 36K ohm 1/6W	R	R719	01165109	RD. 3.3K ohm 1/6W	R
R613	01165131	RD. 27K ohm 1/6W	R	R720	01165126	RD. 16K ohm 1/6W	R
R614	01165067	RD. 56 ohm 1/6W	R	R721	01165131	RD. 27K ohm 1/6W	R
R615	01160094	RD. 750 ohm 1/4W	R	R722	01165081	RD. 220 ohm 1/6W	R
R616	01157055	RD. 18 ohm 1/4W	R	R723	01165095	RD. 820 ohm 1/6W	R
R617	01165137	RD. 47K ohm 1/6W	R	R724	01332059	RS. 27 ohm 1W	R
R619	01165123	RD. 12K ohm 1/6W	R	R725	01165081	RD. 220 ohm 1/6W	R
R620	01165131	RD. 27K ohm 1/6W	R	R726	01165137	RD. 47K ohm 1/6W	R
R621	01154029	RD. 1.5 ohm 1/2W	R	R727	01165125	RD. 15K ohm 1/6W	R
R622	01165189	RD. 6.8M ohm 1/6W	R	R728	01165113	RD. 4.7K ohm 1/6W	R
R623	01165097	RD. 1K ohm 1/6W	R	R729	01165123	RD. 12K ohm 1/6W	R
R624	01165075	RD. 120 ohm 1/6W	R	R730	01165105	RD. 2.2K ohm 1/6W	R
R625	01157041	RD. 4.7 ohm 1/4W	R	R731	01165123	RD. 12K ohm 1/6W	R
R626	01165115	RD. 5.6K ohm 1/6W	R	R732	01165131	RD. 27K ohm 1/6W	R
R627	01165033	RD. 2.2 ohm 1/6W	R	R733	01165103	RD. 1.8K ohm 1/6W	R
R628	01332067	RS. 56 ohm 1W	R	R734	01165137	RD. 47K ohm 1/6W	R
R629	01165119	RD. 8.2K ohm 1/6W	R	R735	01165152	RD. 200K ohm 1/6W	R
R630	01165121	RD. 10K ohm 1/6W	R	R736	01165136	RD. 43K ohm 1/6W	R
				R737	01165145	RD. 100K ohm 1/6W	R

PRODUCT SAFETY NOTE: Components marked (Δ) have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this service manual. Don't degrade the safety of the receiver improper, servicing.

REF. NO.	PART NO.	DESCRIPTION	REMARK
R738	01165145	RD, 100K ohm 1/6W	R
R739	01165057	RD, 22 ohm 1/6W	R
R740	01165137	RD, 47K ohm 1/6W	R
R741	01341125	RS, 15K ohm 3W	R
R742	01154101	RD, 1.5K ohm 1/2W	R
R743	01154070	RD, 75 ohm 1/2W	R
R744	01165073	RD, 100 ohm 1/6W	R
R745	01165073	RD, 100 ohm 1/6W	R
R746	01165153	RD, 220K ohm 1/6W	R
R747	01165153	RD, 220K ohm 1/6W	R
R748	01165145	RD, 100K ohm 1/6W	R
R749	01165153	RD, 220K ohm 1/6W	R
R750	01165121	RD, 10K ohm 1/6W	R
R751	01165139	RD, 56K ohm 1/6W	R
R752	01165145	RD, 120K ohm 1/6W	R
R753	01165121	RD, 10K ohm 1/6W	R
R754	01165113	RD, 4.7K ohm 1/6W	R
R755	01154089	RD, 470 ohm 1/2W	R
R756	01157077	RD, 150 ohm 1/4W	R
R757	01154070	RD, 75 ohm 1/2W	R
R758	01154056	RD, 20 ohm 1/2W	R
R759	01165061	RD, 33 ohm 1/6W	R
R760	01165121	RD, 10K ohm 1/6W	R
R901	01154155	RD, 270K ohm 1/2W	R
Δ R902	180-104B	CEMENT RWR, 2.2 ohm 7W	S
R903	01154149	RD, 150K ohm 1/2W	R
R904	01154147	RD, 120K ohm 1/2W	R
R905	01154061	RD, 33 ohm ohm 1/2W	R
R906	01165061	RD, 33 ohm 1/6W	R
R907	01154025	RD, 1 ohm 1/2W	R
R908	01154025	RD, 1 ohm 1/2W	R
R910	01154055	RD, 18 ohm 1/2W	R
Δ R911	01154053	RD, 15 ohm 1/2W	R
R912	01165083	RD, 270 ohm 1/6W	R
R913	01154133	RD, 33K ohm 1/2W	R
R914	01154133	RD, 33K ohm 1/2W	R
R915	01154133	RD, 33K ohm 1/2W	R
R916	01154133	RD, 33K ohm 1/2W	R
R917	01154133	RD, 33K ohm 1/2W	R
R918	01154133	RD, 33K ohm 1/2W	R
R919	01154133	RD, 33K ohm 1/2W	R
R920	01154133	RD, 33K ohm 1/2W	R
R921	01154133	RD, 33K ohm 1/2W	R
R922	01154133	RD, 33K ohm 1/2W	R
R924	01154055	RD, 18 ohm 1/2W	R
R925	01154059	RD, 27 ohm 1/2W	R
R927	180-140S	RF, 0.47 ohm 2W	S
R928	180-1407	RF, 0.47 ohm 1/2W	S
R929	180-1407	RF, 0.47 ohm 1/2W	S
VR601	180-191Q	SEMI-FIX, SR-19R 20KB	S
VR602	180-191Q	SEMI-FIX, SR-19R 20KB	S
VR603	180-191Q	SEMI-FIX, SR-19R 20KB	S
VR604	180-191Q	SEMI-FIX, SR-19R 20KB	S
VR605	180-191Q	SEMI-FIX, SR-19R 20KB	S
VR606	180-680N	VR, 10KB	S
VR607	180-192N	SEMI-FIX, SR-29R 10KB	S
VR608	180-192N	SEMI-FIX, SR-29R 10KB	S

REF. NO.	PART NO.	DESCRIPTION	REMARK
VR609	180-192N	SEMI-FIX, SR-29R 10KB	S
VR610	180-680M	VR, 10KB	S
VR611	180-191L	SEMI-FIX, SR-19R 5KB	S
VR701	180-680B	VR, 10KB	S
VR702	180-192S	SEMI-FIX, SR-29R 50KB	S
VR703	180-192S	SEMI-FIX, SR-29R 50KB	S
VR704	180-192S	SEMI-FIX, SR-29R 50KB	S
VR705	180-191L	SEMI-FIX, SR-19R 5KB	S
VR706	180-191L	SEMI-FIX, SR-19R 5KB	S
VR707	180-191L	SEMI-FIX, SR-19R 5KB	S
VR708	180-680H	VR, 5KB	S
VR711	180-191L	SEMI-FIX, SR-19R 5KB	S
VR712	180-191J	SEMI-FIX, SR-19R 2KB	S
VR713	180-191W	SEMI-FIX, SR-19R 200KB	S
VR714	180-191J	SEMI-FIX, SR-29R 2KB	S
VR715	180-191L	SEMI-FIX, SR-19R 5KB	S
VR716	180-191J	SEMI-FIX, SR-19R 2KB	S
VR717	180-191L	SEMI-FIX, SR-19R 5KB	S
CAPACITORS			
C200	08700319	CQ, 0.001uF/100V	R
C201	08110221	CE, 220uF/10V	R
C202	08200978	CK, 0.1uF/50V	R
C203	08110511	CE, 4.7uF/50V	R
C204	08110511	CE, 4.7uF/50V	R
C205	08300116	CC, 15pF/50V	R
C206	08201038	CK, 100pF/50V	R
C207	08200972	CK, 0.01uF/50V	R
C601	08200972	CK, 0.01uF/50V	R
C602	08200978	CK, 0.1uF/50V	R
C603	08110317	CE, 47uF/16V	R
C604	08700337	CQ, 0.1uF/100V	R
C605	08756531	CQ, 0.01uF/100V	R
C606	02140323	CE, 470uF/16V	R
C607	08110509	CE, 2.2uF/50V	R
C608	08110509	CE, 2.2uF/50V	R
C609	08110419	CE, 100uF/25V	R
C610	02140427	CE, 2200uF/25V	R
C612	181-032J	TANTAL, 1uF/25V	R
C613	08300116	CC, 15pF/50V	R
C615	02140327	CE, 2200uF/16V	R
C616	08700337	CQ, 0.1uF/100V	R
C617	02140421	CE, 220uF/25V	R
C618	08110507	CE, 1uF/50V	R
C619	08200754	CE, 560uF/50V	R
C620	08110709	CE, 2.2uF/160V	R
C701	08201038	CK, 100pF/50V	R
C702	08110321	CE, 220uF/16V	R
C703	181-143G	PP, 0.0015uF/100V	R
C704	08110507	CE, 1uF/50V	R
C705	08756531	CQ, 0.01uF/100V	R
C706	08700319	CQ, 0.001uF/100V	R
C707	08200746	CK, 270pF/50V	R
C708	08110507	CE, 1uF/50V	R
C709	181-143Z	PP, 0.0033uF/100V	R
C710	08110513	CE, 10uF/50V	R

PRODUCT SAFETY NOTE: Components marked (Δ) have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this service manual. Don't degrade the safety of the receiver improper, servicing.

REF. NO.	PART NO.	DESCRIPTION	REMARK
C711	08110317	CE, 47uF/16V	R
C712	08200978	CK, 0.1uF/50V	R
C713	08110317	CE, 47uF/16V	R
C714	08110313	CE, 10uF/16V	R
C715	08110507	CE, 1uF/50V	R
C716	08200978	CK, 0.1uF/50V	R
C717	08110518	CE, 47uF/50V	R
C718	08756517	CQ, 0.018uF/100V	R
C719	02140719	CE, 100uF/160V	R
C720	08110518	CE, 47uF/50V	R
Δ C721	181-061H	PP, 0.012uF/630V	S
Δ C722	181-353P	MPP, 0.0051uF/1600V	S
Δ C723	181-143Y	PP, 0.68uF/250V	S
C724	08110321	CE, 220uF/16V	R
C725	08110321	CE, 220uF/16V	R
C726	08110711	CE, 4.7uF/160V	R
C727	08110513	CE, 10uF/50V	R
C728	08110507	CE, 1uF/50V	R
C729	08200978	CK, 0.1uF/50V	R
C730	08752822	CQ, 0.0018uF/100V	R
C901	181-278A	X-CAP, 0.1uF/120V	S
C902	181-048J	0.0022uF Y-CAP	S
C903	181-048J	0.0022uF Y-CAP	S
C904	181-278A	X-CAP, 0.1uF/125V	S
Δ C905	181-124E	CE, 470uF/200V	S
C906	08110611	CE, 4.7uF/100V	R
C908	08700335	CQ, 0.047uF/100V	R
C909	181-060N	PP, 0.033uF/400V	S
C910	02201352	CK, 470pF/1000V	R
C911	08201044	CK, 220pF/500V	R
C912	08201044	CK, 220pF/500V	R
C913	08200744	CK, 220pF/50V	R
C914	08200744	CK, 220pF/50V	R
C915	02201344	CK, 220pF/1000V	R
C916	02201344	CK, 220pF/1000V	R
C917	02140716	CE, 33uF/160V	R
C918	02140716	CE, 33uF/160V	R
C919	02140223	CE, 470uF/10V	R
C920	02140423	CE, 470uF/25V	R
C921	02140422	CE, 330uF/25V	R
C922	02140617	CE, 47uF/100V	R
C923	02140323	CE, 470uF/16V	R
C924	08110713	CE, 10uF/160V	R
C925	08110713	CE, 10uF/160V	R
C926	181-048J	0.0022uF Y-CAP	S
C927	08200978	CK, 0.1uF/50V	R
C928	02140716	CE, 33uF/160V	R
DIODE			
D202	06220227	ZENER, 5.1B	R
D203	06200351	1N4148	R
D204	06220227	ZENER, 5.1B	R
D600	06220270	ZENER, 11B	R
D601	06220205	KDS1555	R
D602	06200266	RGP10G	R
D603	06220227	ZENER, 5.1B	R
D604	06220274	ZENER, 6.2B	R

REF. NO.	PART NO.	DESCRIPTION	REMARK
D701	06220235	ZENER, Z11BL	R
D702	06200167	1S2471	R
D703	06200480	1N4935	R
D704	06200480	1N4935	R
D705	06200480	1N4935	R
D706	06200266	RGP10G	R
D707	06200266	RGP10G	R
D708	06200375	RG4A(SANKEN)	R
D709	06200370	RU4DS(SANKEN)	R
D710	06200480	1N4935	R
D711	06200306	ZENER, 9.1B 0.5W	R
D712	06200480	1N4935	R
D901	06200222	RB-156	R
D902	06200291	1N4933GP	R
D903	06200291	1N4933GP	R
Δ D904	06200487	EGP20D	R
Δ D905	06200319	EIF 1500V 0.5A	R
D906	06200266	RGP10G	R
D907	06200487	EGP20D	R
D908	06200487	EGP20D	R
D909	06200487	EGP20D	R
D910	06200389	RU2AM	R
D911	06200389	RU2AM	R
D912	06220069	1N4002	R
Δ D913	06200487	EGP20D	R
TR			
Q201	06120309	DTC114ES	R
Q202	06120309	DTC114ES	R
Q203	06120240	KTC1815-Y	R
Q204	06120240	KTC1815-Y	R
Q601	06120252	KTA1015-O	R
Q602	06120240	KTC1815-Y	R
Q603	06100095	KTA562TM-Y	R
Q604	06179461	KTC1959-Y	R
Q605	06120238	KTC2229-Y	R
Q606	06120240	KTC1815-Y	R
Q607	06100095	KTA562TM-Y	R
Q608	06120240	KTC1815-Y	R
Q701	06120240	KTC1815-Y	R
Q702	06170006	KTC200-Y	R
Q703	06100095	KTA562TM-Y	R
Q704	06100075	KTA473-Y	R
Q705	06150047	MJE9780	R
Q706	06120238	KTC2229-Y	R
Δ Q707	06130065	2SC4124(2SD1849)	R
Q708	06179461	KTC1959-Y	R
Q709	06100095	KTA562TM-Y	R
Q710	06120240	KTC1815-Y	R
Q901	06120175	KTC2120-Y	R
IC			
IC201	06300283	GC601702S	S
IC202	06300624	GD74LS86	R
IC203	06300568	GD74LS07	R

PRODUCT SAFETY NOTE: Components marked (Δ) have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this service manual. Don't degrade the safety of the receiver improper servicing.

REF. NO.	PART NO.	DESCRIPTION	REMARK
IC601	06300260	GD4053B	R
IC602	06300554	GD4052B	R
Δ IC603	06300799	LA7837(SANYO)	R
IC701	06300554	GD4852B	R
Δ IC702	06300256	LA7851	R
IC703	06300565	GL358	R
Δ IC901	06300582	STR53041	R
IC902	06300218	GL7812	R

COIL & TRANS

L701	150-518E	COIL, CHOKE	S
L702	150-468R	COIL, LINEARITY	S
L703	150-539F	COIL, H-CENTERING	S
L901	150-354A	COIL, LINE FILTER	S
L902	150-509A	COIL, LINE FILTER	S
L903	150-425H	DEGAUSSING COIL	S
L904	150-235F	COIL, CHOKE 25uH	S
L905	150-235F	COIL, CHOKE 25uH	S
L906	150-235F	COIL, CHOKE 25uH	S
Δ T701	151-269A	TRANS, H-DRIVE	S
Δ T702	154-185A	FBT	S
Δ T901	151-135B	TRANS, PULSE	S
Δ T902	151-137A	TRANS, SMPS	S

MISCELLANEOUS

X201	156-001C	CRYSTAL, 3.58MHz	S
Δ F901	131-036D	FUSE, 2.5A/125V	S
Δ TH901	163-016A	PTH451C263BG8ROM140	S
P201	387-573S	MAIN TO VIDEO 12P	S
P701	366-921G	PIN, WAFER IL-G8	S
P902	366-059A	PIN, MOLEX 5096-02C	S
P904	366-043B	PIN, PLUG (2P)	S
P905	366-043A	PIN, PLUG (1P)	S
	111-D11A	PCB, MAIN	S

2. VIDEO BOARD

RESISTORS

R301	01165070	RD, 75 ohm 1/6W	R
R302	01165070	RD, 75 ohm 1/6W	R
R303	01165070	RD, 75 ohm 1/6W	R
R304	01165095	RD, 820 ohm 1/6W	R
R305	01165095	RD, 820 ohm 1/6W	R
R306	01165095	RD, 820 ohm 1/6W	R
R307	01165121	RD, 10K ohm 1/6W	R
R308	01165121	RD, 10K ohm 1/6W	R
R309	01165121	RD, 10K ohm 1/6W	R
R310	01165099	RD, 1.2K ohm 1/6W	R
R311	01165097	RD, 1K ohm 1/6W	R
R312	01165103	RD, 1.8K ohm 1/6W	R
R313	01165119	RD, 8.2K ohm 1/6W	R
R314	01165103	RD, 1.8K ohm 1/6W	R
R315	01165045	RD, 6.8 ohm 1/6W	R
R316	01165115	RD, 5.6K ohm 1/6W	R
R317	01165093	RD, 680 ohm 1/6W	R
R318	01165066	RD, 51 ohm 1/6W	R
R319	01165081	RD, 220 ohm 1/6W	R
R320	01165087	RD, 390 ohm 1/6W	R

REF. NO.	PART NO.	DESCRIPTION	REMARK
R321	01165059	RD, 27 ohm 1/6W	R
R322	01165081	RD, 220 ohm 1/6W	R
R323	01165087	RD, 390 ohm 1/6W	R
R324	01165059	RD, 27 ohm 1/6W	R
R325	01165081	RD, 220 ohm 1/6W	R
R326	01165087	RD, 390 ohm 1/6W	R
R327	01165081	RD, 220 ohm 1/6W	R
R328	01335107	RS, 2.7K ohm 2W	R
R329	01335107	RS, 2.7K ohm 2W	R
R330	180-180C	RF, 27 ohm 1/2W	S
R331	180-180C	RF, 27 ohm 1/2W	S
R332	01165101	RD, 1.5K ohm 1/6W	R
R333	01165073	RD, 100 ohm 1/6W	R
R334	01165075	RD, 120 ohm 1/6W	R
R335	01335107	RS, 2.7K ohm 2W	R
R336	01335107	RS, 2.7K ohm 2W	R
R337	180-180C	RF, 27 ohm 1/2W	S
R338	180-180C	RF, 27 ohm 1/2W	S
R339	01165096	RD, 910 ohm 1/6W	R
R340	01165073	RD, 100 ohm 1/6W	R
R341	01165075	RD, 120 ohm 1/6W	R
R342	01335107	RS, 2.7K ohm 2W	R
R343	01335107	RS, 2.7K ohm 2W	R
R344	180-180C	RF, 27 ohm 1/2W	S
R345	180-180C	RF, 27 ohm 1/2W	S
R346	01165089	RD, 470 ohm 1/6W	R
R347	01165073	RD, 100 ohm 1/6W	R
R348	01165075	RD, 120 ohm 1/6W	R
R349	01165119	RD, 8.2K ohm 1/6W	R
R350	01165103	RD, 1.8K ohm 1/6W	R
R351	01165153	RD, 220K ohm 1/6W	R
R352	01165153	RD, 220K ohm 1/6W	R
R353	01165153	RD, 220K ohm 1/6W	R
R354	01165081	RD, 220 ohm 1/6W	R
R355	01165081	RD, 220 ohm 1/6W	R
R356	01165081	RD, 220 ohm 1/6W	R
R357	01154067	RD, 56 ohm 1/2W	R
R358	01154067	RD, 56 ohm 1/2W	R
R359	01154067	RD, 56 ohm 1/2W	R
R360	01157139	RD, 56K ohm 1/4W	R
R361	01165167	RD, 820K ohm 1/6W	R
R362	01154077	RD, 150 ohm 1/2W	R
R363	01165061	RD, 33 ohm 1/6W	R
R364	01165061	RD, 33 ohm 1/6W	R
R365	01165061	RD, 33 ohm 1/6W	R

CAPACITORS

C301	08110313	CE, 10uF/16V	R
C302	08110313	CE, 10uF/16V	R
C303	08110313	CE, 10uF/16V	R
C304	08110313	CE, 10uF/16V	R
C305	08200978	CK, 0.1uF/50V	R
C306	08200978	CK, 0.1uF/50V	R
C307	08200978	CK, 0.1uF/50V	R
C308	08200973	CK, 0.022uF/50V	R

PRODUCT SAFETY NOTE: Components marked (Δ) have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this service manual. Don't degrade the safety of the receiver improper, servicing.

REF. NO.	PART NO.	DESCRIPTION	REMARK
C309	08200978	CK. 0.1uF/50V	R
C310	08200978	CK. 0.1uF/50V	R
C311	08200978	CK. 0.1uF/50V	R
C312	08110511	CE. 4.7uF/50V	R
C313	08110511	CE. 4.7uF/50V	R
C314	08300144	CC. 220pF/50V	R
C315	08110321	CE. 220uF/16V	R
C316	08110511	CE. 4.7uF/50V	R
C317	08110221	CE. 220uF/10V	R
C318	08300130	CC. 56pF/50V	R
C319	08200978	CK. 0.1uF/50V	R
C320	08300130	CC. 56pF/50V	R
C321	08200978	CK. 0.1uF/50V	R
C322	08300114	CC. 12pF/50V	R
C323	08200978	CK. 0.1uF/50V	R
C324	08110607	CE. 1uF/100V	R
C325	08300152	CC. 470pF/50V	R
C326	08110613	CE. 10uF/100V	R
C327	08110709	CE. 2.2uF/160V	R
C329	08110607	CE. 1uF/100V	R
C330	08110607	CE. 1uF/100V	R
C331	08110607	CE. 1uF/100V	R
C332	02211064	CK. 2200pF/500V	R
C333	02213172	CK. 0.01uF/1000V	R
C334	08200978	CK. 0.1uF/50V	R
C335	08200978	CK. 0.1uF/50V	R

DIODE

D301	06200167	1S2471	R
D302	06200167	1S2471	R
D303	06200351	1N4148	R
D304	06200351	1N4148	R
D305	06200351	1N4148	R
D306	06200351	1N4148	R
D307	06200351	1N4148	R
D308	06200351	1N4148	R
D309	06200167	1S2471	R
D310	06200167	1S2471	R
D311	06200167	1S2471	R
D312	06200351	1N4148	R
D313	06200351	1N4148	R
D314	06200351	1N4148	R
D315	06200351	1N4148	R
D316	06200351	1N4148	R
D317	06200351	1N4148	R
D318	06220241	ZENER 24V	R

TR

Q301	06120240	KTC1815-Y	R
Q302	06120277	2SC3953	R
Q303	06150058	2N3904	R
Q304	06130124	2SC3467	R
Q305	06120343	2SA1370	R
Q306	06120277	2SC3953	R

REF. NO.	PART NO.	DESCRIPTION	REMARK
Q307	06150058	2N3904	R
Q308	06130124	2SC3467	R
Q309	06120343	2SA1370	R
Q310	06120277	2SC3953	R
Q311	06150058	2N3904	R
Q312	06130124	2SC3467	R
Q313	06120343	2SA1370	R
Q314	06120218	KTC2482	R

VR

VR301	180-098S	SEMIFIX, SR-29R 100B	S
VR302	180-098S	SEMIFIX, SR-29R 100B	S
VR303	180-376G	SEMIFIX, 2.2KB	S
VR304	180-376G	SEMIFIX, 2.2KB	S
VR305	180-376G	SEMIFIX, 2.2KB	S

COIL

L301	125-022C	FERRITE	R
L302	125-022C	FERRITE	R
L303	125-022C	FERRITE	R
L304	125-022C	FERRITE	R
L305	04011033	COIL, PEAKING 4.7uH	R
L306	04011025	COIL, PEAKING 2.2uH	R
L307	04011029	COIL, PEAKING 3.3uH	R
L308	04011029	COIL, PEAKING 3.3uH	R
L309	04011033	COIL, PEAKING 4.7uH	R
L310	04011025	COIL, PEAKING 2.2uH	R
L311	125-022C	FERRITE	R
L312	125-022C	FERRITE	R
L313	125-022C	FERRITE	R
L314	125-022C	FERRITE	R
L315	125-022C	FERRITE	R

IC

IC301	06300731	LM1203	R
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MISCELLANEOUS

SG301	165-010A	SPARK, DSP-301N-C04R	S
SG302	165-010A	SPARK, DSP-301N-C04R	S
SG303	165-010A	SPARK, DSP-301N-C04R	S
SG304	165-010A	SPARK, DSP-301N-C04R	S
SG305	165-004A	SPARK, AG20PT	S
P301	366-921L	WAFER IL-G12	S
P302	366-039J	MOLEX 5045-10A	S
P303	366-043B	ASS'Y PLUG 2P	S
	111-D58A	PCB, VIDEO	S

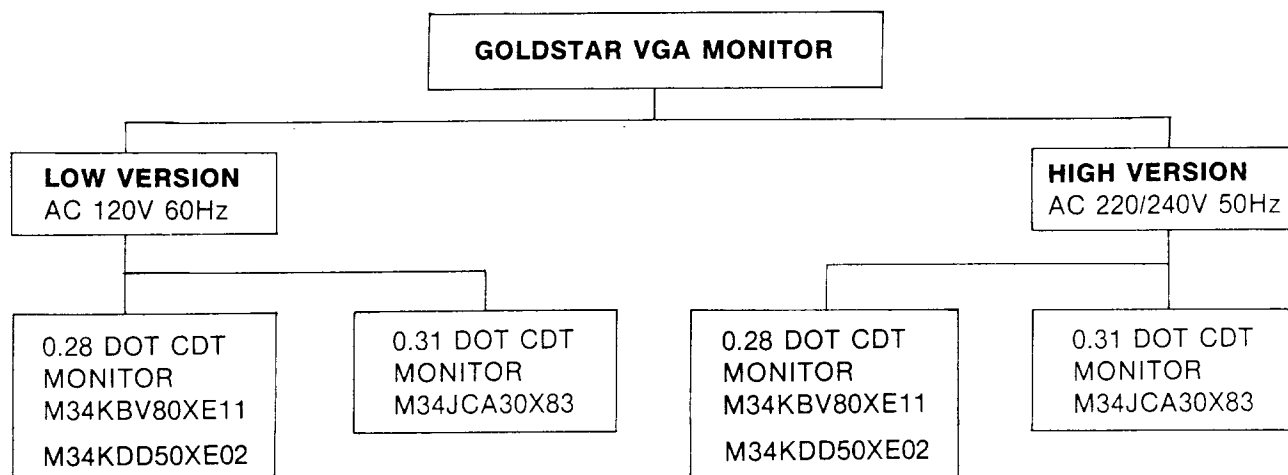
3. CONTROL BOARD

VR709	180-186A	VR, 10KB	S
VR710	180-186F	VR, 250KB	S
D501	06200485	LED, GREEN KLG73L	R
	111-D26C	PCB, CONTROL	S

4. MISCELLANEOUS

Δ	112-816A	M34KBV80XE11, CDT	S
Δ	170-612C	CPT EARTH	S
Δ	174-120N	POWER CORD (174-120P)	S
Δ	387-972A	SIGNAL CABLE	S

CLASSIFICATION OF VGA MONITOR



COMPARISON OF PARTS LIST

If you try to repair your monitor, look on the ID label of the minitor, you must insert the correct part in accordance with LOW VERSION or HIGH VERSION MONITOR. 0.28 DOT CDT or 0.31 DOT CDT MONITOR. The replacement parts list are as follows:

MAIN BOARD

1. POWER PARTS

REF NO.	LOW VERSION		HIGH VERSION	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
	174-120N	POWER CORD (174-120P)	174-108A	POWER CORD
C901	181-278A	0.1uF/125V X-CAP	181-217C	0.47uF/250V X-CAP
C904	181-278A	0.1uF/125V X-CAP	181-217C	0.47uF/250V X-CAP
C905	181-124E	CE, 470uF/200V	181-124R	CE, 220uF/400V
C906	08110611	CE, 4.7uF/100V	02140615	CE, 22uF/100V
C909	181-060N	PP, 0.033uF/400V	181-061N	PP, 0.039uF/630V
C910	02201352	CK, 470pF/1KV	02201336	CK, 100pF/1KV
C929	NONE	NONE	08201052	CK, 470pF/500V
C932	NONE	NONE	181-192C	0.33uF/250V X-CAP
F901	131-036D	FUSE, 2.5A/125V	131-082A	FUSE, 2A/250V
IC901	06300582	STR 53041	06300512	STR 58041
L901	150-354A	LINE FILTER	150-494E	LINE FILTER
L903	150-425H	DEGAUSSING COIL	150-425K	DEGAUSSING COIL
P903	971-0016	JUMP WIRE	366-059A	PIN, MOLEX 5096-02C
R724	01332059	RS, 27 ohm 1W	01335061	RS, 33 ohm 2W
R901	01154155	RD, 270K ohm/0.5W	01154153	RD, 220K ohm/0.5W
R902	180-104B	RWR, 2.2 ohm/7W	180-104F	RWR, 4.7 ohm/7W
R903	01154149	RD, 150K ohm 1/2W	01154155	RD, 270K ohm 1/2W
R904	01154147	RD, 120K ohm 1/2W	01154155	RD, 270K ohm 1/2W
R905	01154061	RD, 33 ohm 1/2W	01154063	RD, 39 ohm 1/2W
R907	01154025	RD, 1 ohm 1/2W	01516029	RN, 1.5 ohm 1/2W
R908	01154025	RD, 1 ohm 1/2W	01516029	RN, 1.5 ohm 1/2W
R924	01154055	RD, 18 ohm 1/2W	01154073	RD, 100 ohm 1/2W
R925	01154059	RD, 27 ohm 1/2W	01154063	RD, 39 ohm 1/2W
R926	971-0016	JUMP WIRE	01154153	RD, 220K ohm/0.5W
R930	NONE	NONE	01165084	RD, 300 ohm 1/6W
S901	140-075G	SWITCH SDL-1P UL/CSA	140-261A	SWITCH ESB90 DPST
T902	151-137A	SMPS TRANS (151-137B)	151-137C	SMPS TRANS(151-137D)
TH901	163-016A	PTH451C263BG8ROM140	163-035C	PTH451C262BG180N270

2. DEFLECTION PARTS

REF NO.	0.28 DOT CDT		0.31 DOT CDT	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
C722	181-353P	MPP, 0.0051uF/1600V	181-131L	MPP, 0.0062uF/1600V
CDT	112-816A	M34KBV80XE11	112-819A	M34JCA30X83
L702	150-468R	H-LINEARITY COIL	150-468U	H-LINEARITY COIL
PCB	111-D26C	PCB, CONTROL	111-D26A	PCB, CONTROL
R612	01165134	RD, 36K ohm 1/6W	01165133	RD, 33K ohm 1/6W
R620	01165131	RD, 27K ohm 1/6W	01165130	RD, 24K ohm 1/6W
R621	01154029	RD, 1.5 ohm 1/2W	01154025	RD, 1 ohm 1/2W
R633	01154082	RD, 240 ohm 1/2W	01154079	RD, 180 ohm 1/2W
R638	01165119	RD, 8.2K ohm 1/6W	01165125	RD, 15K ohm 1/6W
R701	01165125	RD, 15K ohm 1/6W	01165129	RD, 22K ohm 1/6W
R727	01165125	RD, 15K ohm 1/6W	01165129	RD, 22K ohm 1/6W
R733	01165103	RD, 1.8K ohm 1/6W	01165095	RD, 820 ohm 1/6W
R736	01165136	RD, 43K ohm 1/6W	01165138	RD, 51K ohm 1/6W
R749	01165153	RD, 220K ohm 1/6W	01157155	RD, 270K ohm 1/4W
R927	180-140S	RF, 0.47 ohm 2W	01521013	RN, 0.33 ohm 1W
T702	154-185A	FBT, MSU1FGV19(MURATA)	154-203A	FBT, P2435333(HITACHI)
VR604	180-191Q	SEMI-FIX, SR-19R 20KB	971-0016	JUMP WIRE
VR608	180-192N	SEMI-FIX, SR-29R 10KB	01165087	RD, 390 ohm 1/6W (R3)
VR703	180-192S	SEMI-FIX, SR-29R 50KB	01165138	RD, 12K ohm 1/6W(R1)
VR706	180-192L	SEMI-FIX, SR-19R 5KB	01165099	RD, 1.2K ohm 1/6W(R2)
VR710	180-186F	VR, 250KB (CQ430)	180-185B	VR, 250KE (CQ430)

None mentioned parts are the same as 0.28 DOT CDT parts in 0.28 DOT CDT MONITOR.

3. VIDEO BOARD

LOW VERSION 0.31 DOT CDT, HIGH VERSION 0.31 DOT CDT MONITOR ARE SAME AS LOW VERSION 0.28 DOT CDT MONITOR ON THE SCHEMATIC DIAGRAM.