TE 772B Color Monitor

Service Manual

東元資訊股份有限公司

TECO INFORMATION SYSTEMS CO., LTD.

CONTENTS

General Features

The monitor is equipped with the following general features:

- Flicker-free high resolution color monitor.

- Horizontal scanning frequencies from 30 KHz to 72KHz
  (using automatic scanning method).

- Vertical scanning frequencies from 50Hz to 120Hz
  (using automatic scanning method).

- Microprocessor-based design with digital controls and OSD display.
  (memory for timing modes)

- 10 Presetting and 10 user programmable modes.

- Compatible with standard IBM VGA, 8514A, XGA, Super VGA modes as well as newly proposed VESA ergonomic standards.

- A 17-inch digital display and a 0.28mm dot pitch display.

- Horizontal resolution: 1280 dots
  Vertical resolution: 1024 lines

- Analog signal inputs to display unlimited number of colors depending on video signal input.

- Universal auto-switched power supply.

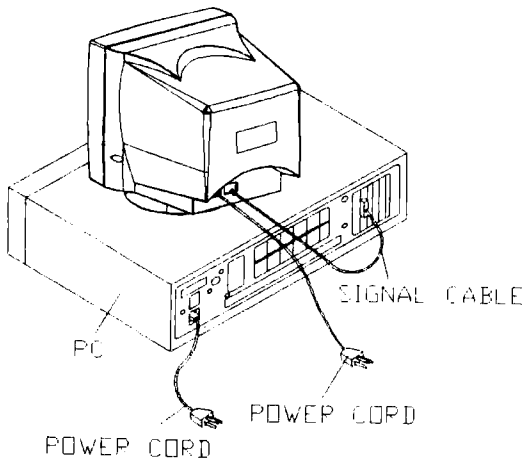
- 15-pin D-sub connector .

- Removable tilt-swivel base
  Tilt:15 degrees
  Swivel: 90 degrees

- VESA-standard power management and DDC 1/2B.

Monitor Connection

Figure 1:
Connecting
the Monitor

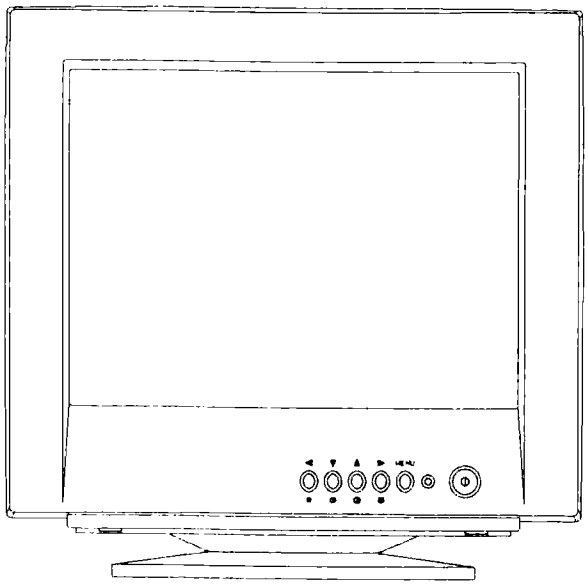


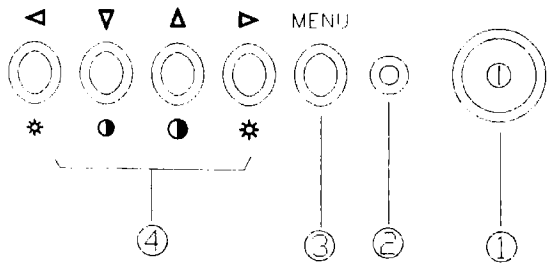
1 Working with PC

Connect the signal cable (from the monitor) to the D-connector on the back of PC. See Figure1 as shown above.

2 Connect the power cord to the specified outlet, and turn on the power switches of both PC and monitor. Then the picture will be displayed on the CRT screen. Within about 30 seconds adjust the picture with related adjust controls to obtain optimum picture.

Operation and User Adjustment





Control Panel

Figure 2 shows the position of following operating units:

①Power ON / OFF Switch **② Power LED**

③ Menu – Displays OSD menu & Scrolls through OSD menu

④ Function Control Key – Adjust level of selected items

On-Screen Display Guide

I. Contrast & Brightness

1) Press "▲" "▼" to activate and make the contrast adjustment shown by the OSD bar. The bar moves rightward indicating contrast increase and leftward indicating contrast decrease.

Figure5 Contrast Adjustment Bar

2) Press "◀" "▶" to activate and make the brightness adjustment shown by the OSD bar. The bar moves rightward indicating brightness increase and leftward indicating brightness decrease.

Figure6 Brightness Adjustment Bar

II. OSD Function Menu

1) Press "Menu" key to enter the OSD menu containing 10 functions as shown in figure 7.

2) Select adjustment function

Please scroll the preferred function from left-right sequence by pressing "Menu" key. You may return to the previous item by keeping pressing the "Menu" key.

3) Adjustment Operation

Make the adjustment using the four function control keys. Please refer to the Figure 7 for advanced operation.

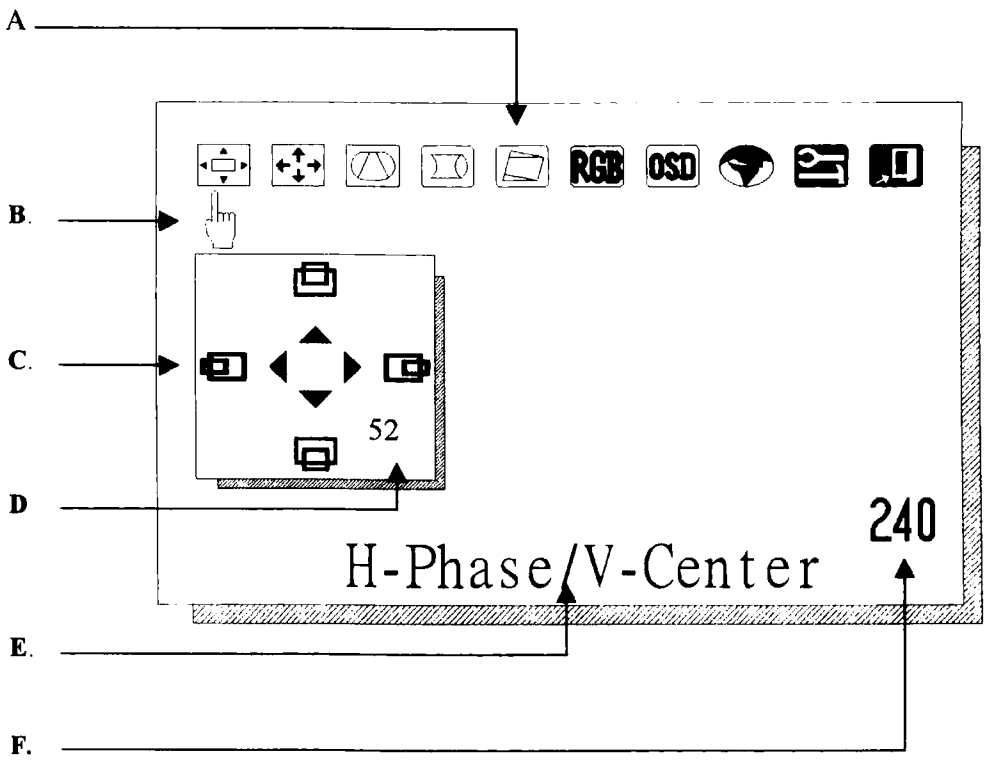


Figure 7 Function Menu

A. OSD contains 10 icons representing the following function adjustments: H-Phase/V-Center, H-Size/V-Size, Pincushion/Trapezoid, PinBalance/Corner, Parallel/Tilt, RGB-Gain, OSD Position, Language, Tool, and Exit.

B. Hand-shaped pointer indicates the current function selected.

C. There are four adjustments for each function selected. The icon being selected will turn into a different color.

D. The setting value will appear during adjustment.

E. Displaying the message of current function selected.

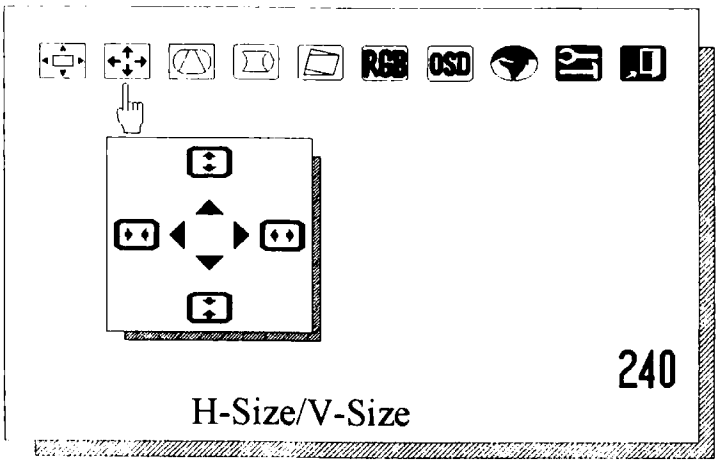
F. The number in the right corner indicates how long the OSD will last for displaying.

① **H-Phase & V-Center function window**

Press ◂ or ▸ key to reposition the picture leftward or rightward.
Press ▲ or ▼ key to reposition the picture upward or downward.

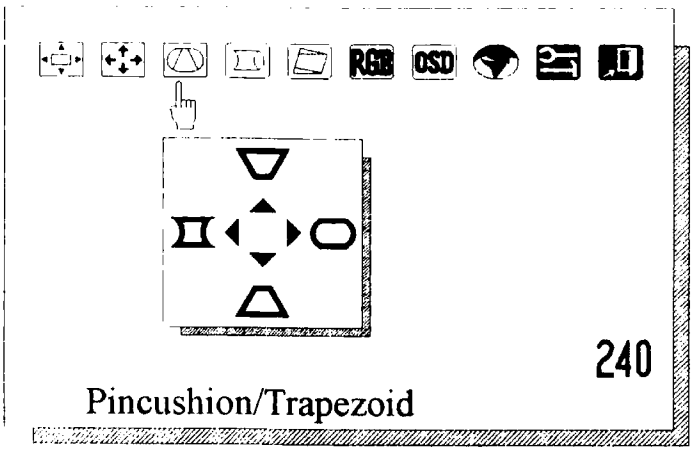
(Please refer to the figure 7)

② **H-size & V-size function window**



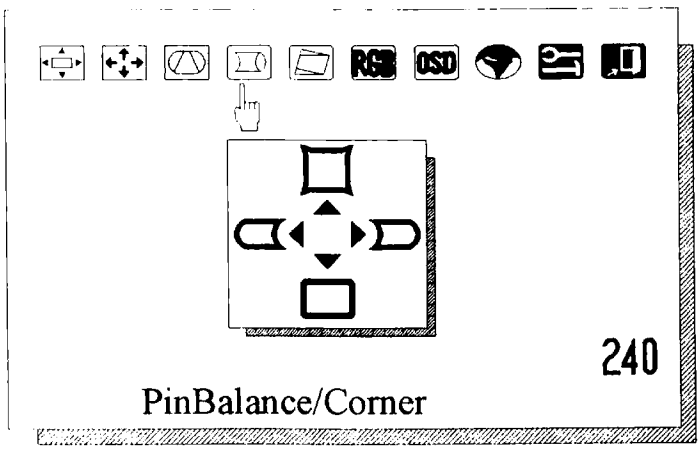
Press ◂ key to reduce the H-size and press ▸ key to enlarge the H-size.
Press ▲ to enlarge the V-size and press ▼ key to reduce the V-size.

③ **Pincushion & Trapezoid function window**



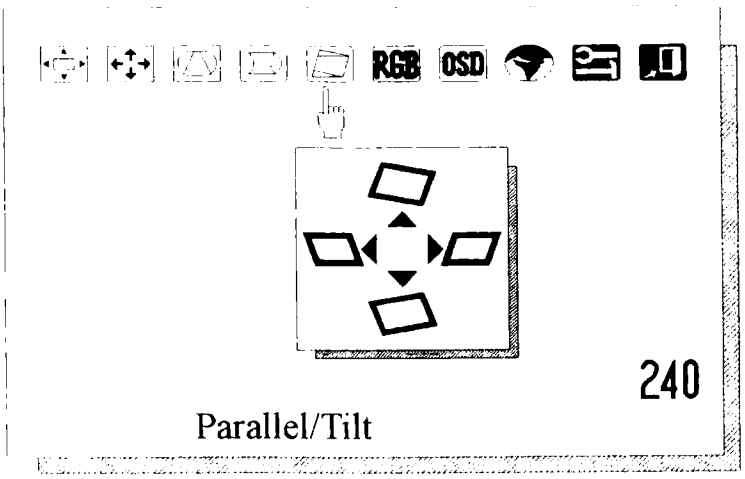
Press key ◂ and ▸ on the control panel to alter pincushion and barrel according to your personal needs.
Press key ▲ and ▼ on the control panel to alter trapezoid according to your personal needs.

④ **Pin - Balance & Corner function window**



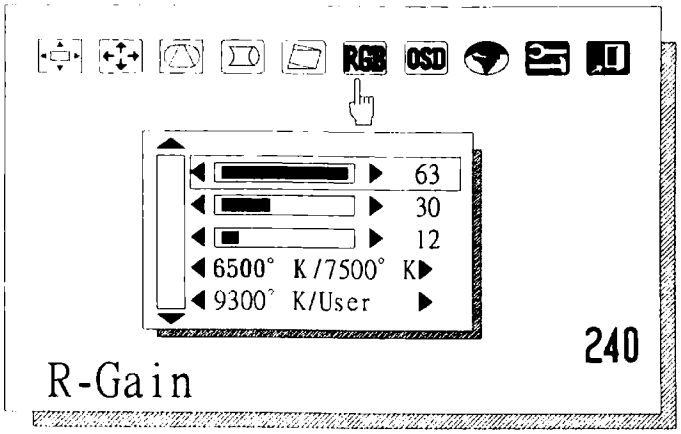
Press " ◀ " and " ▶ " to adjust pin balance .
Press " ▼ " and " ▲ " to adjust corner distortion.

⑤ **Parallelogram & Tilt function window**



Press " ◀ " and " ▶ " to adjust parallelogram .
Press " ▼ " and " ▲ " to adjust tilt.

⑥ **RGB Color Temperature function window.**



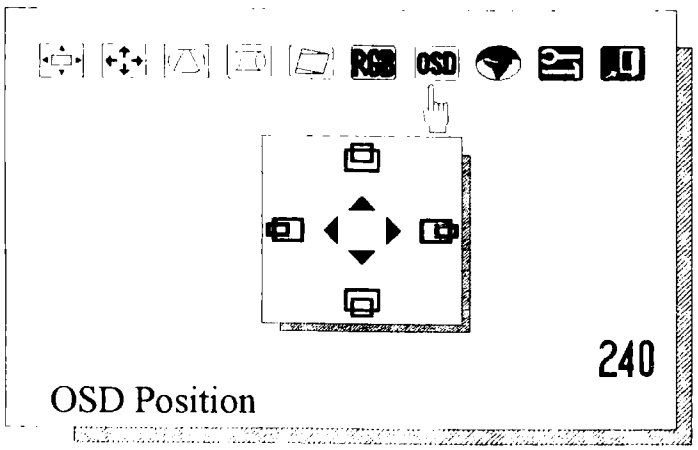
RGB Value Setting

The current setting of the color temperature is presented in purple. Press ▲ ▼ key to move the black bar up or down to your desired item. There are three factory settings available for selection: 6500° K , 7500° K, and 9300° K. For personal preference, you may directly adjust the RGB values separately either in the User's mode or in 6500° K, 7500° K, and 9300° K mode. The values will be stored in the User's mode after leaving the user's function window.

Note

If you previously set 6500° K, 7500° K, or 9300° K to be stored in the User's mode, then the OSD will display these three default settings instead of the User's mode as moving the black bar to select the User's mode .

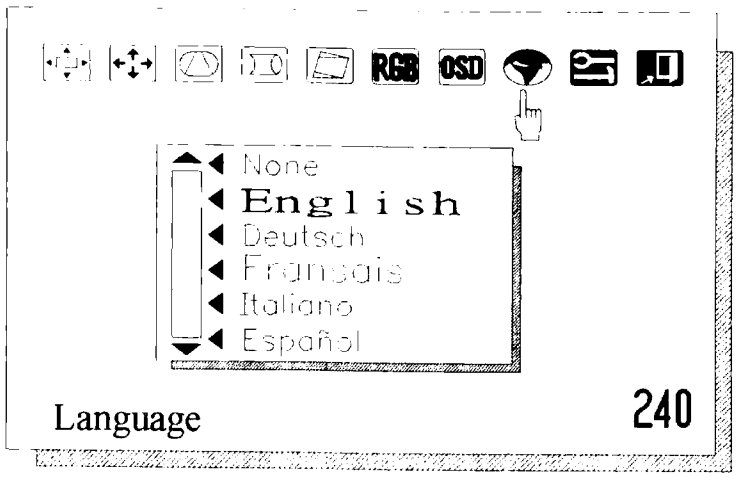
⑦ **OSD position function window.**



You may reposition OSD according to personal needs.

Press ◀ ▼ ▲ or ▶ to move OSD.

⑧ **Language function window**

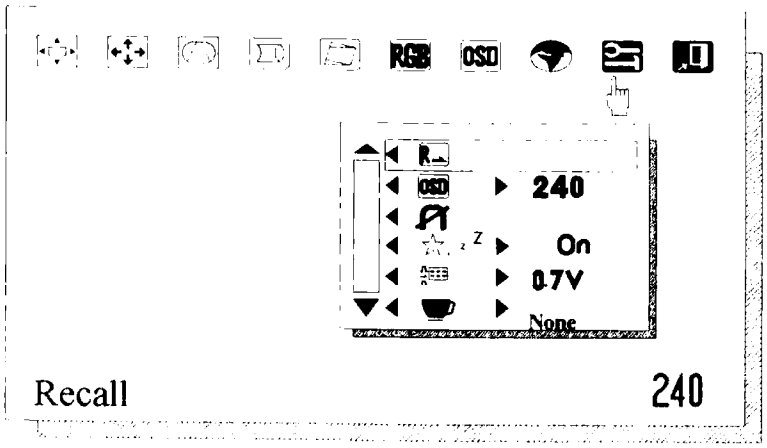


Press "▼" and "▲" to select your desired language, and then the OSD menu will be presented in the language selected.

Note

No message will be displayed if you select "None".

⑨Tools function window.



Recall factory setting if monitor H-V frequency is in preset mode including Phase, Size, and Pincushion/Key-stone.

Adjust OSD countdown timer whose duration ranges from 5 to 240 seconds.

Activate the degauss function of CRT.

Enable or disable power saving .

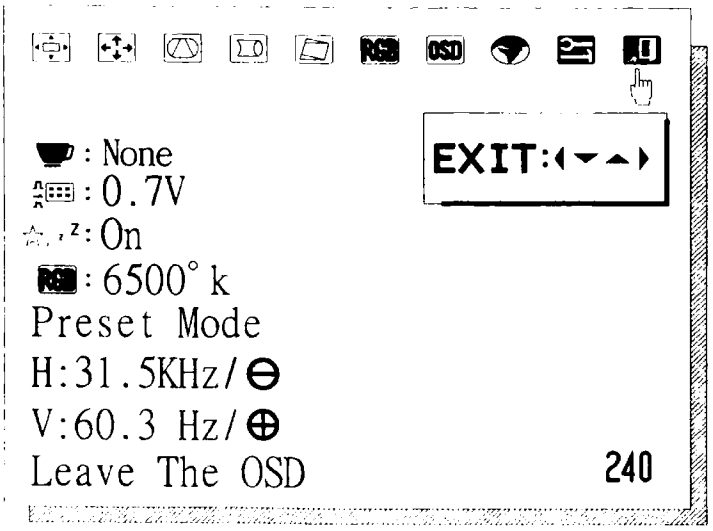
Select the video input level.

Adjust tea time whose duration ranges from 0 to 255 minutes

Note

1. The icon, a cup of coffee, will appear to remind you to take a break.
2. The duration for displaying tea time is about 20 seconds. You may also set the duration for displaying tea time according to personal needs. To terminate displaying tea time, please press any one of the keys or set the duration to None.

⑩ **Exit OSD menu function window.**



The information of current settings such as tea time, video input level, power saving , color temperature , current horizontal / vertical frequency and polarity will be displayed.

Note

If the signal cable is not connected to the PC, then the screen will display the Color Bar Pattern.

Specifaicaions

1. Mechanical Description

1-1 Dimensions

Height : 428 mm

Width : 405 mm

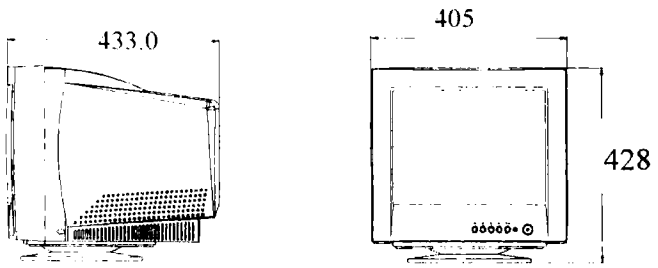
Depth : 433 mm

Weight : 16Kg (max.)

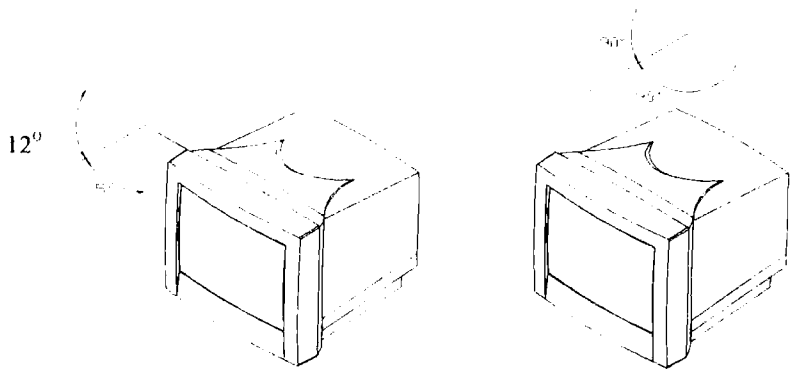
Picture Tube : 17" diagonal , 90^0 deflection

0.28mm trios dot pitch, SS-DY

1-2 Dimension Drawings



1-3 Tilt and Swivel Adjustment



2. Environment

2-1 Operating Ambient Temperature, Humidity and Altitude

Temperature : 0^0 C ~ 35^0 C

Humidity : 10% ~ 90%

Altitude : 10,000FT (max.)

2-2 Storage Ambient Temperature, Humidity and Altitude

Temperature : 10^0 C ~ 60^0 C

Humidity : 10% ~ 90%

Altitude : 30,000FT (max.)10.000m

2-3 Shipping Ambient Temperature, Humidity and Altitude

Temperature : -20^0 C ~ 60^0 C

Humidity : 10% ~ 90% (without condense)

3. Vibration and Shock : Package Condition

3-1 Vibration

Frequency: 5Hz ~ 100Hz ~ 5Hz

Acceleration: 1.2G

X-axis, Y-axis, Z-axis : 20 minutes each

3-2 Shock

45 cm high, one corner, three edges, and six sides.

4. Electronic Performance

4-1 Power Supply

Input Voltage: 100 VAC ~ 240 VAC (Universal)

Input Frequency: 50±3 Hz / 60±3Hz

Power: 120W under the normal condition

Inrush Current: 42A0-p (max.) at AC 240V

4-2 Sync.

Separate Sync. TTL level: horizontal sync. (positive / negative)

vertical sync. (positive / negative)

compound Sync. is compatible.

4-3 Video

Input Connector: 15-pin D-sub connector

Signal Level: analog 0.7 Vp-p

Polarity: positive

Display Color: unlimited colors

Video Pix Rate: 110 MHz (pixel)

4-4 Power Management

PMS standard complies with VESA, EPA and NUTEK.

On-state: Green indicator is lit.

Stand-by state: H-sync. Is off and Orange indicator is lit.

Suspend state: V-sync. Is off (less than 15W) and Orange indicator is lit.

Off state: H/V sync. Is off (less than 8W) and Orange indicator flashes.

5 General Definition and Test Condition

Unless otherwise specified, all QA tests to verify specification must be performed under standard operating condition as follows:

5-1 Test Signals

A. Video Generators

CHROMA 2000 or equivalent

B. Timing

See Input Signal Timing

C. Video Mode

VGA text mode

5-2 Warm-up Time

Minimum 30 minutes after power switch on with specified power line voltage and signal applied.

5-3 Direction

A The CRT face should face to east for northern hemisphere usage.

B The unit for southern hemisphere usage should be tested under simulated or actual magnetic fields of southern hemisphere , and the CRT face should face to east.

5-4 Ambient Lighting Environment is 400 to 600 Lux.

5-5 Ambient Magnetic

No special ambient magnetic field exits.

(The AC leakage flux or DC flux causes transformer magnet or the like).

5-6 Ambient Temperature

20 ± 10^{0} C

Less than 2 degrees C fluctuations are allowed during test.

5-7 Inspect Equipment

A Customer Graticule

B MINOLTA TV2130 Color Analyzer or equivalent

C KLEIN convergence error measurement gauge CM7AG

D Microscope 10X

6 Screen Display & Performance Specification

6-1 Image Character Area

Horizontal :306 mm + / - 5 mm

Vertical : 230 mm +/ - 5 mm

6-2 Image Positions

Adjust the picture to the center of screen.

The image position is within the area as shown in Figure 3.

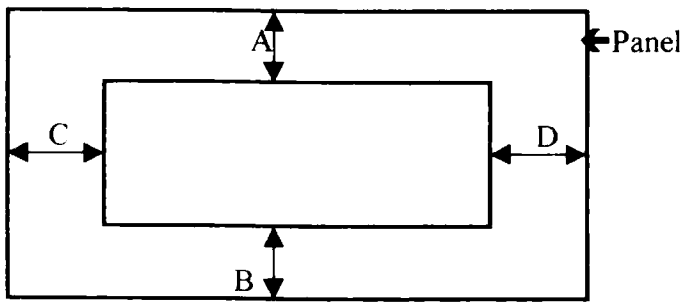


Figure 3

$|A-B| \leq 4$ mm $|C-D| \leq 4$ mm

(under the normal condition)

6-3 Distortion

A. Pincushion & Barrel (Refer to Figure 4)(Test pattern: Cross-Hatch)

A-1. Pincushion

Upper (a) : less than 2 mm

Lower (b) : less than 2 mm

Right (c): less than 2 mm

Left (d): less than 2 mm

A-2.Barrel

Upper (a') : less than 1 mm

Lower (b'): less than 1 mm

Right (c'): less than 1 mm

Left (d): less than 1 mm

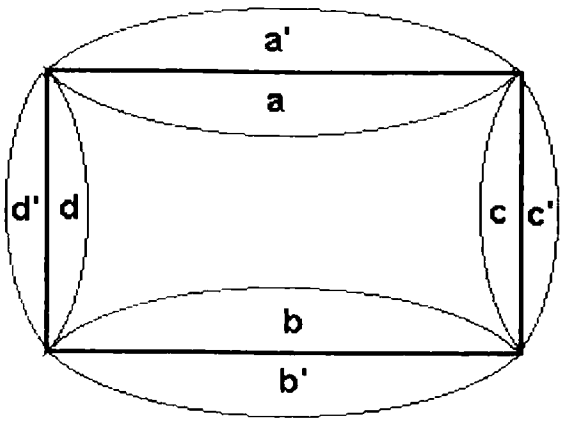
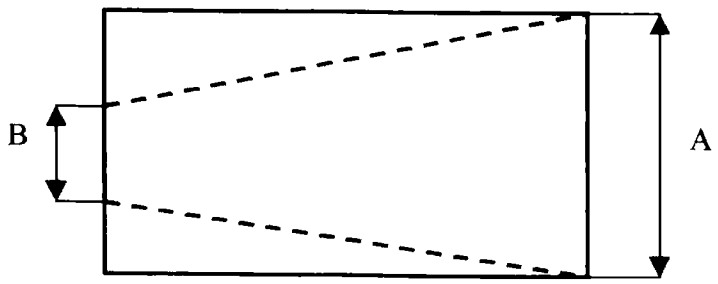


Figure 4

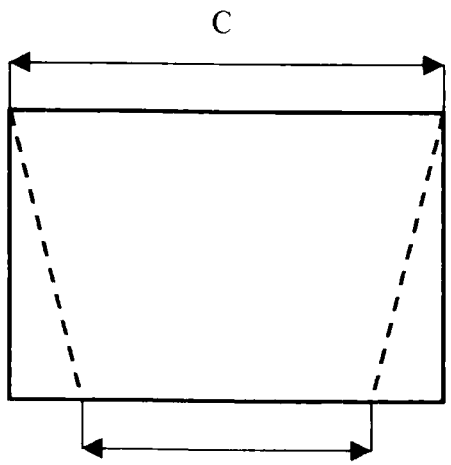
B. Rectangularity & Parallelogram Distortion (Test pattern: Cross-Hatch)

Edge of the image is within area indicated by the dotted lime as shown in Figure 5a & Figure 5b.



$$| \text{A-B} | \leq 2.0\text{mm}$$

Figure 5a Rectangularity



$$|\text{C- D}| \leq 2.0\text{ mm}$$

Figure 5b Parallelogram

C. Linearity

Witch cross- hatch pattern , horizontal and vertical linearity should less than 10%. The brightness is set 10FtL witch full pattern.

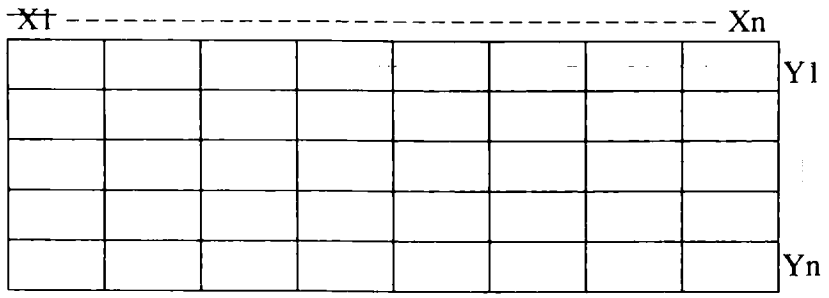


Figure 6

Horizontal Linearity

$$\left| \frac{Xmax - Xmin}{Xmax + Xmin} \right| \times 100\% \leq 5\%$$

Vertical Linearity

$$\left| \frac{Ymax - Ymin}{Ymax + Ymin} \right| \times 100\% \leq 5\%$$

Note: Maximum and minimum values should not be adjacent each other.

X max. is maximum value among X1~Xn.

X min is minimum value among X1~Xn.

Y min is maximum value among Y1~Yn.

Y min is minimum value among Y1~Yn.

Xave is average.

Xx is each dimension .

Y ave is average.

Yx is each dimension.

D. Rotation

Horizontal center line of the image should be within the shade area as in Figure 7 .

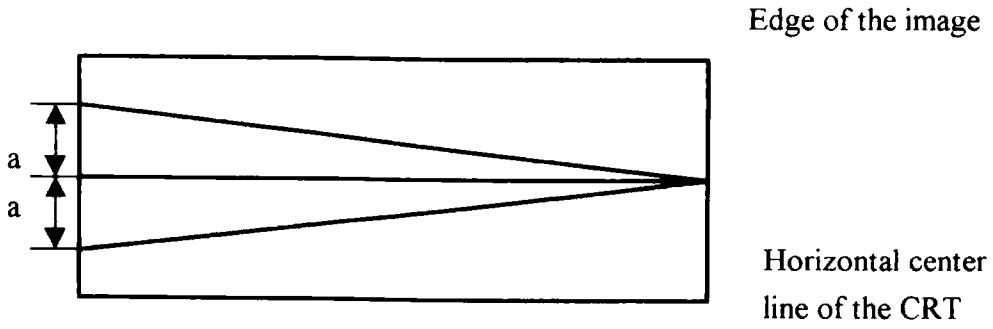


Figure 7

a.....1 Character

Input Signal .....Cross-Hatch, Green

Notes: 1. It should measured under the following terrestrial magnetic fields.

(1)without horizontal magnetic field

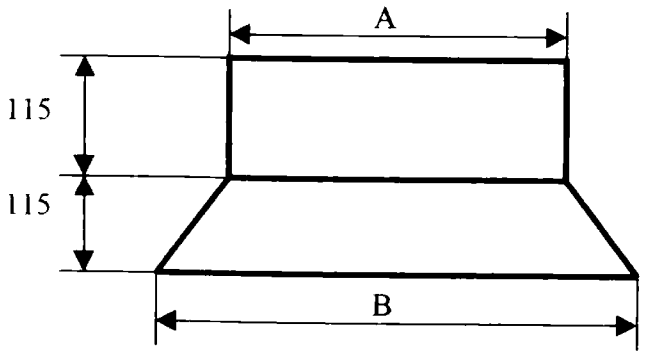
(2)with vertical magnetic field

2. (1)CRT neck should face magnetic west.

3. (2)For TECO plant : a <2.0mm

For Others : a $<0.5^{0}$

6-4 Image Size Variation



A-B≤3.0mm

	image size variation form the normal image size	range of variation
by brightness	within 3 mm (horizontal and vertical)	1~Full Beam
by power supply voltage	within 3 mm (horizontal and vertical)	AC100V~120V AC220V~240V
by temperature	Within 3 mm (horizontal and vertical)	$20^0 \pm 10^0$C

6-5 Mis -Convergence

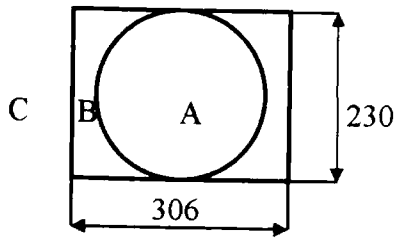
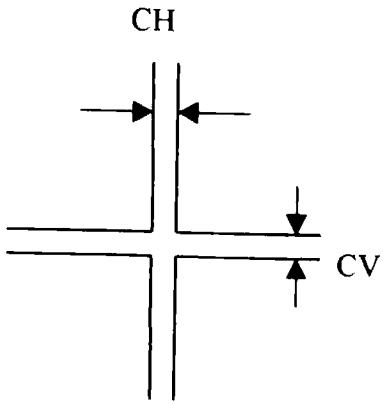


Figure 8

Center of the display area (a)<0.3mm
Peripheral display area (B)<0.40mm Cs≤0.5mm

Note: It should be measured under the following conditions.

1. without horizontal magnetic field (terrestrial)
2. with vertical magnetic field (terrestrial)
3. at room temperature
4. input signal with cross-hatch, R .G. B, mixed color



CH: Horizontal Miscon

CV : Vertical Miscon

$$Cs=\sqrt{CH^2+Cv^2}$$

6-6 Jitter

No visible jitter is present upon viewing the screen from 0.5 meters.

6-7 Luminance Uniformity

With entire 306mm by 230mm display area illuminated with white flat field, non-return to zero

No area may be less than 70% of the luminance of the brightness area found on the screen.

6-8 Maximum Luminance

Greater than 29 Foot-Lamberts, with full white pattern,306mm x 230 mm display area

greater than 45 Foot -Lamberts, 70x70mm, white pattern

6-9 Chromatically

(a)Turn the Brightness control until the raster is just cut off. Turn the Contrast Control.

The Full White Pattern Y≥20FL Xo=0.281±0.020 Y0=0.311±0.020

(b)The Contrast Control keeps the position of item (a0 Brightness Control from Max to Min.

Xe= Xo±0.025 Ye= Yo ±0.025

6-10 Focus

With full white pattern to set luminance at 20FL, change full white pattern to full E pattern to check whether all "E" characters are easy to read and do not fuzzy.

6-11 Power Management

Input Sync.			State	Power Consumption	Recovery Time
H	V	Video			
O	O	Active	On State	Less than 120W	Non-applicable
X	O	Blank	Stand-by	Less than 15W	5 Seconds
O	X		Suspend	Less than 15W	5 Seconds
X	X		OFF	Less than 8W	Same as Cold Start

6-12 DDC

Satisfies the DDC1 and DDC2B specification.

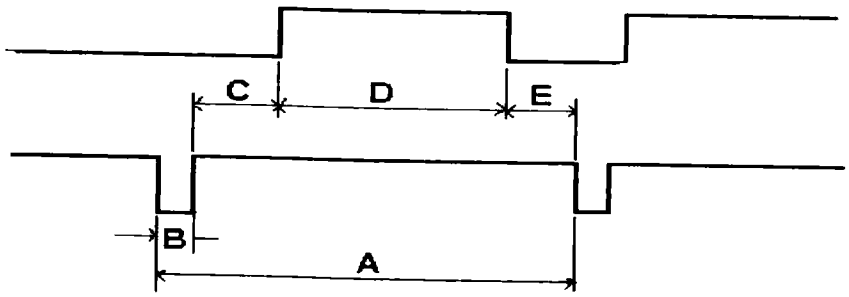
The BNC (optional) is not equipped with the DDC function.

The specifications of the D-SUB connector is shown on page 28

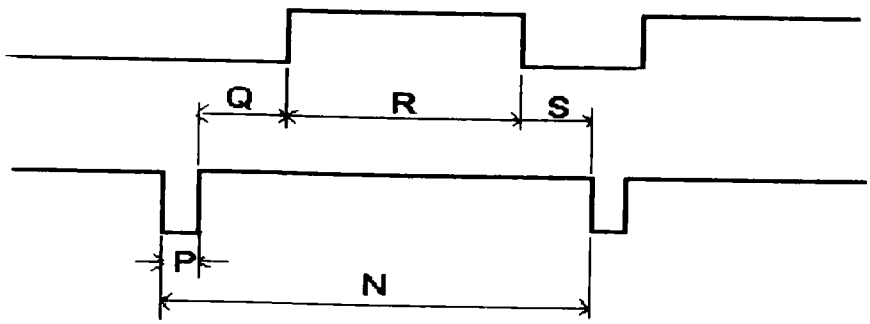
Input Signal Timing

SEPARATE SYNC.

HORIZONTAL



VERTICAL



Sync. Polarity : Positive/ Negative

Preset Timing

MODE ITEM	1 640x350	2 640x400	3 640x480
fH (KHz)	31.469	31. 469	31. 469
A us (Line time total)	31.778	31. 778	31. 778
B us (Sync. Pulse width)	3.813	3. 813	3. 813
C us (Back porch)	1. 907	1. 907	1. 907
D us (Active)	25.422	25. 422	25. 422
E us (Front porch)	0.636	0. 636	0.636
fV (Hz)	70. 086	70. 086	59.940
P ms (Frame time total)	14.268	14. 268	15. 253
Q ms (Sync. pulse width)	0.064	0. 064	0. 064
R ms (Back porch)	1.907	1. 112	1. 049
S ms (Active)	11.122	12.711	15.762
T ms (Front porch)	1.176	0.381	0.317
	Separate Sync.	Separate Sync	Separate Sync
Horizontal Sync. Polarity	positive	Negative	Negative
Vertical Sync. Polarity	Negative	Positive	Negatove
Interlaced	No	No	No

Preset Timing

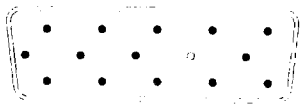
MODE ITEM	7 1024x768	8 1280 x 1024	9 1024x768
fH(KHz)	60.023	63.75	68.677
A us (Line time total)	16.660	15.686	14.561
B us (Sync. Pulse width)	1.219	1.489	1.016
C us (Back porch)	2.235	1.997	2.201
D us (Active)	13.003	11.62	10.836
E us (Front porch)	0.203	0.58	0.508
fV(Hz)	75.029	59.747	84.997
P ms (Frame time total)	13.328	16.737	11.765
Q ms (Sync. pulse width)	0.050	0.047	0.044
R ms (Back porch)	0.466	0.596	0.524
S ms (Active)	12.795	16.737	11.765
T ms (Front porch)	0.017	0.032	0.014
	Separate Sync.	Separate Sync.	Separate Sync.
Horizontal Sync. Polarity	Poisitive	Positive	Negative
Vertical Sync. Polarity	Positive	Negative	Positive
Interlaced	No	No	No

Preset Timing

MODE ITEM	4 VESA37KHZ 640x480	5 640x480	6 VESA46.8K . 800x600
fH(KHz)	37.5	43.20	46.884
A us (Line time total)	26.667	23.11	21.329
B us (Sync. Pulse width)	2.032	1.556	1.616
C us (Back porch)	3.81	2.22	3.232
D us (Active)	20.317	17.778	16.158
E us (Front porch)	0.508	1.556	0.323
fV(Hz)	75	85.008	75.04
P ms (Frame time total)	13.333	11.764	13.331
Q ms (Sync. pulse width)	0.08	0.069	0.064
R ms (Back porch)	0.427	0.578	0.448
S ms (Active)	12.8	11.093	12.797
T ms (Front porch)	0.026	0.024	0.022
	Separate Sync.	Separate Sync.	Separate Sync.
Horizontal Sync. Polarity	Negative	Negative	Negative
Vertical Sync. Polarity	Negative	Positive	Positive
Interlaced	No	No	No

Signal Connector

Pin 1 Pin 5



Pin 11 Pin 15

Signal Connector

Pin	Mode
1	R
2	G
3	B
4	Ground
5	D-Sub Test
6	Video Return
7	Video Return
8	Video Return
9	NO PIN
10	Digital Ground
11	D-Sub Test
12	SDA
13	H-Sync
14	V-Sync
15	SCL

Adjustment Guide

Instrument

1. Chrome-2000 Signal Generator
2. Assistant Ruler or Alignment Mask
3. Brightness Meter
4. Adjustment Tube and " - " Type Screw Driver
5. High-Voltage Probe
6. Digital Voltage Meter(DVM)
7. Degaussing Coil
8. Color Analyzer (MINOLTA TV-2031)
9. D.C Power Supply

Presetting Adjustment

1. Set Brightens and Contrast to the maximum position.
2. Set the main board VRs(VR501,VR502,VR901) to the mechanical center.
3. Timing

   Basically ,the timing is set to mode 1 cross-hatch pattern for adjustment .If you will use the other mode ,refer to the Input Signal Timing.
4. Turn on the power switch .Adjust the VR901 to enable that the 52.5VDC output voltage is in the range of 52.5±0.2VDC.Then check the other five output voltages to see whether they meet the following specifications.

   (a) 14.5 VDC ± 0.2 VDC (b) 75 VDC ± 0.5 VDC

   (c) 110VDC ± 1.0 VDC (d) 7.2 VDC ± 0.3 VDC.
5. High Voltage and Brightness Adjustment

   (a) Set the Chrome 2000 pattern generator to M3.

   (b) Set Brightness and Contrast to the minimum.

   (c) Adjust VR502 to get that the anode voltage is 25 ±0.2KV.

   (d) Adjust FBT screen VR to make G2 Voltage =630V±5V.

   (e) Set G1 Voltage to make the raster just visible.

6. Phase Adjustment

(a)Press the Menu Button to enable the OSD window.

(b)Press the Menu Key to enable the H-phase function.

(c)Adjust" ◀ "or" ▶ "Key to set video on the middle of screen .

(d)Press the menu key to enable the v-center function .

(e)Adjust " ▲ "or" ▼ "key to set video on the middle of screen.

7. Focus Adjustment

(a)Set the Chrome 2000 pattern generator to 68.6KHz.

(b)Adjust the FBT Focus VR(H.V.) to make that the corners and center look very clear.

8. High Voltage Protection Circuit

(a)Set the chrome 2000 pattern generator to 31.5KHz

(b)Set the Brightness and Contrast to the minimum position.

(c)Adjust VR502 to let anode voltage be over 28.5 ±1KV.

Check that the high voltage protection circuit can operate when the high voltage is in the range of 27.5 KV~ 29.5KV.

(d)Turn the power off. Re-adjust VR502 to the original position.

(e)Turn the power on. Re-adjust VR502 to enable that anode voltage is in the range of 25KV±0.2 KV.

Final adjustment

1. Check the high voltage protection function.
   (a) Set the Chrome 2000 pattern generator to 31.5KHz.
   (b) Adjust VR502 until the anode voltage reaches 28.5KV ± 1KV. Confirm that the high voltage protection circuit can operate to enable that the anode is under 0.1KV. Turn the power off.
   (c) Re-adjust VR502 to the original position. Then turn the power on.
   (d) Re-adjust VR502 to enable that the anode voltage is in the range of 25KV ± 0.2KV.
2. Raster White Balance Adjustment
   Warm up the unit about 30 minutes. Degauss the CRT screen, using the external degaussing coil.
   (a)Set the Chroma-2000 pattern generator to M1.(without video pattern)
   (b)Set the Brightness to the maximum and the Contrast to the minimum by OSD control.
   Adjust the Screen VR to make G2 =630±5V then adjust Sub Brightness (OSD Service Menu G1 ICON) to make background brightness =0.5FL±0.1FL
   (d) Enter the OSD function, and adjust the raster color temperature ICON to the following default values.
   x = 0.281 ±0.02
   y = 0.311 ±0.02
   (e)Re-adjust Sub Brightness to get the Brightness(Y) 0.6~1.0 F. L.
   Check x and y values. x = 0.281 ± 0.02 y = 0.311 ± 0.02
3. Video White Balance Adjustment
   (a) Set the Contrast to the maximum and the Brightness to the maximum.
   (b) Set the Chrome 2000 pattern generator to mode 1 pattern 3 70x70mm^2 window white pattern.
   (c) Adjust Video gain of red to get Y= 11 F. L.±1 F. L.(window red pattern)
   (d) Adjust Video gain of blue to get X=0.281±0.015 adjust Video gain of green to y=0.311± 0.015. 50 < y < 60F.L.
   (e) Set the Chroma 2000 pattern generator to model pattern 2 full white pattern.
   (f) Enter the OSD pattern : select "ABL Adj " ICON and adjust using " ◀ "or " ▶ "key to make Y=26FL~28FL.
   (g) check the white color temperature and color tracking to get the following values:
   x=0.281+/- 0.020
   y=0.311+/- 0.020
   Y=5~MAX. F. L.

4. Size Range: adjust the picture size of each mode to get H=306 +/- 5 mm and V=230 +/- 5 mm

5. Horizontal and Vertical Linearity

Use cross-hatch pattern and set timing from M1 to M10. Check that the horizontal and vertical linearity must meet the following specification:

Vertical Linearity ≤5%

Horizontal Linearity ≤5%

$$\text{Horizontal Linearity} = \frac{Xmax - Xmin}{Xmax + Xmin} \times 100\%$$

$$\text{Vertical Linearity} = \frac{Ymax - Ymin}{Ymax + Ymin} \times 100\%$$

6. Focus Adjustment

(a) Change timing to M10 mode Pattern 63 (full white pattern)

(b) Set the brightness to let the raster just disappears. Then set the contrast to get the luminance 20FL.

(c) change pattern to pattern 59 (character pattern)

(d) Turn the FBT Focus knob to let that the characters at the four corners of the screen look very clear.

7. Convergence Adjustment

(a) Switch timing to M10 pattern 51 (cross-hatch pattern)

(b)Adjust the H-Size and V-Size to get the display size 312mm x 232mm.

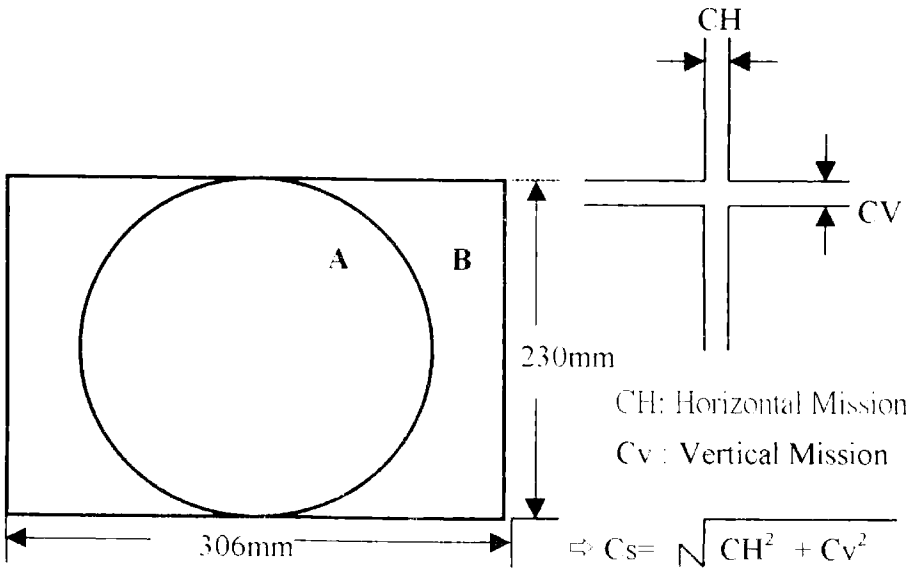
(c) Set the brightness to let the raster just disappears.

Switch pattern from pattern 51 (cross-hatch pattern) to pattern 63 (full white pattern). Then turn the Contrast to get the luminance 20F.L.

(d) Switch pattern to pattern 51 (cross-hatch pattern).Adjust CRT magnetic ring in compliance with the following convergence specifications

A:0.30mm

B:0.40mm Cs ≤0.5mm



CH: Horizontal Mission

Cv : Vertical Mission

⇨ $Cs = \sqrt{CH^2 + Cv^2}$

8. High Voltage Regulation

(a) Change timing to M10 Black and White pattern.

(b) Set the brightness and Contrast to the maximum luminance position.

(c) Check that the horizontal and vertical size variation must be less that 3 mm.

(d) Change pattern to full white pattern

(e) Set the brightness and contrast form the maximum luminance position to the minimum.

(f) Check if the horizontal and vertical size variation is less than 3 mm

Circuit Guide

1. DC Power Supply

EMI Filter Circuit

This circuit uses L (FL9001~FL902) and C (C901~C904) filter circuit to protect the power supply from noise during switching because that will interfere the voltage source via the power cord.

2. Power Start Circuit

The start circuit is composed of Q903 , Q904, R915, R917, R916, R918, ZD902 and C923 to get the fixed current to start up IC902.

3. Feedback and PWM Circuit

The feedback functions by use of the voltage sensed by R924.The voltage will input to IC902 pin 3 via R923 and will output to IC902 pin 6 after it is compared with IC902 pin 2(whose voltage is got after passing the divided circuit composed by R938,R939, and VR901 and the amplification and compensation circuit composed of R934,R927, C919 and C920) to Push Q901 to do switching for PWM function so t hat the output voltage of T9011 is very stable

4. LED Indication, OFF mode (Saving)and Sync Circuit

(1)Sync

The Sync + signal enter IC901 pin 4 through C924, D911,D912, R931and C918 to synchronize T901 with H-Sync

(2)LED Indicator and Off mode

In the ON mode, the Sync + signal will illuminate the Green LED (Q906 is ON) through D910,C925,and LED 901 .In the Stand-by or Suspend mode, no voltage is provided by the Sync +signal but only C923 provides the LED901 with voltage to illuminate the orange LED In the OFF mode, Q906 will switch on and off so the voltage is provided to Q927 by T902 and IC901and Q925 will switch on and off so the LED blinks.

5. Output Rectification Circuit

T901 stores the energy by switching Q901 and releases the energy through D951, D952, D953, D954 and D955.

(D951, C952), (D952,C954), (D953,C955) , (D954,C956), and (D955,C958)constitute 52V, 110V, 175V, 14.5V, and 7V rectification / filter circuit separately. R964 connects to IC951 input via 14.5V and a stable voltage 5V is got from IC951 output to provide the CPU circuit.

IC952 gets a stable output voltage 12V provides Time- base IC (IC501) for B saving (stand-by & suspend).

9. PnP DDC1➔DDC2B

(a)Start the test with a test floppy.

(b)Insert the floppy into "A" drive.

(c)Key in "P TE772"

(d)Press "N" Key to start the test. Press "R" Key to end the test.

(e)The test will be initialized in the following sequence:

1.DDC1 communication test

2.DDC2B communication test

(f)When the communication test terminates, the following message will be shown on the right of the screen.

[ITEMS]

DDC1 Data check O.K.

DDC2B data check O.K.

10.Enter the Service function window

(a) First, press the "MENU" key.

(b) Re-press the MENU Key to choose the function "Tools" .

(c)Press the key " ∇ " to drag the green cursor down to the icon "Tea-time" and hold on the key " ∇ " for about 15 seconds.

(d) Window will change to the service manual pattern.

If no H-Sync and V-Sync input, IC602 PIN 27 will send a low level signal IC903. IC903 will turn on Q907, Q908 turn on and limit pin 2 of IC902 below 1V. then it will turn off to complete power saving .

When H-Sync input again, H-Sync will turn on Q958 to mask IC904 on and Q909 will on mask Q908 off then IC902 will actives. Power start again.

7. DC/ DC Converter Circuit

The monitor uses a Boost DC-DC converter to raise the voltage from 52V to 58~184V(depending on the horizontal frequency and load). IC501 contain a building PWM IC, whose output pin 6 switch on/ off Q951.When Q951 is ON, L901 will store energy and when Q951 is OFF ,L901 will release energy from 52V and via ,C963 to the FBT (horizontal output). The FBT pin 12 provides a reference voltage as a feedback signal through R5A2, R5A3, and VR502 , C550 to IC501 pin 5 enable that the high voltage becomes stable 25Kv during Fh=31~27KHZ. R955 is current sense resistor to detect L901 current.

8. Digital Control Circuit

This circuit contain IC602 its circumferential parts , IC602 pin 25 and are I^2C bus input signal and parallel with IC501 directly .

The H-Sync signal inputs from IC602 pin 42 and pin36 will output a fixed polarity.

The V-Sync signal inputs from IC601 pin 1 and 37 will output a V-Sync signal working as the time base of monitor.

CS Control(CS0.CS2 CS3)

the following table shows the control status: (IC602 pin 10~13)

	CS	CS0	CS2	CS3
31k~33k	1	1	1	0
33k~40k	1	1	1	1
40k~45k	1	1	0	0
45k~50k	1	0	0	0
50k~55k	1	1	0	1
55k~62k	1	1	0	1
62k~73k	1	0	0	1

NOTE 1: " 0 " means C528 is ON " 1" means L504 ON.

9.Horizontal (Time Base) Circuit

The horizontal signal inputs from IC501 pin 15 and pin 8 will output a fixed duty ON/OFF signal (the signal synchronizes with pin 29 and the duty will be modulated by H-Frequency) after the procession done by IC501. H-phase is determined by the voltage of IC501 pin 26. The free-running frequency is determined by R517, R518, & C512. If C501 pin 30 is low and this IC will stop working.

10.Horizontal Output Circuit

(a). The H-Drive signal (IC501 pin 8) passes through C519, Q506, T501, R545 and Q504 to switch On/Off Q504 and triggers the FBT, C525, C526, D516 and D157 to output the high voltage (about 25KV).

(b). The linearity coil (L503) will be paralleled with L504 when use in higher frequency (control by IC501) to mask linearity better.

11.Vertical Circuit

The V-Sync signal inputs to IC501 pin 12 and 13 then , send to Ic401 pin 1 and 2 and the signal will output from IC401 pin 6 after the procession done by IC401. Vertical freerum depend on C516 & R520.

The blank signal talk from IC401 pin 8 via R408 connect to Q518 to Amplifier and via Q547 to CRT G1. IC602 pin 9 will output a low signal to pull down base voltage of Q517 to avoid suddenly high current in CRT screen.

The IC401 is a current amplifier with output pin 6 which can make the input of pins 1 & 2 differential amplification and will output from pin 6 to trigger V-DY.

12. Over Beam Current, Brightness, ABL and spot killer Circuit

Over Beam Current :

The OBC Circuit is composed of Q604, R604, R633, Q639, R611, R612 & C607 VR502, R517, at once beam current raise too high be by IC602 pin 40 the video will be blank by IC602 to finish over current protection.

Brightness :

IC602 pin 35 O/P a PWM signal to Q206 (on video board) . The Q206 emitter voltage Will pull down the cathode voltage to control the brightness.

ABL :

After change CRT if the brightness of full white pattern is out of spec, you can get in "ABLADJAST" ICON of OSD, then press " "◁" or "▷" key to get proper brightness the control signal is come from IC602 pin 34.

Spot Killer:

IC602 pin 9 will O/P a low signal to pull high G1 voltage and disappear video picture when abnormal operation.

13.H-Size and Distortion Correction Circuit

This circuit contain Q601, C501, Q515 & Q514 , IC602 pin 20 O/P a PWM signal and get a DC level in C555 to control O/P level in pin 14 if IC502, if the DC level is higher, the size will be shrink. Pin 33 is compensated H-Size in mode- change pincushion is control by pin 11 of IC501 the parabola signal be amplified by IC502 and O/P from pin 14 to control the pincushion distortion. The other parameters of distortion (comer, trapezium , parallelogram, pin -balance) also control by this signal via I^2C bus from IC602.

14. Auto Degaussing

When power on at once IC602 pin 14 O/P a high level signal to turn on Q955 RL901 will on , degaussing coil will act6ive to finish degaussing function. The manual degaussing can also be finished via OSD function.

15.Raster Center Circuit

This circuit contain Q508 , Q509, VR501 etc. adjust VR501 you can move the raster horizontally to the picture center.

16.Dynamic Focus Circuit

The dynamic parabola signal come from pin 32 of IC501 and amplifier by Q501A. Then direct connect to focus pin of FBT and enter CRT.

17.Hi- Voltage Protection Circuit

If Hi-Voltage is raise to higher without limitation during abnormal condition will injure human health in this case.

The protection circuit : ZD501 and R511~R514 will active to shutdown high voltage.

Video Circuit Guide

1. TDA4885 is the pre-amplifier of I^2C BUS Control. Setting the increasing percentage to the contrast max. will obtain the value: 4.5VP-P - approximately 6 times of TDA 4885. The B+ Range of IC is 7.6V~8.8V. Take 8V and use the regulation IC7808 to generate the following:

   A : Pin 6,8,10 worked as the three-gun input pin are generally set to 0.7VP-P.

   B : The max. value of Pin 25, 30, 20 worked as the three-gun output pin is 4.5VP-P.

   C : Pin 21,22, 32 supply the DC BIAS Control with the DC voltage 4V~6V.

   D : Pin 17 supply the Beam Current Limiting with the start point within 4.5V~2V to control the Video gain of Full White Balance.

   E : The voltage of Pin 21,26,31 determining the Black Lever of Output is assigned to adjust the external brightness.

   F : Pin 5 Clamp Pulse is generated and supplied by the mother board – TDA4854.

   G : Pin 2,3,4 are assigned as OSD Mix Pin.

   H : Pin 15 is the SDA I^2C BUS Serial data input.

   I : Pin 16 is the SCL I^2C BUS Serial clock input.

2. Partial Output Amplifiers are of the traditional construction – case code + push pull.

   O / P rate gain = $\frac{RE}{RL} = \frac{1.5\ K\Omega}{100\Omega} \fallingdotseq 15$ times

   TDA 4885 IC O/P =4.5 VPP (max.) The range , 4.5x 15≒ 67.5, meets the requirement of current Video O/P.

   OUTPUT current = $\frac{67VPP \times 0.8}{RL} \fallingdotseq 46.6mA$

   Q212, Q213, Q214 , the Common Base, are assigned to increase the voltage, and larger VCBO voltage-resistance is required. Since 75 : 0.8≒94V (0.8 is the upper limit of voltage) , and the VCBO of 2SC4934 is B+ is 75V, the VCBO of 2SC4934 - 120V is consequently acceptable.

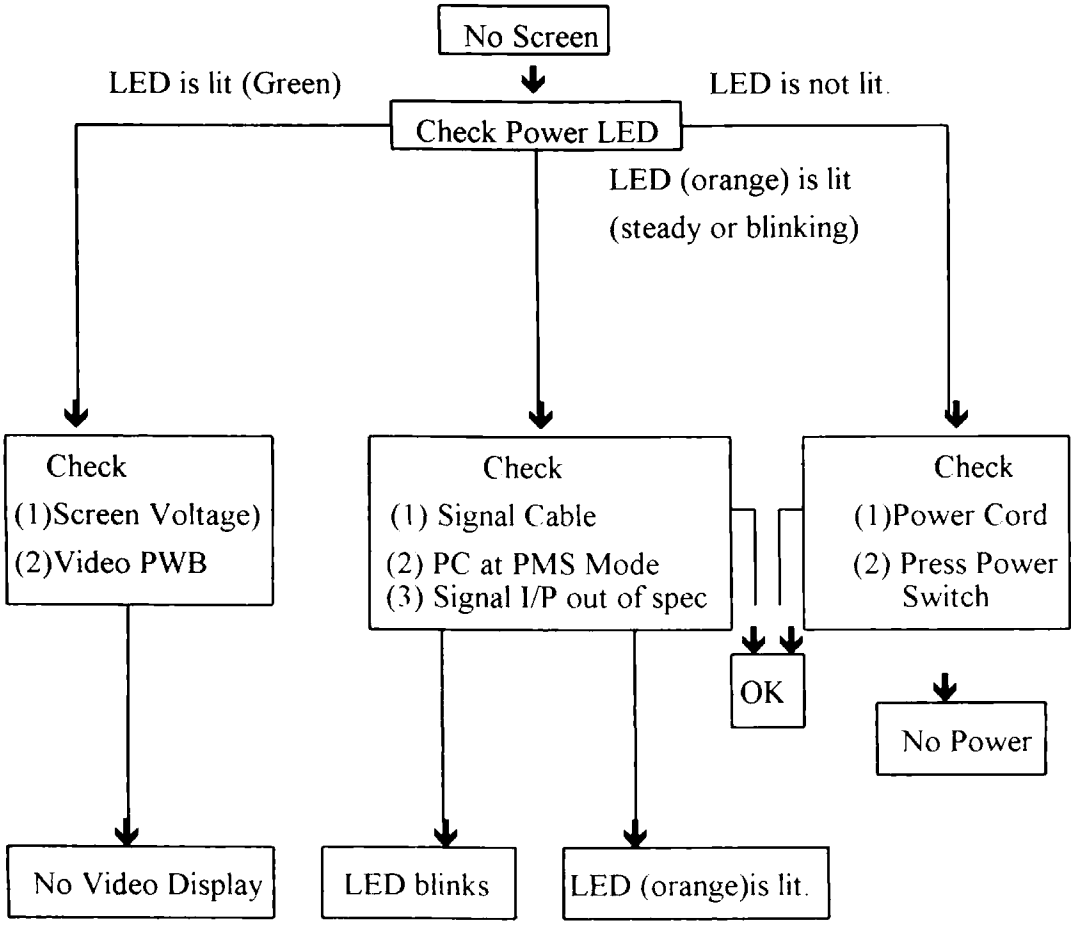
   R212, C213, R213, C214, R214, and C215 are used for the general high frequency peaking.

   Q215, Q216, Q217,Q218, Q219. and Q220 work as PUSH-PULL to separate the scattered output capacitor as to enhance the high frequency response.

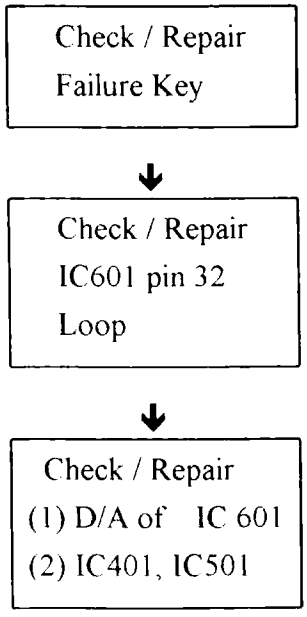
3. IC202 MC141545 records the OSD data onto the RAM. Press the MENU key ,then the OSD Window will be displayed for detailed adjustment. To start up, Pin9 and Pin4 require B+ , Pin5 requires positive horizontal input signal, and Pin10 requires negative vertical input signal. The components connected by Pin2~5 are the Phase Locked-Loop. The component value cannot be mis-assigned otherwise the OSD Window cannot be held and the sharp edge of the OSD Window may occur.

Troubleshooting

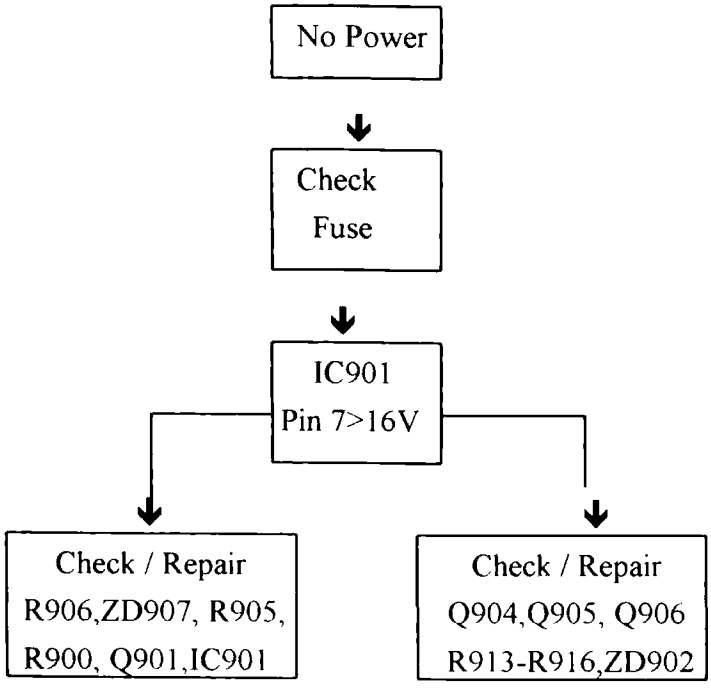
1.No Screen



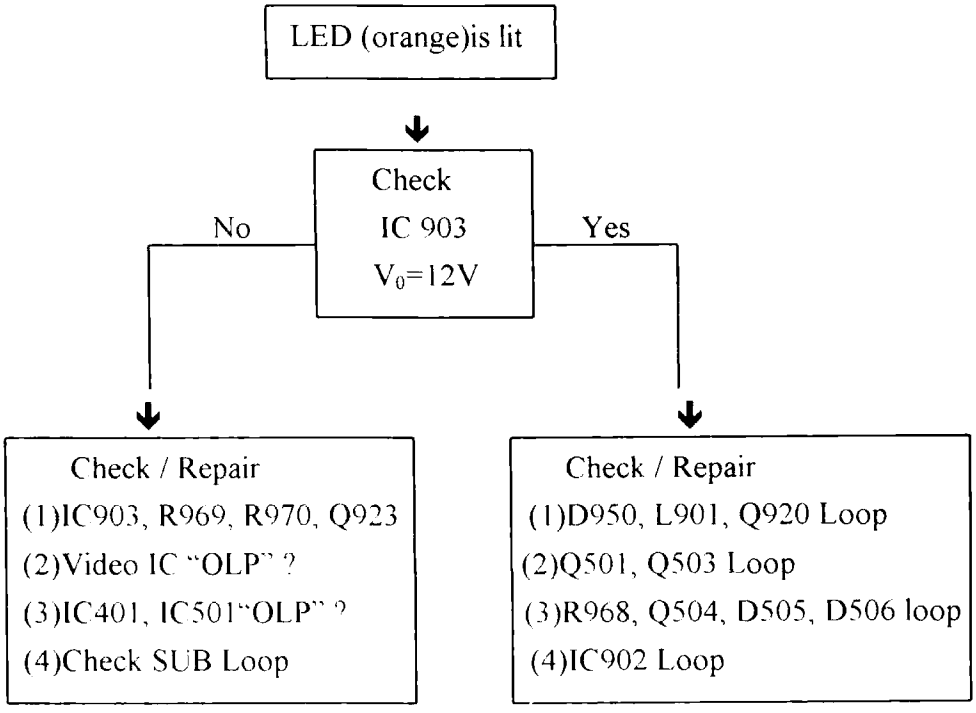
9. Exit Function/Adjustment Key Failure



2.No Power

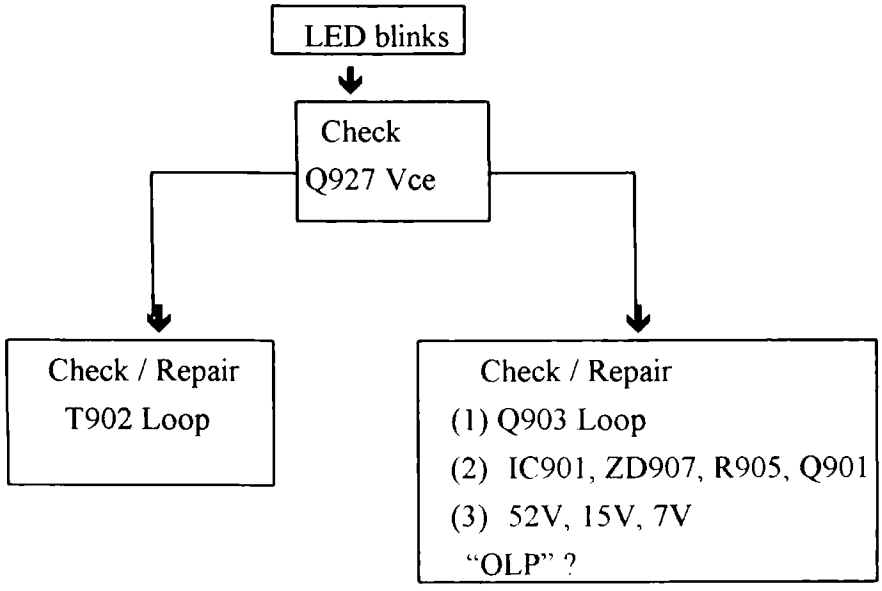

No Power
Check
Fuse
IC901
Pin 7>16V
Check / Repair
R906,ZD907, R905,
R900, Q901,IC901
Check / Repair
Q904,Q905, Q906
R913-R916,ZD902

3.LED (orange) is lit

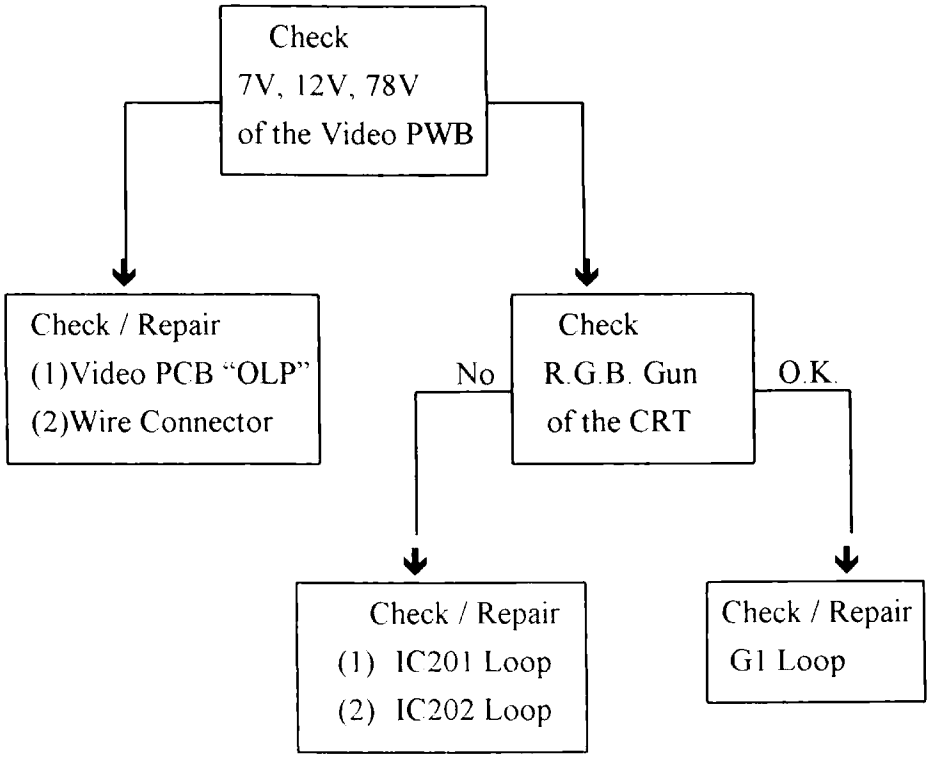


* * "OLP " means Over Load Protected.

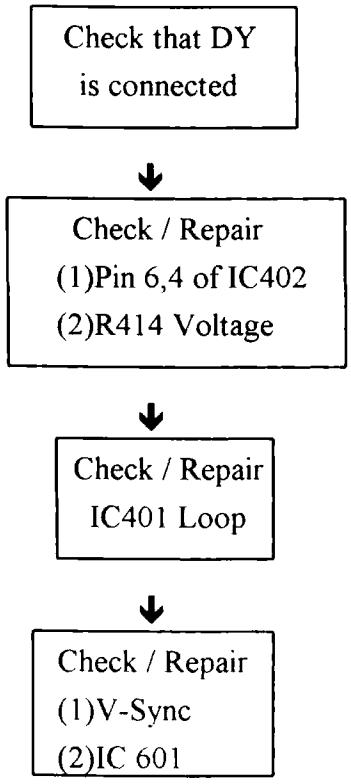
4.LED blinks


LED blinks
Check
Q927 Vce
Check / Repair
T902 Loop
Check / Repair
(1) Q903 Loop
(2) IC901, ZD907, R905, Q901
(3) 52V, 15V, 7V
"OLP" ?

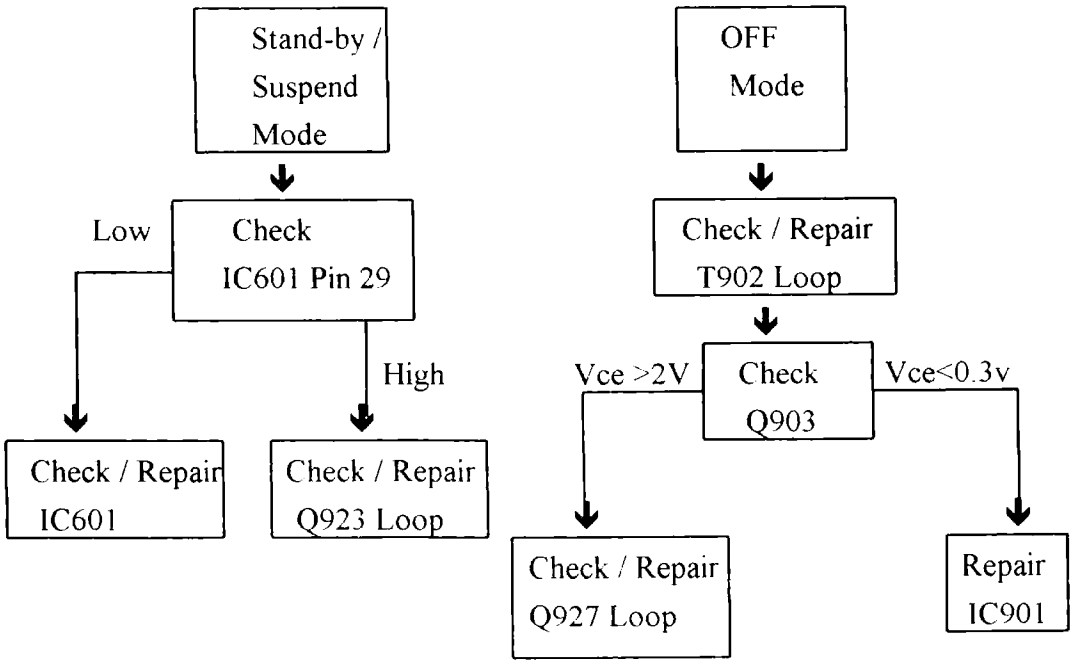
5.Video Display



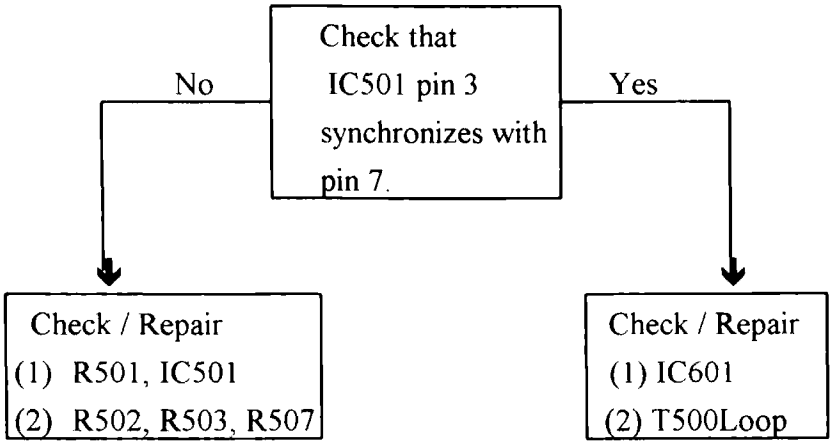
6. No Vertical Scan



7.Cannot work in the PMS Mode

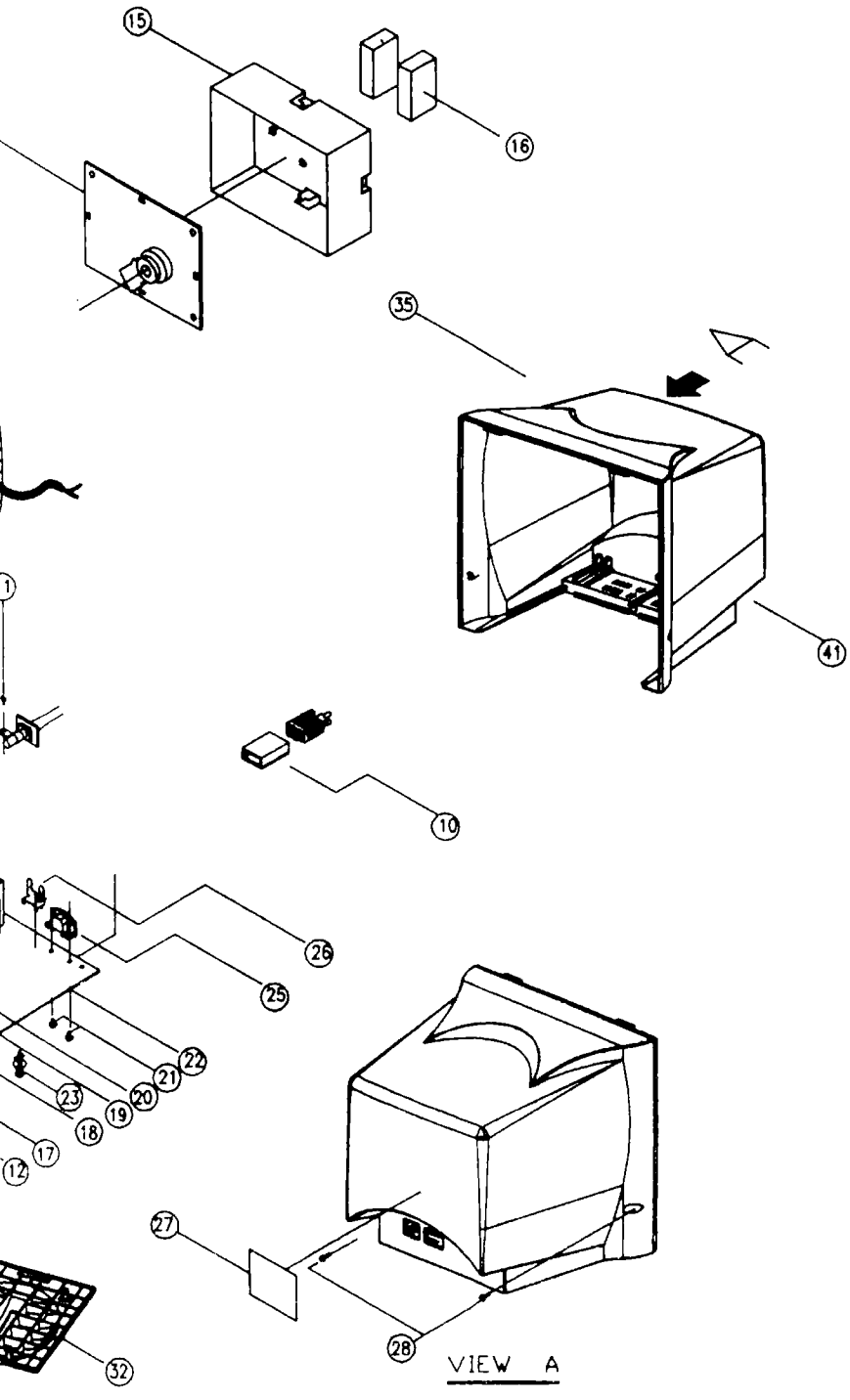


8.No Hold (Horizontal)



修改內容 REVISION		核定 APPROVED BY	
		審查 REVIEWED BY	
		設計 DESIGNED BY	
		製圖 DRAWN BY	
		規範 VENDOR	

第三角法



NO	TITLE	TECO PART NO	QTY	REMARK
01	BUTTON-P	7021453006517	1	
02	SPRING	7021874004815	1	
03	FRONT PANEL	7021301032814	1	FOR OSBPC WHITE
04	LEN-P	7021404014318	1	
05	BUTTON-F	7021453006614	1	
06	SUPPORT CRT	7021504015516	4	
07	SCREW SPECIAL	780XX00211148	4	
08	CRT	7333021702000	1	HITACHI
09	LABLE	7021764051915	1	
10	PE SHEET	7021824006612	1	CABLE PACK
11	SCREW	780PS4008CB06	1	
12	LED HOLDER	7021404011416	1	
13	COIL DEGAUSSING	7351190009001	1	
14	CRT PWB ASSY	7TE772BM4019	1	
15	SHIELD CASE	7021511001628	1	
16	CUSHION	7021614013616	2	
17	SW POWER	7352031004909	1	
18	SCREW	780PG3008CA06	1	
19	HEATSINK	7021524014117	1	
20	HEATSINK	7021524014010	1	
21	SCREW	780XX00165146	2	
22	MAIN PCB ASSY	7TE772FM2014	1	
23	PCB HOLDER	7021404011718	1	
24	WIRE SADDLE	7021404014911	1	
25	SOCKET AC	77370000102005	1	
26	SUPPORT	7021503012912	1	
27	LABLE	7831190000600	1	
28	SCREW	780PP4016CB08	2	
29	HEATSINK	7021524007625	1	Q920
30	HEATSINK	7021524013013	1	
31	HEATSINK	7021522000925	1	Q 504
32	SWIVEL	7021401007019	1	
33	BASE	7021401007116	1	
34	RUBBER FOOT	7021614014019	4	
35	CARTON	7021802043310	1	
36	POLYFOAM(L)	7021812004711	1	
37	POLYFOAM(R)	7021812004819	1	
38	PE BAG	7021824004024	1	FOR SET
39	PE BAG	7021824001513	1	
40	WARNING	7021764050919	1	
41	BACK COVER	7021311019719	1	
42				
43				
44				
45				

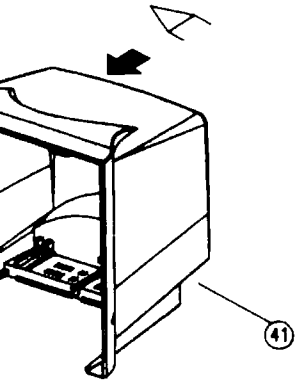
TE772 EXPLODE DRAFT

核 定 APPROVED BY	C.L. Yang	9·18·98	比 列 SCALE	圖 名	
審 查 REVIEWED BY	王建春	9·18·98			
設 計 DESIGNED BY	許耀雄	9·18·98	M M	DRAWN NAME	
製 圖 DRAWN BY	許耀雄	9·18·98			
規 範 VENDOR					

東元資訊股份有限公司
TECO INFORMATION SYSTEMS

圖 號 DRAWN NO

NO	TITLE	TECO PART NO	QTY	REMARK
01	BUTTON-P	7021453006517	1	
02	SPRING	7021874004815	1	
03	FRONT PANEL	7021301032814	1	FOR OSRPC WHITE
04	LEN-P	7021404014318	1	
05	BUTTON-F	7021453006614	1	
06	SUPPORT CRT	7021504015516	4	
07	SCREW SPECIAL	780XX00211148	4	
08	CRT	7333021702000	1	HITACHI
09	LABLE	70217640519 15	1	
10	PE SHEET	7021824006612	1	CABLE PACK
11	SCREW	780PS4008CB06	1	
12	LED HOLDER	7021404011416	1	
13	COIL DEGAUSSING	7351190009001	1	
14	CRT PWB ASSY	7TE772BM4019	1	
15	SHIELD CASE	7021511001628	1	
16	CUSHION	7021614013616	2	
17	SW POWER	7352031004909	1	
18	SCREW	780PG3008CA06	1	
19	HEATSINK	7021524014117	1	
20	HEATSINK	7021524014010	1	
21	SCREW	780XX00165146	2	
22	MAIN PCB ASSY	7TE772FM2014	1	
23	PCB HOLDER	7021404011718	1	
24	WIRE SADDLE	7021404014911	1	
25	SOCKET AC	77370000102005	1	
26	SUPPORT	7021503012912	1	
27	LABLE	7831190000600	1	
28	SCREW	780PP4016CB08	2	
29	HEATSINK	7021524007625	1	Q920
30	HEATSINK	7021524013013	1	
31	HEATSINK	7021522000925	1	Q 504
32	SWIVEL	7021401007019	1	
33	BASE	7021401007116	1	
34	RUBBER FOOT	7021614014019	4	
35	CARTON	7021802043310	1	
36	POLYFOAM(L)	7021812004711	1	
37	POLYFOAM(R)	7021812004819	1	
38	PE BAG	7021824004024	1	FOR SET
39	PE BAG	7021824001513	1	
40	WARNING	7021764050919	1	
41	BACK COVER	7021311019719	1	
42				
43				
44				
45				



A

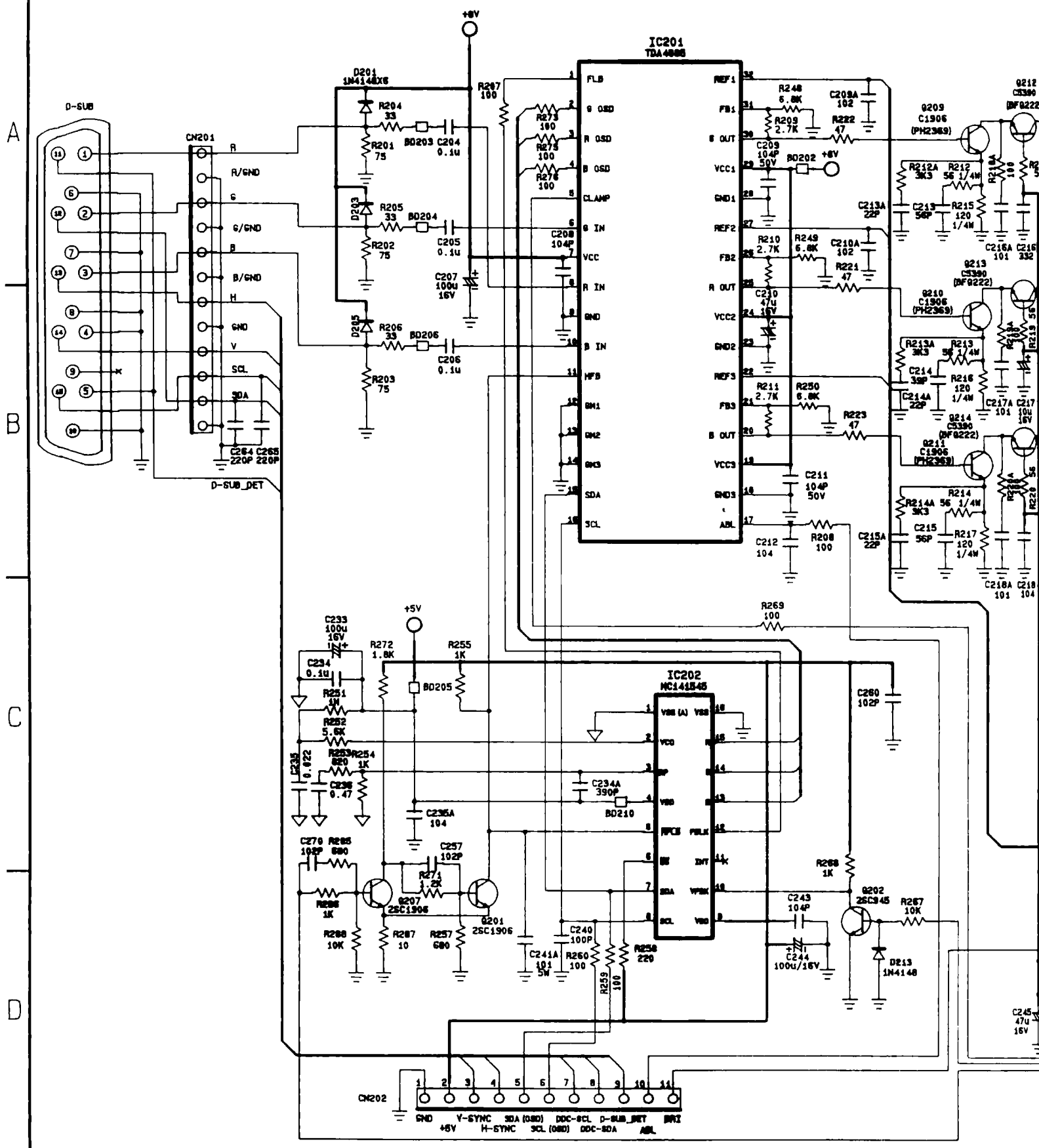
TE772 EXPLODE DRAFT

C.L Wang	9·18·98	比 列 SCALE		圖 名	分解組立圖
王建春	9·18·98	1/1		DRAWN NAME	Exploded Assembly Drawing
許耀權	9·18·98	M M			
許耀權	9·18·98				

東元資訊股份有限公司
TECO INFORMATION SYSTEMS

圖號 DRAWN NO

4 5 6



E/C RECORD

REV: 5

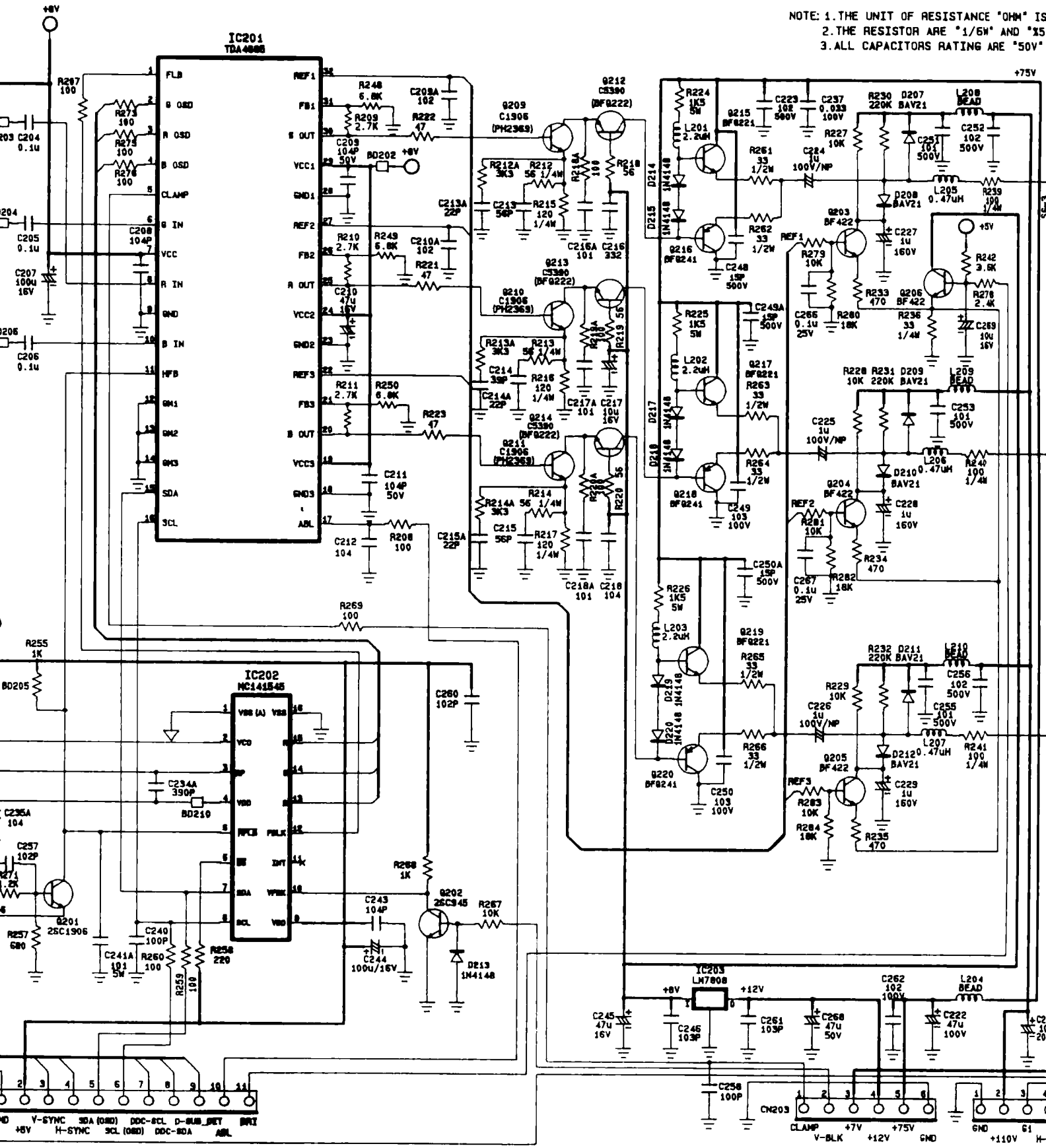
DEL BD201 BD206 BD209 BD210 BD211
ADD DB203 BD204 BD206
R265 10K CHNAGE 1K
R265 1K CHANGE 680
Q201 Q207 2SC945 CHANGE 2SC1906
ADD R212A R213A R214A 3.3K
ADD C212A C213A C214A 68P

ADD R218A R219A R220A 100 OHMS
ADD C216A C217A C218A 101 50V
C248 102 CHANGE 15P 500V
C249 102 CHANGE 103 500V
C250 102 CHANGE 15P 500V
DEL C255 0.1u 25V
ADD C255 4.7u 50V

C223 22u 100V CHANGE 102 100V
ADD C249A 15P 500V
ADD L205 L206 L207 1uH
C263 102P 50V CHANGE 102P 500V
L204 100uH CHANGE BEAD
C247 47u 100V CHANGE 10u 200V
C262 680P 50V CHANGE 102P 50V

ADD C241A 100P 50V
DEL C241 100P 50V
DEL C241A 100P 50V
CHANGE C213A C214A C215A 22P
ADD C234A 390P 50V
ADD BD210
ADD C235A 104P 50V

APPROVED	
CHECKED	
DESIGN	
DRAWN	BETTY LI



APPROVED	Chawen Chen	97.7.18	TECO INFORMATIO
CHECKED	MAO shen	97.7.18	
DESIGN	MAO shen	97.07.18	DWG. NAME
DRAWN	BETTY LIN	07 . 01 . 98	572/772/786 VIDEO PWB

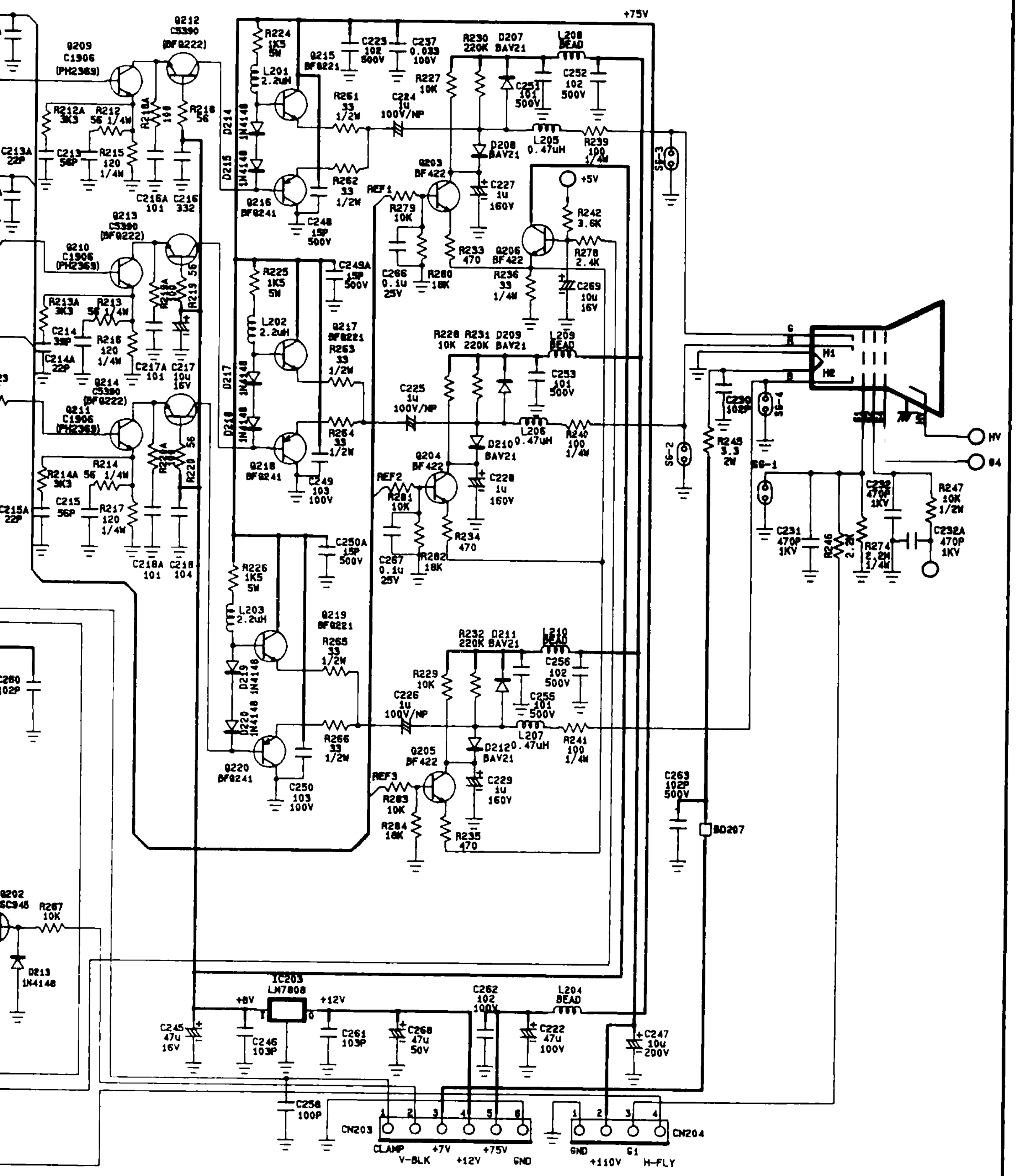
100 OHM
1 50V

C223 22u 100V CHANGE 102 100V
ADD C249A 15P 500V
ADD L205 L206 L207 1uH
C263 102P 50V CHANGE 102P 500V
L204 100uH CHANGE BEAD
C247 47u 100V CHANGE 10u 200V
C262 680P 50V CHANGE 102P 50V

ADD C241A 100P 50V
DEL C241 100P 50V
DEL C241A 100P 50V
CHANGE C213A C214A C215A 22P
ADD C234A 390P 50V
ADD BD210
ADD C235A 104P 50V

4 | 5 | 6 | 7

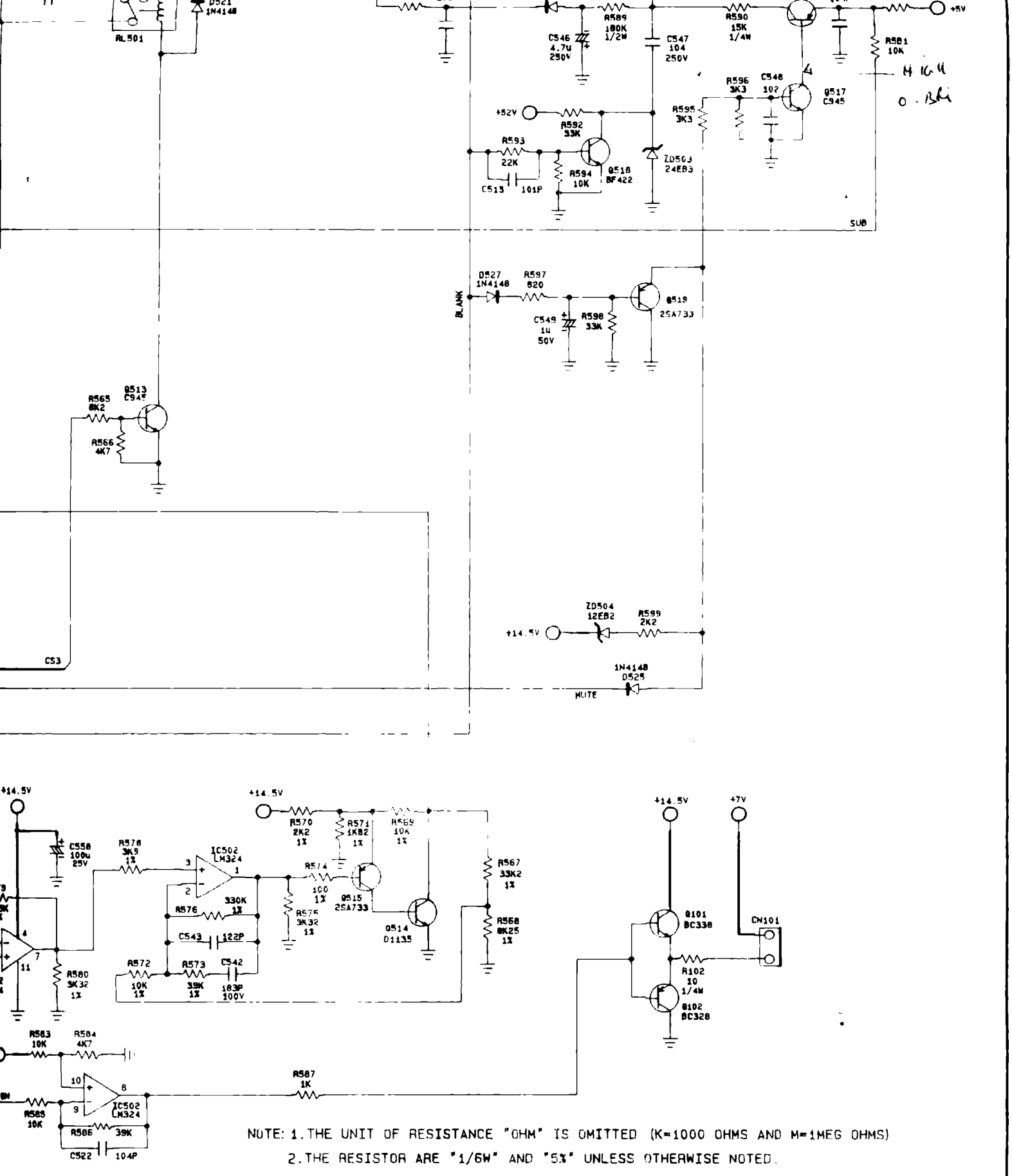
NOTE: 1. THE UNIT OF RESISTANCE "OHM" IS OMITTED (K=1000 OHMS AND M=1MEG OHMS)
2. THE RESISTOR ARE "1/6W" AND "±5" UNLESS OTHERWISE NOTED.
3. ALL CAPACITORS RATING ARE "50V" UNLESS OTHERWISE NOTED.



APPROVED		07. 98
CHECKED	MAco shen	07. 07. 98
DESIGN	MAco shen	07. 09. 98
DRAWN	BETTY LIN	07 01 98

TECO INFORMATION SYSTEMS CO, LTD

DWG. NAME	572/772/786 VIDEO PWB	DWG. NO.	792TE772BMV19

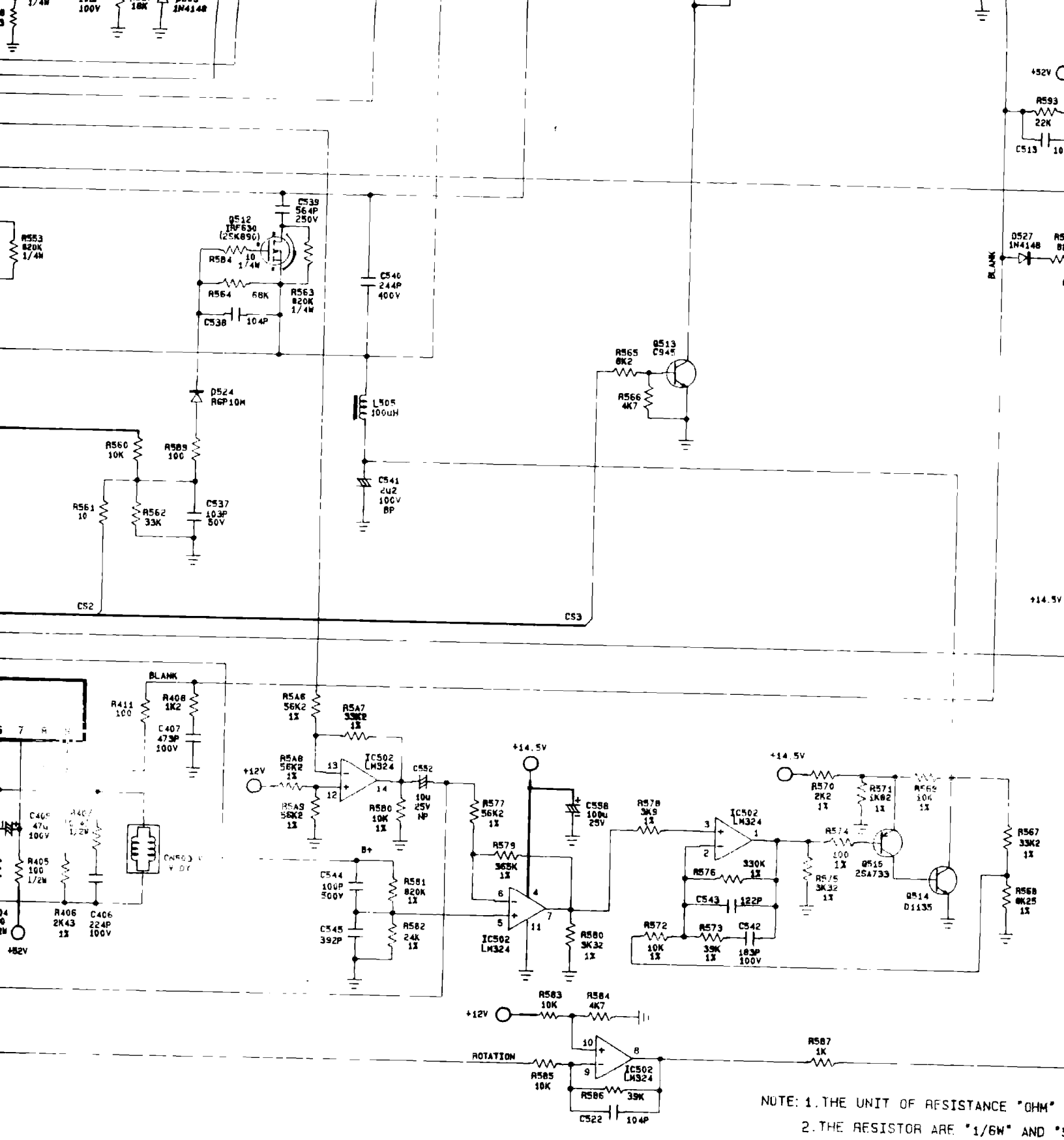


NOTE: 1. THE UNIT OF RESISTANCE "OHM" IS OMITTED (K=1000 OHMS AND M=1MEG OHMS)

2. THE RESISTOR ARE "1/6W" AND "5%" UNLESS OTHERWISE NOTED.

3. ALL CAPACITORS RATING ARE "50V" UNLESS OTHERWISE NOTED.

TECO INFORMATION SYSTEMS CO, LTD			
DWG. NAME	TE772 MAIN PWB	DWG. NO.	792TE772BFM15

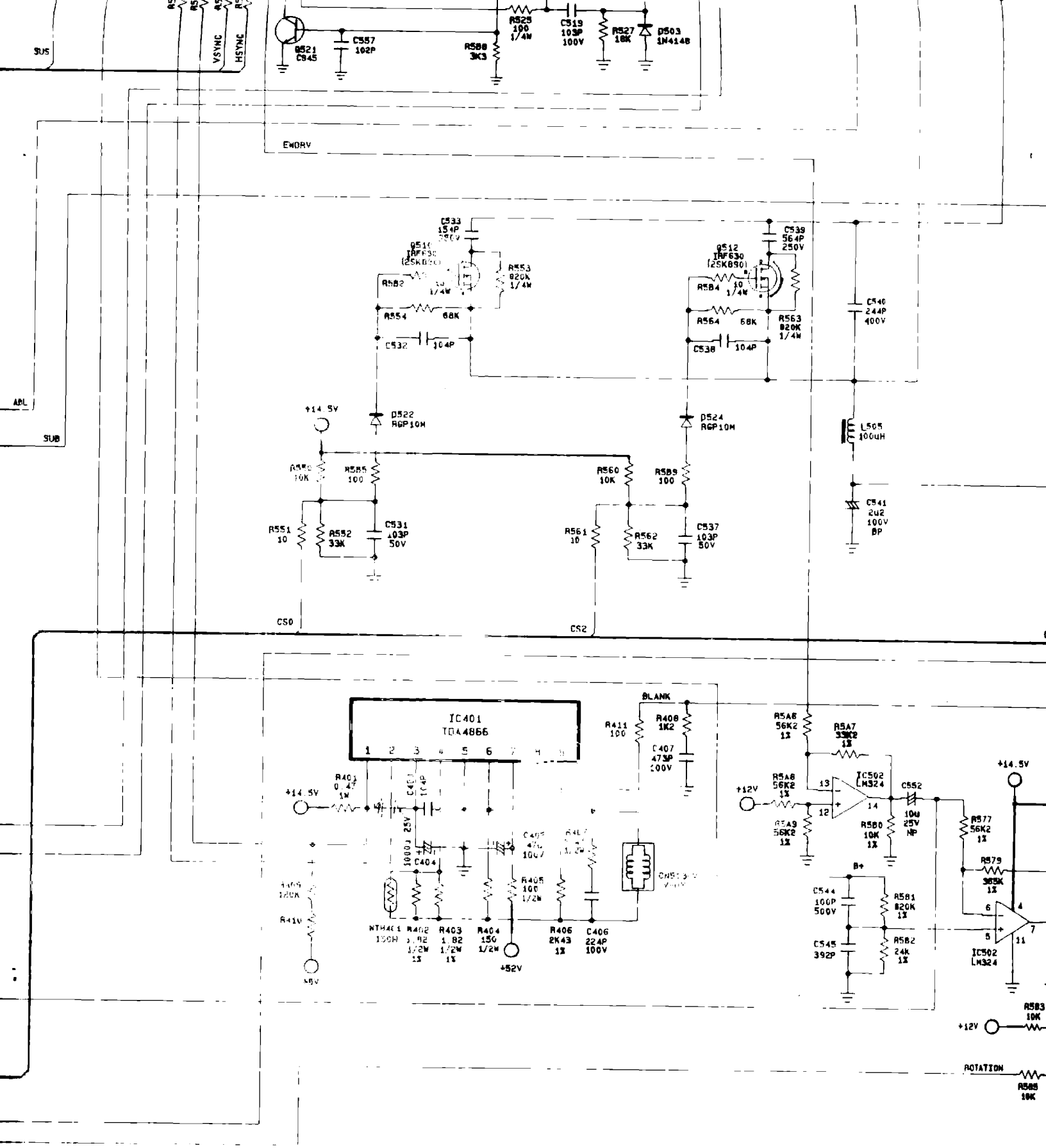


NOTE: 1. THE UNIT OF RESISTANCE "OHM"

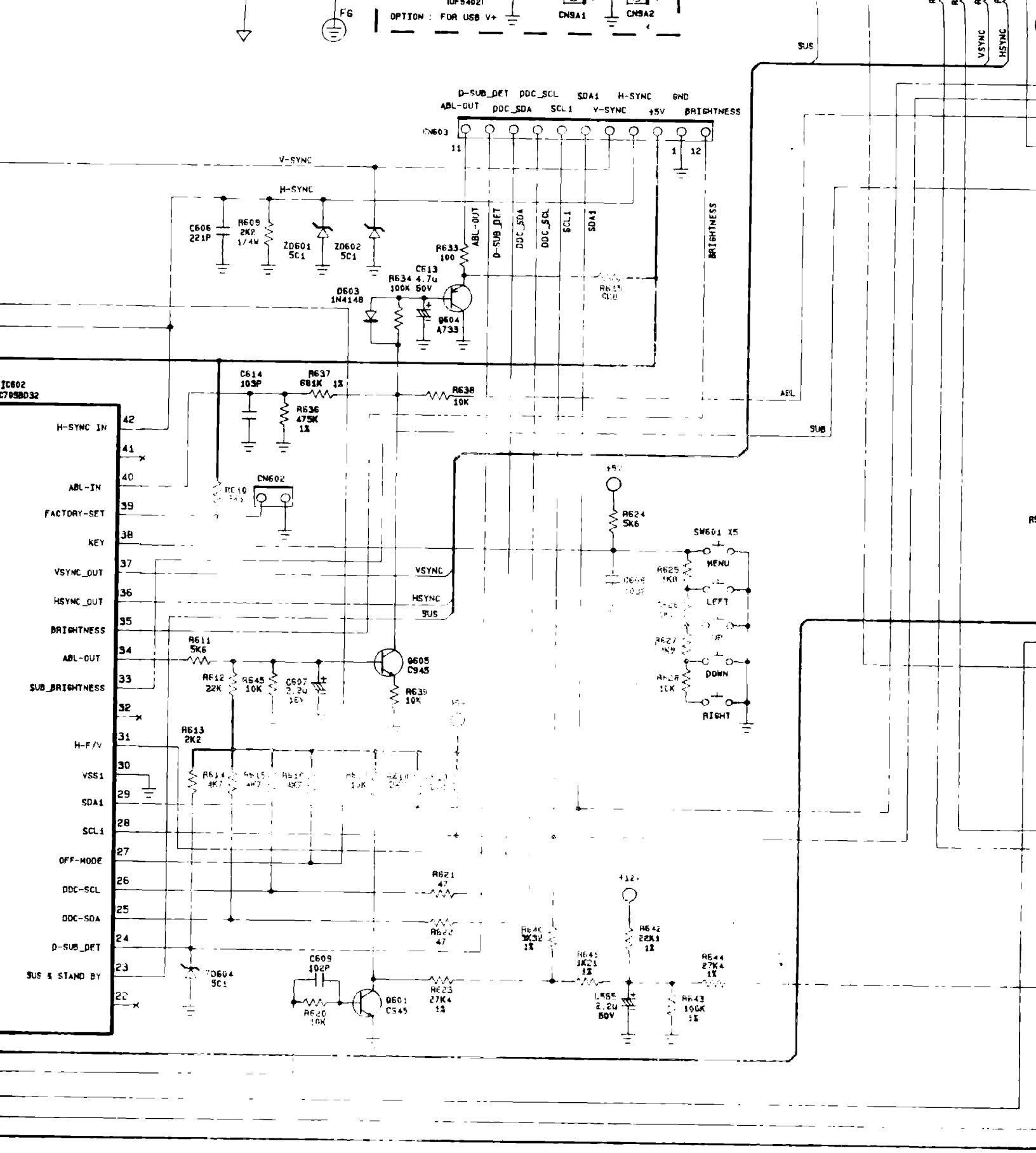
2. THE RESISTOR ARE "1/6W" AND "

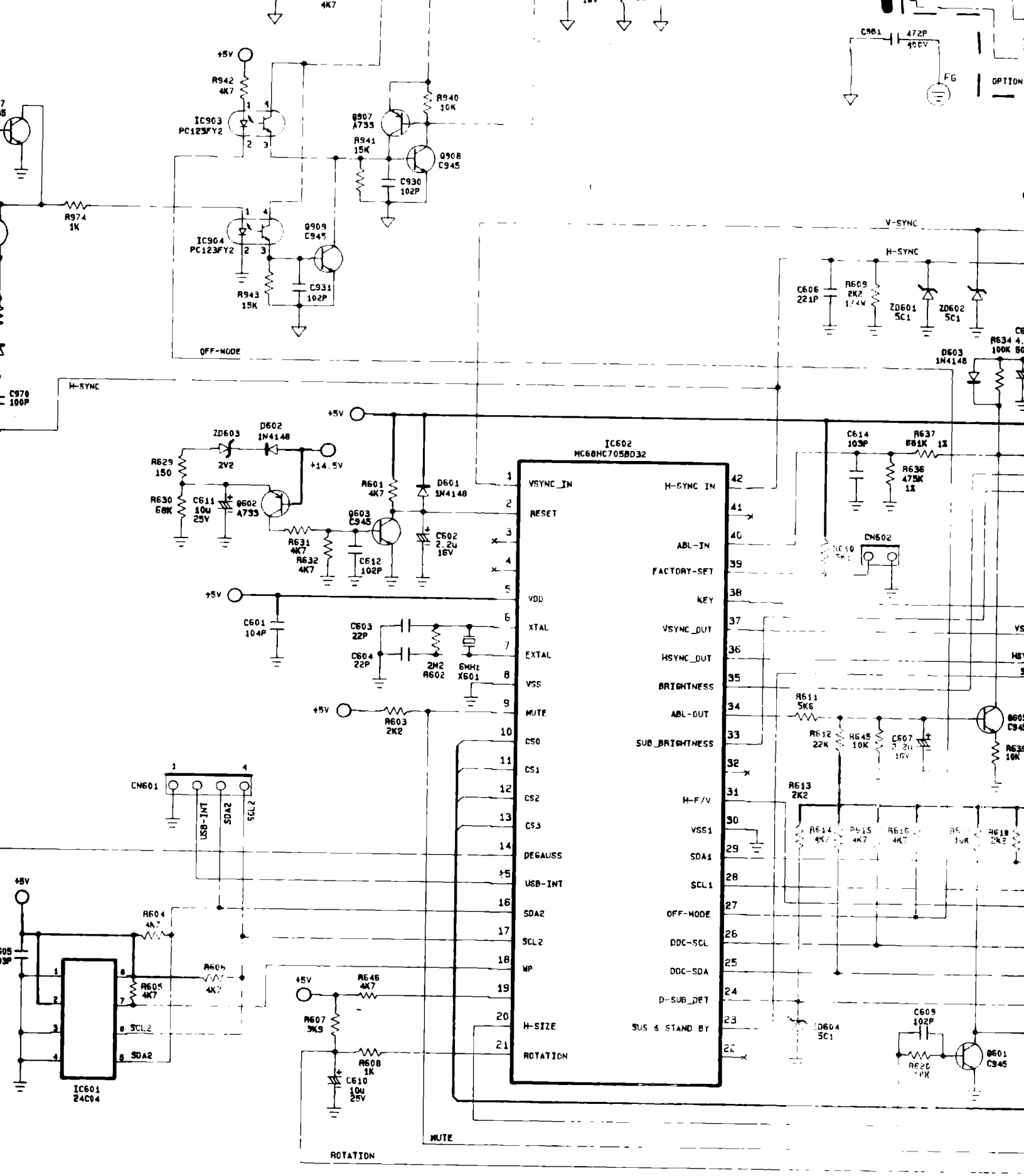
3. ALL CAPACITORS RATING ARE "50V

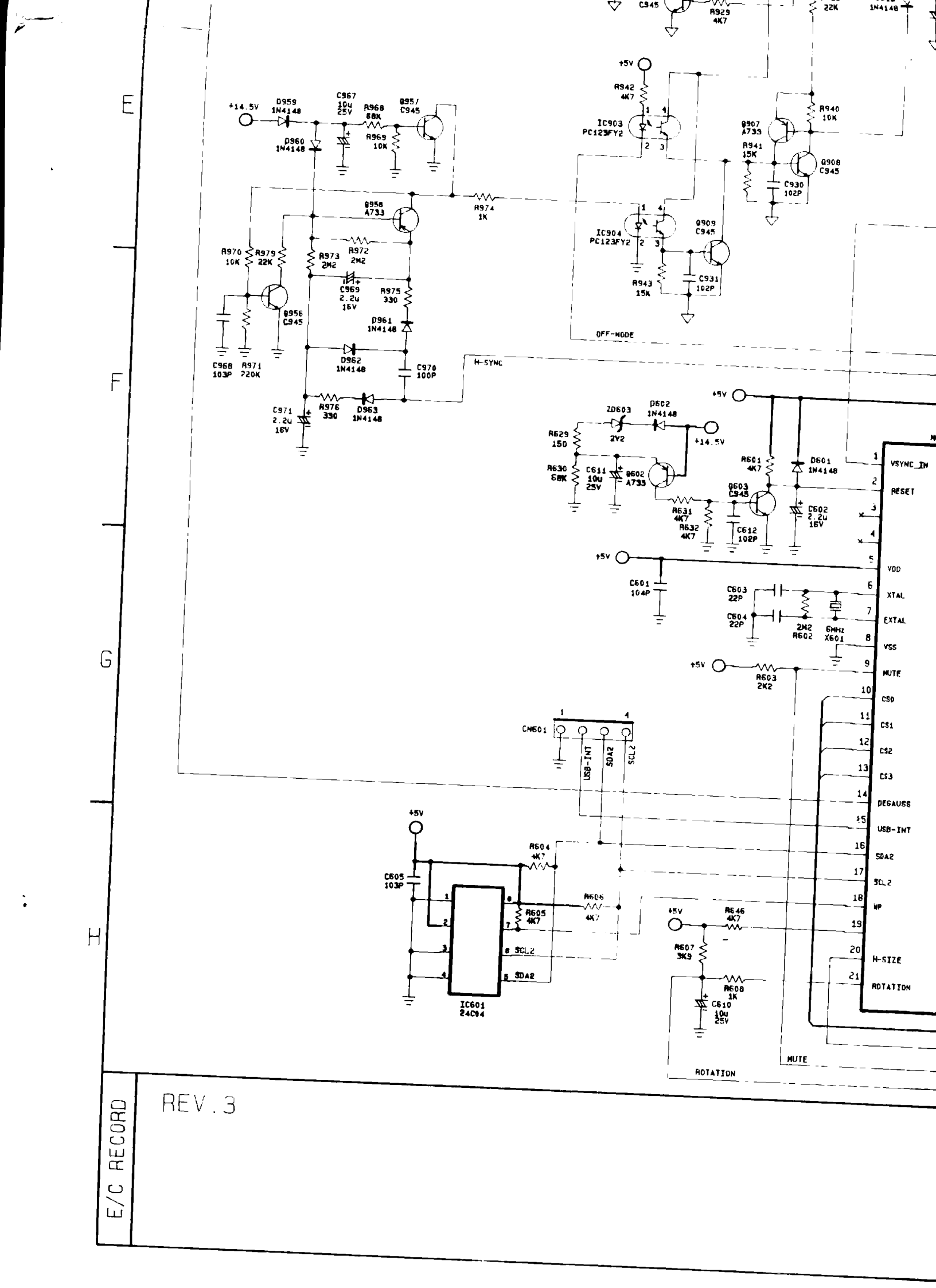
ED	[signature]	July. 2. '98	TECO INFORMATION S	
ED	[signature]	7.9.98		
GN	[signature]	7.9.98	DWG. NAME	TE772 MAIN PWB
IN	WU	7 9 98		

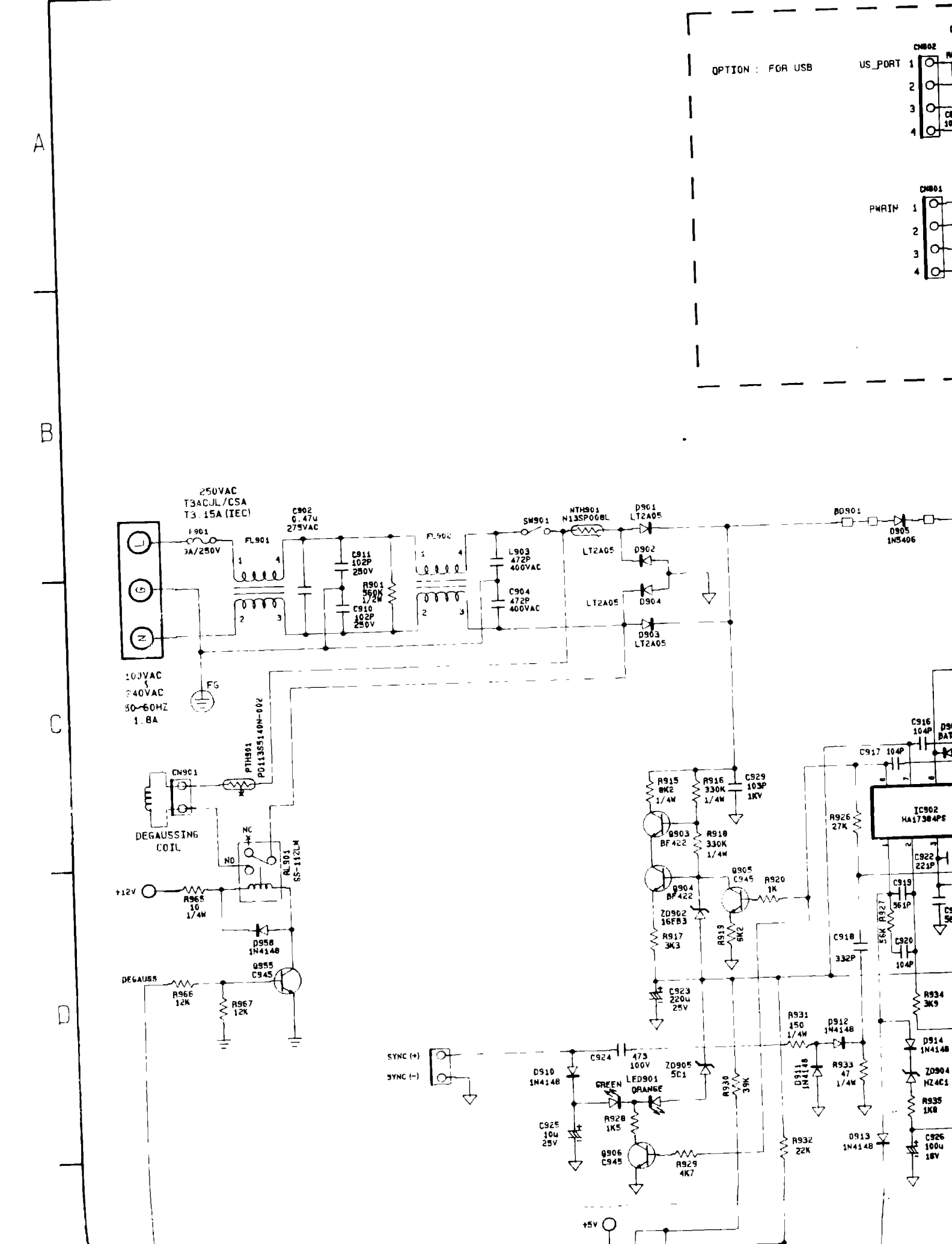


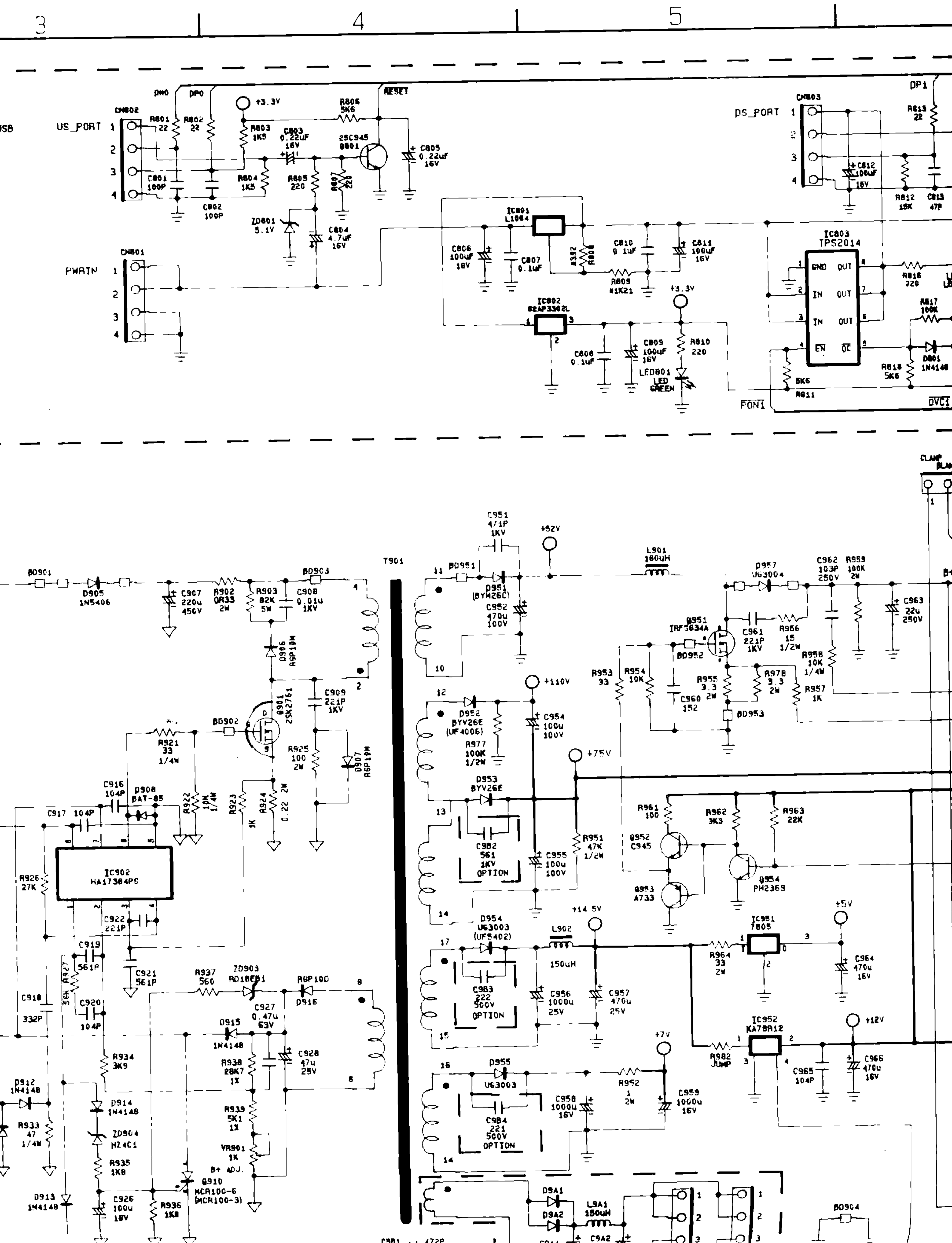
APPROVED		
CHECKED		
DESIGN		
DRAWN	WU	7 9 98"


FG
OPTION : FOR USB V+
CN9A1
CN9A2
SUS
VSYNC
HSYNC
D-SUB_DET DDC_SCL SDA1 H-SYNC GND
ABL-OUT DDC_SDA SCL1 V-SYNC +5V BRIGHTNESS
CN603
11
1
12
V-SYNC
H-SYNC
C606 221P
R609 2K2 1/4W
ZD601 5C1
ZD602 5C1
R633 100
C613 4.7u 50V
R634 100K
D603 1N4148
Q604 A733
C614 103P
R637 681K 1%
R638 10K
R636 475K 1%
ABL
SUB
IC602
C705B032
H-SYNC IN 42
41
ABL-IN 40
FACTORY-SET 39
KEY 38
VSYNC_OUT 37
HSYNC_OUT 36
BRIGHTNESS 35
ABL-OUT 34
SUB_BRIGHTNESS 33
32
H-F/V 31
VSS1 30
SDA1 29
SCL1 28
OFF-MODE 27
DDC-SCL 26
DDC-SDA 25
D-SUB_DET 24
SUS & STAND BY 23
22
CN602
R610
R624 5K6
SW601 X5
MENU
LEFT
UP
DOWN
RIGHT
R625 1K0
R627 1K0
R628 10K
VSYNC
HSYNC
SUS
R611 5K6
R612 22K
R645 10K
C607 2.2u 16V
Q605 C945
R639 10K
R613 2K2
R614 4K7
ZD604 5C1
C609 102P
R620 10K
Q601 C545
R623 27K4 1%
R621 47
R622 47
+12
R642 22K1 1%
R640 1K32 1%
R641 1K21 1%
C655 2.2u 50V
R644 27K4 1%
R643 100K 1%

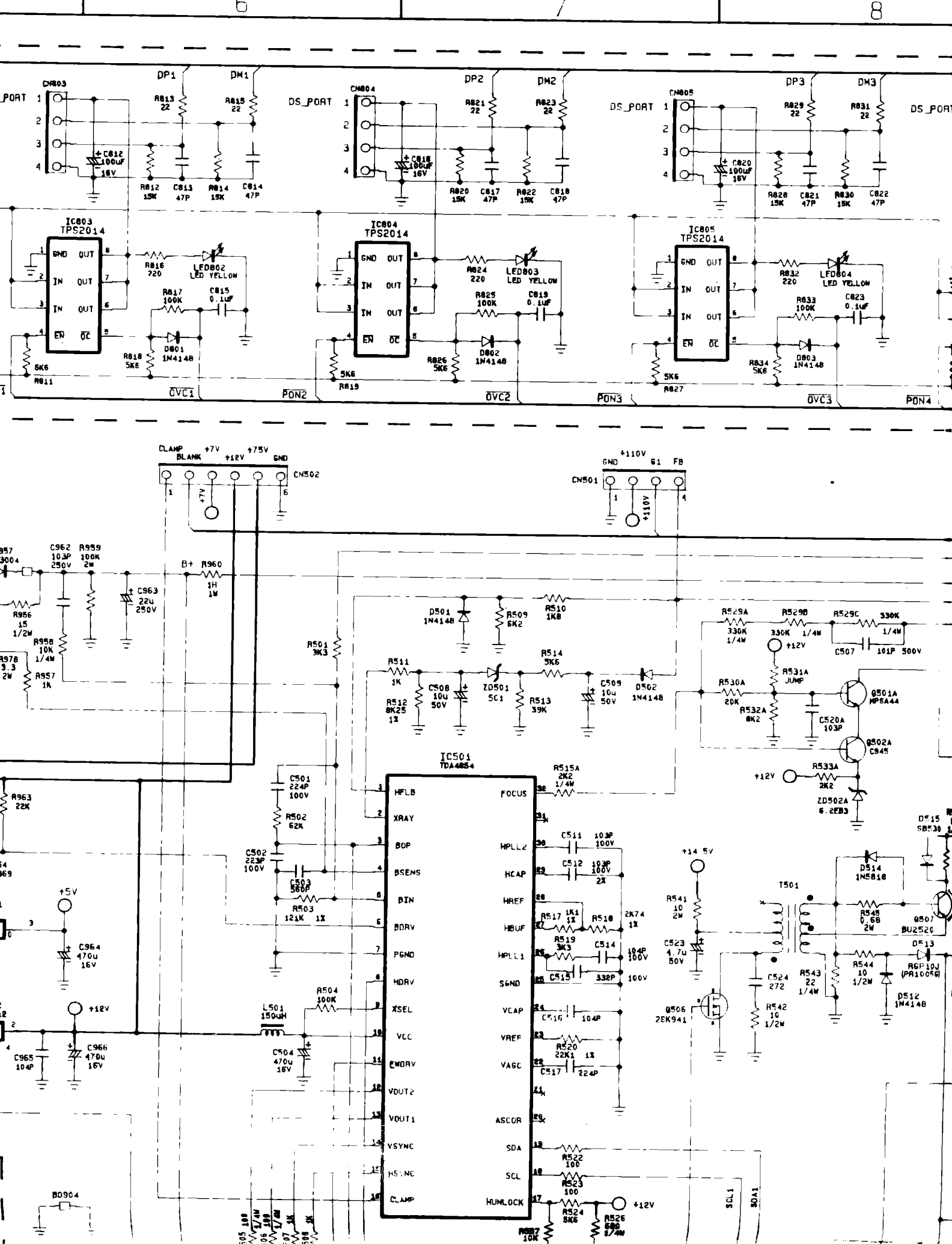

IC602
MC68HC705BD32
VSYNC_IN
RESET
VDD
XTAL
EXTAL
VSS
MUTE
OSO
OS1
OS2
OS3
DEGAUSS
USB-INT
SDA2
SCL2
WP
H-SIZE
ROTATION
H-SYNC IN
ABL-IN
FACTORY-SET
KEY
VSYNC_OUT
HSYNC_OUT
BRIGHTNESS
ABL-OUT
SUB_BRIGHTNESS
H-F/V
VSS1
SDA1
SCL1
OFF-MODE
DDC-SCL
DDC-SDA
D-SUB_DET
SUS & STAND BY
IC601
24C04
CN601
CN602
V-SYNC
H-SYNC
OFF-MODE
MUTE
ROTATION
+5V
+14.5V
FG
OPTION

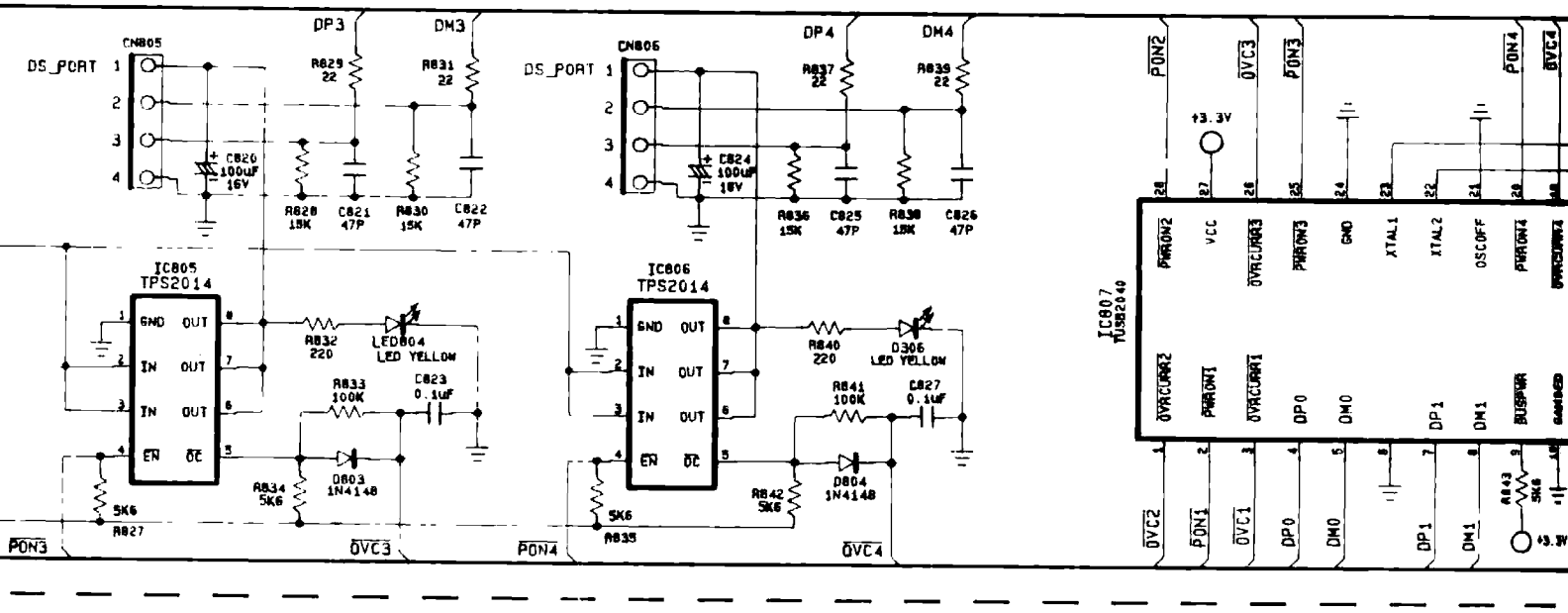

E
F
G
H
+14.5V
D959 1N4148
C967 10u 25V
R968 68K
Q957 C945
D960 1N4148
R969 10K
R974 1K
Q958 A733
R970 10K
R979 22K
R973 2M2
R972 2M2
C969 2.2u 16V
R975 330
Q956 C945
D961 1N4148
C968 103P
R971 220K
D962 1N4148
C970 100P
C971 2.2u 16V
R976 330
D963 1N4148
H-SYNC
+5V
R942 4K7
IC903 PC123FY2
R940 10K
Q907 A733
R941 15K
Q908 C945
C930 102P
IC904 PC123FY2
Q909 C945
R943 15K
C931 102P
OFF-MODE
ZD603 2V2
D602 1N4148
+14.5V
R629 150
R630 68K
C611 10u 25V
Q602 A733
R601 4K7
D601 1N4148
Q603 C945
R631 4K7
R632 4K7
C612 102P
C602 2.2u 16V
C601 104P
C603 22P
C604 22P
2M2 R602
6MHz X601
R603 2K2
CN601
USB-INT
SDA2
SCL2
R604 4K7
C605 103P
R605 4K7
R606 4K7
IC601 24C04
R646 4K7
R607 3K9
R608 1K
C610 10u 25V
VSYNC_IN
RESET
VDD
XTAL
EXTAL
VSS
MUTE
CS0
CS1
CS2
CS3
DEGAUSS
USB-INT
SDA2
SCL2
WP
H-SIZE
ROTATION
MUTE
ROTATION
E/C RECORD
REV.3

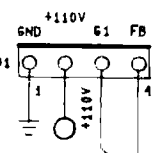

OPTION : FOR USB
US_PORT
CN802
PWRIN
CN801
250VAC
T3ACUL/CSA
T3.15A(IEC)
F901
FL901
C902
0.47u
275VAC
C911
102P
250V
R901
560K
1/2W
C910
102P
250V
FL902
L903
472P
400VAC
C904
472P
400VAC
SW901
NTH901
N13SP008L
D901
LT2A05
D902
D904
D903
BD901
D905
1N5406
100VAC
240VAC
50~60HZ
1.8A
FG
PTH901
P011351140N-002
CN901
DEGAUSSING
COIL
NC
NO
RL901
SS-112LM
+12V
R965
10
1/4W
D956
1N4148
Q955
C945
DEGAUSS
R966
12K
R967
12K
SYNC (+)
SYNC (-)
C924
473
100V
D910
1N4148
GREEN
LED901
ORANGE
R928
1K5
C925
10u
25V
Q906
C945
R929
4K7
ZD905
5C1
R930
39K
R915
8K2
1/4W
R916
330K
1/4W
C929
103P
1KV
Q903
BF422
R918
330K
1/4W
Q904
BF422
Q905
C945
R920
1K
ZD902
16EB3
R917
3K3
R919
8K2
C923
220u
25V
C916
104P
C917
104P
IC902
HA17384PS
R926
27K
C922
221P
C919
561P
R927
56K
C920
104P
C918
332P
R934
3K9
R931
150
1/4W
D912
1N4148
D911
1N4148
R933
47
1/4W
D914
1N4148
ZD904
HZ4C1
R935
1K8
D913
1N4148
C926
100u
16V
R932
22K
+5V

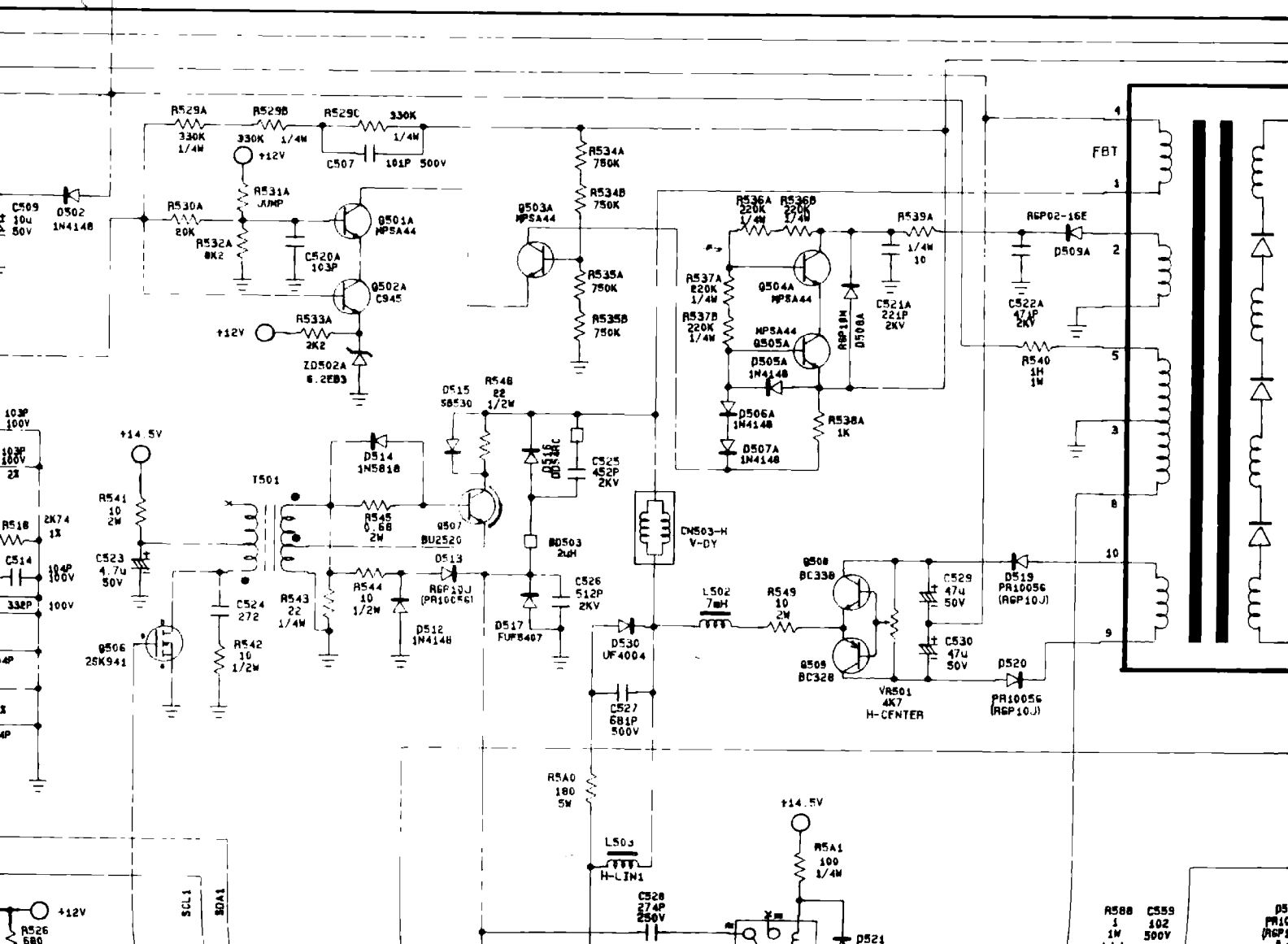


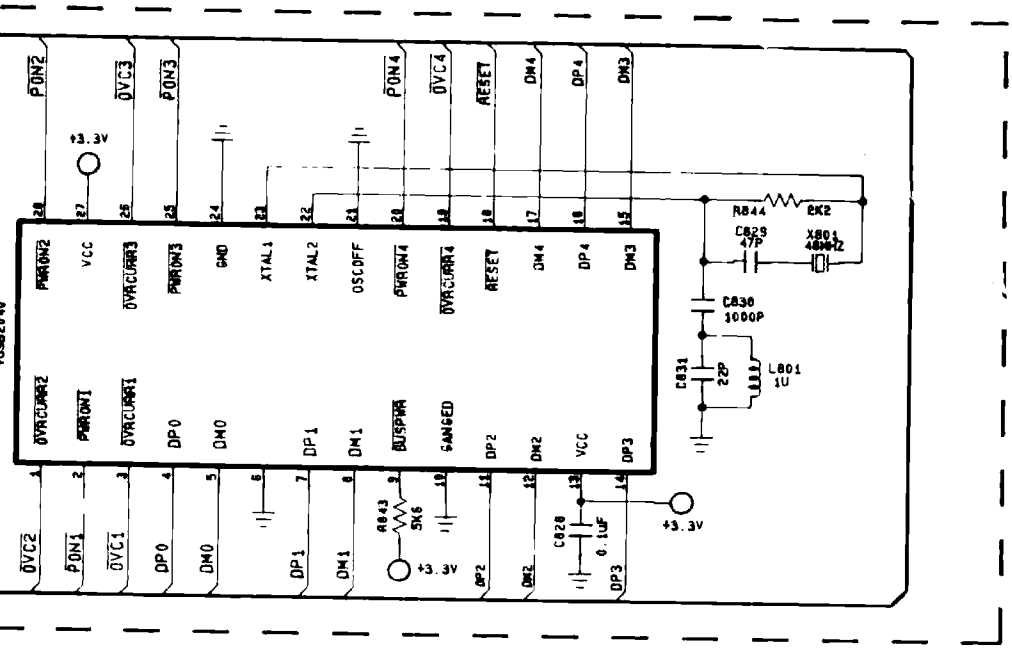
3
4
5
USB
US_PORT
CN802
DM0
DP0
R801 22
R802 22
+3.3V
R803 1K5
R806 5K6
RESET
C803 0.22uF 16V
2SC945 Q801
C805 0.22uF 16V
C801 100P
C802 100P
R804 1K5
R805 220
R807 220
ZD801 5.1V
C804 4.7uF 16V
PWRIN
CN801
IC801 L1084
C806 100uF 16V
C807 0.1uF
R808 392
C810 0.1uF
C811 100uF 16V
R809 1K21
IC802 82AP3302L
+3.3V
C808 0.1uF
C809 100uF 16V
R810 220
LED801 LED GREEN
DS_PORT
CN803
DP1
R813 22
C812 100uF 16V
R812 15K
C813 47P
IC803 TPS2014
GND
IN
EN
OUT
OC
R816 220
R817 100K
R818 5K6
D801 1N4148
5K6
R811
PON1
OVC1
CLAMP
T901
BD901
D905 1N5406
C907 220u 450V
R902 0R33 2W
R903 82K 5W
C908 0.01u 1KV
BD903
D906 RGP10M
C909 221P 1KV
Q901 2SK2761
BD902
R921 33 1/4W
R925 100 2W
D907 RGP10M
C916 104P
D908 BAT-85
C917 104P
R922 10K 1/4W
R923 1K
R924 0.22 2W
R926 27K
IC902 HA17384PS
C922 221P
C919 561P
C921 561P
R927 56K
C920 104P
C918 332P
R937 560
ZD903 RD18EB1
RGP10D
D916
C927 0.47u 63V
D915 1N4148
C928 47u 25V
R934 3K9
R938 28K7 1%
R939 5K1 1%
VR901 1K B+ ADJ.
Q910 MCR100-6 (MCR100-3)
D912 1N4148
R933 47 1/4W
D914 1N4148
ZD904 HZ4C1
R935 1K8
D913 1N4148
C926 100u 16V
R936 1K8
C951 471P 1KV
+52V
L901 180uH
BD951
D951 (BYM26C)
C952 470u 100V
D957 UG3004
C962 103P 250V
R959 100K 2W
C963 22u 250V
Q951 IRFS634A
C961 221P 1KV
R956 15 1/2W
BD952
R958 10K 1/4W
R953 33
R954 10K
C960 152
R955 3.3 2W
R978 3.3 2W
R957 1K
BD953
+110V
D952 BYV26E (UF4006)
C954 100u 100V
R977 100K 1/2W
+75V
D953 BYV26E
C982 561 1KV OPTION
C955 100u 100V
R951 47K 1/2W
R961 100
R962 3K3
R963 22K
Q952 C945
Q953 A733
Q954 PH2369
D954 UG3003 (UF5402)
+14.5V
L902 150uH
C983 222 500V OPTION
C956 1000u 25V
C957 470u 25V
+5V
IC951 7805
R964 33 2W
C964 470u 16V
IC952 KA78R12
+12V
R982 JUMP
C965 104P
C966 470u 16V
+7V
D955 UG3003
R952 1 2W
C958 1000u 16V
C959 1000u 16V
C984 221 500V OPTION
D9A1
D9A2
L9A1 150uH
C9A2
BD904
C981 472P

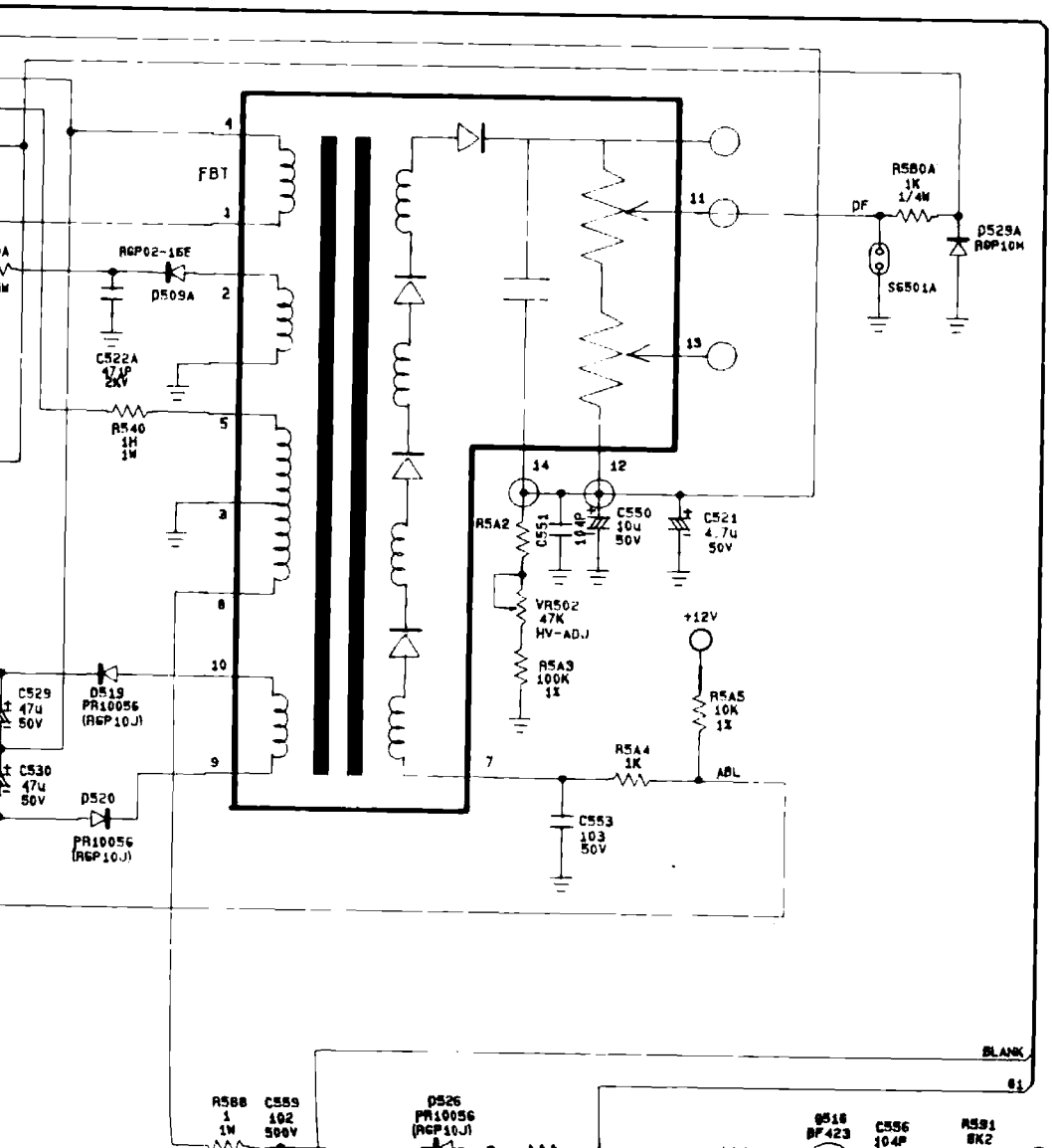

DP1
DM1
DP2
DM2
DP3
DM3
DS_PORT
CN803
CN804
CN805
IC803
IC804
IC805
TPS2014
GND
OUT
IN
EN
OC
LED802
LED803
LED804
LED YELLOW
D801
D802
D803
1N4148
OVC1
OVC2
OVC3
PON2
PON3
PON4
CLAMP
BLANK
+7V
+12V
+75V
GND
CN502
+110V
G1
FB
CN501
IC501
TDA4854
HFLB
XRAY
BDP
BSENS
BIN
BDRV
PGND
HDRV
XSEL
VCC
EWDRV
VOUT2
VOUT1
VSYNC
HSYNC
CLAMP
FOCUS
HPLL2
HCAP
HREF
HBUF
HPLL1
S&ND
VCAP
VREF
VAGC
ASCOR
SDA
SCL
RUNLOCK
B+
+5V
+12V
+14.5V
T501
Q501A
MPSA44
Q502A
C945
Q506
2SK941
ZD501
5C1
ZD502A
6.2EB3
D502
1N4148
D512
1N4148
D514
1N5818
D515
SB530
Q507
BU2520
D513
BGP10J
(PR1005G)
SCL1
SDA1

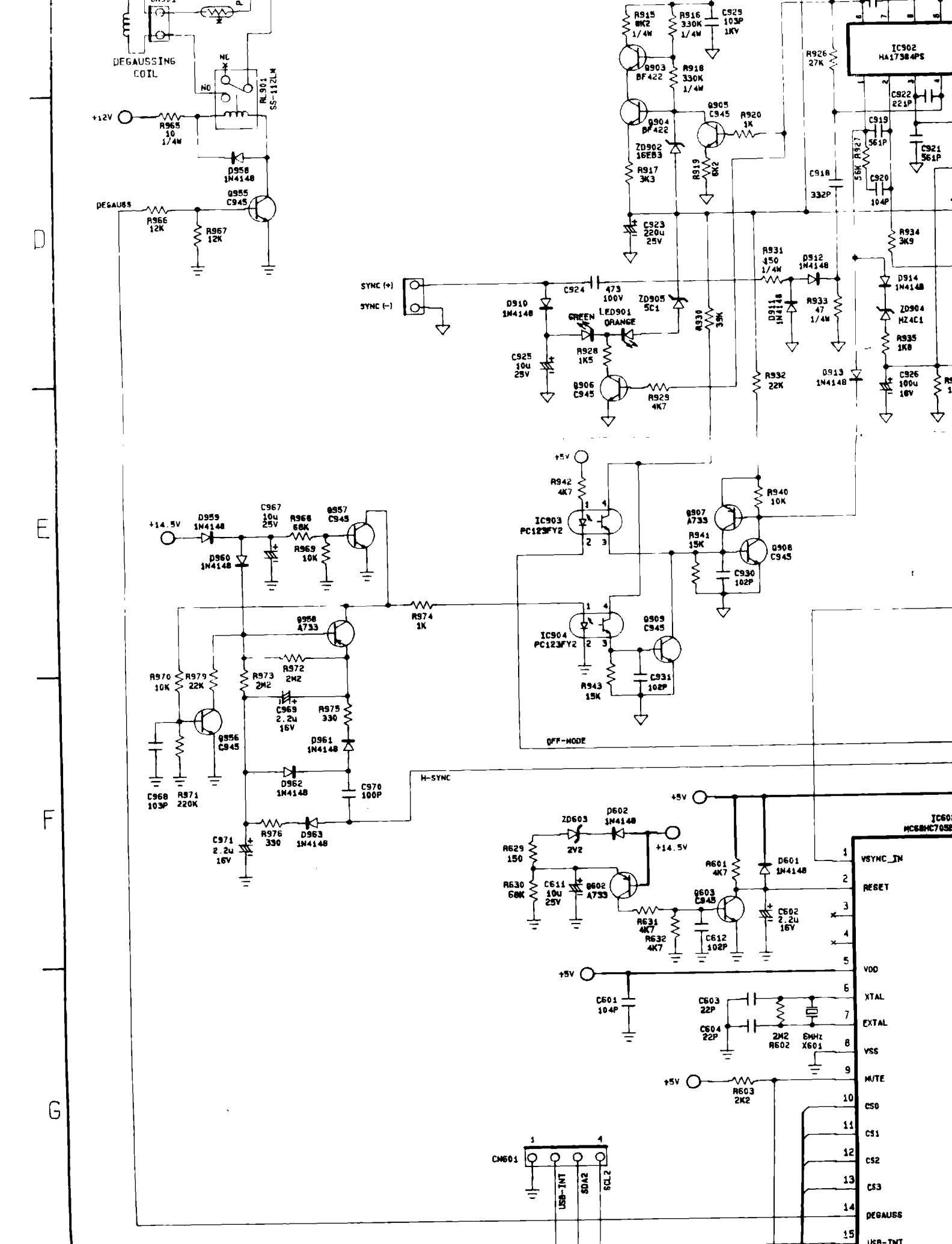

CN805
DS_PORT
DP3
DM3
R829 22
R831 22
R828 15K
C821 47P
R830 15K
C822 47P
C820 100uF 16V
CN806
DS_PORT
DP4
DM4
R837 22
R839 22
R836 15K
C825 47P
R838 15K
C826 47P
C824 100uF 16V
IC805
TPS2014
GND OUT
IN OUT
IN OUT
EN OC
R832 220
LED804 LED YELLOW
R833 100K
C823 0.1uF
D803 1N4148
R834 5K6
R827 5K6
PON3
OVC3
IC806
TPS2014
R840 220
D306 LED YELLOW
R841 100K
C827 0.1uF
D804 1N4148
R842 5K6
R835 5K6
PON4
OVC4
IC807
TUSB2040
PWRON2
VCC
OVRCURR3
PWRON3
GND
XTAL1
XTAL2
OSCOFF
PWRON4
OVRCURR2
PWRFLT
OVRCURR1
DP0
DM0
DP1
DM1
BUSPWR
+3.3V
PON2
OVC3
PON3
PON4
OVC4
OVC2
PON1
OVC1
R843 5K6

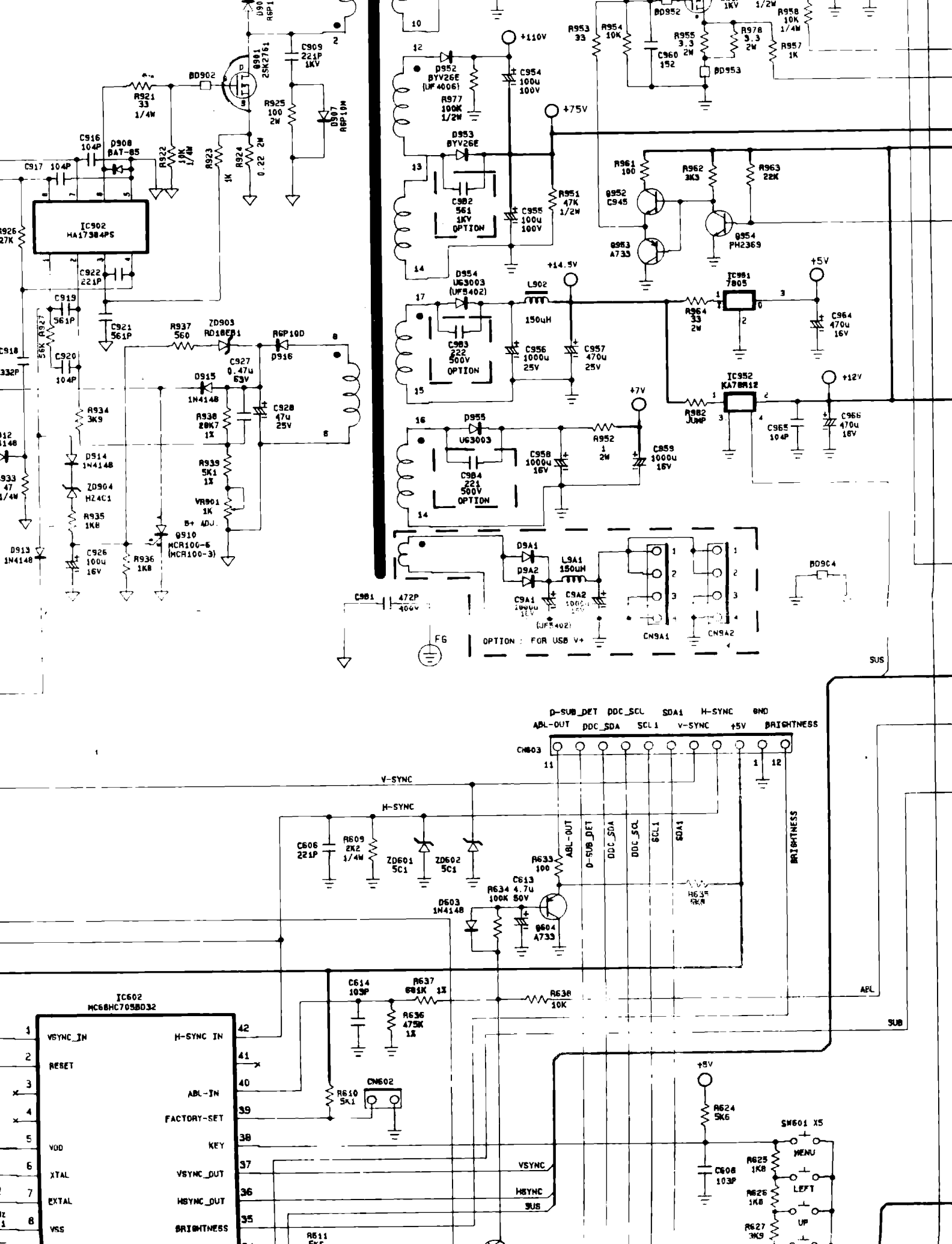

+110V
GND
G1
FB
+110V

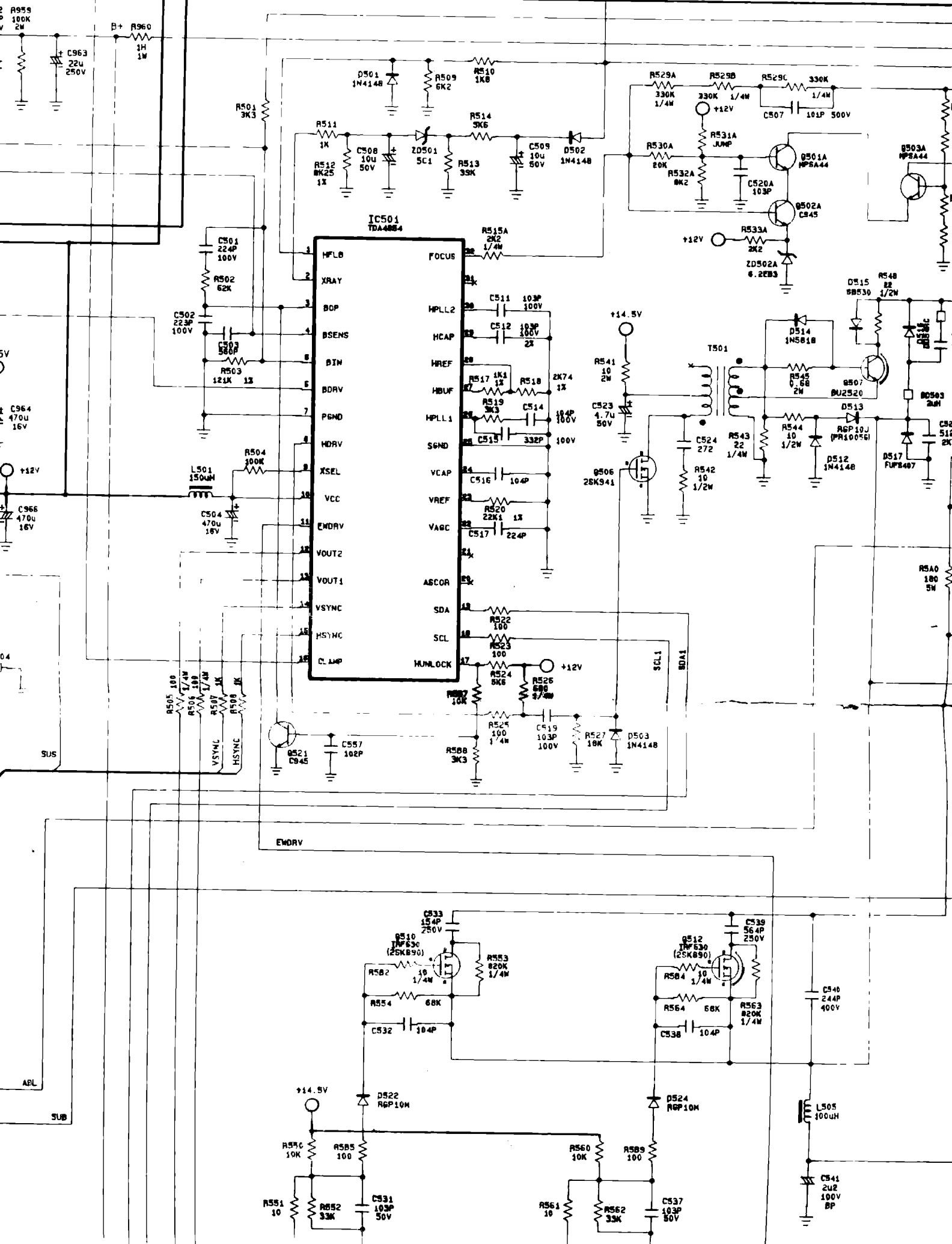

R529A 330K 1/4W
R529B 330K 1/4W
R529C 330K 1/4W
C507 101P 500V
+12V
C509 10u 50V
D502 1N4148
R530A 20K
R531A JUMP
R532A 8K2
Q501A MPSA44
C520A 103P
Q502A C945
R533A 2K2
ZD502A 6.2EB3
R534A 750K
R534B 750K
Q503A MPSA44
R535A 750K
R535B 750K
R536A 220K 1/4W
R536B 220K 1/4W
R537A 220K 1/4W
R537B 220K 1/4W
Q504A MPSA44
Q505A MPSA44
D505A 1N4148
D506A 1N4148
D507A 1N4148
RGP10M D506A
R538A 1K
R539A 1/4W 10
C521A 221P 2KV
RGP02-16E D509A
C522A 47P 2KV
R540 1H 1W
FBT
D515 58530
R548 22 1/2W
C525 452P 2KV
D514 1N5818
T501
R541 10 2W
C523 4.7u 50V
R545 0.68 2W
Q507 BU2520
BD503 2uH
CN503-H V-DY
R544 10 1/2W
D513 RGP10J (PR1005G)
R543 22 1/4W
C524 272
R542 10 1/2W
Q506 2SK941
D512 1N4148
D517 FUF8407
C526 512P 2KV
D530 UF4004
C527 681P 500V
L502 7mH
R549 10 2W
Q508 BC338
Q509 BC328
C529 47u 50V
C530 47u 50V
VR501 4K7 H-CENTER
D519 PR1005G (RGP10J)
D520 PR1005G (RGP10J)
+14.5V
R550 180 5W
L503 H-LIN1
C528 274P 250V
R551 100 1/4W
D521
+12V
R526 680
SCL1
SDA1
R588 1 1W
C559 102 500V

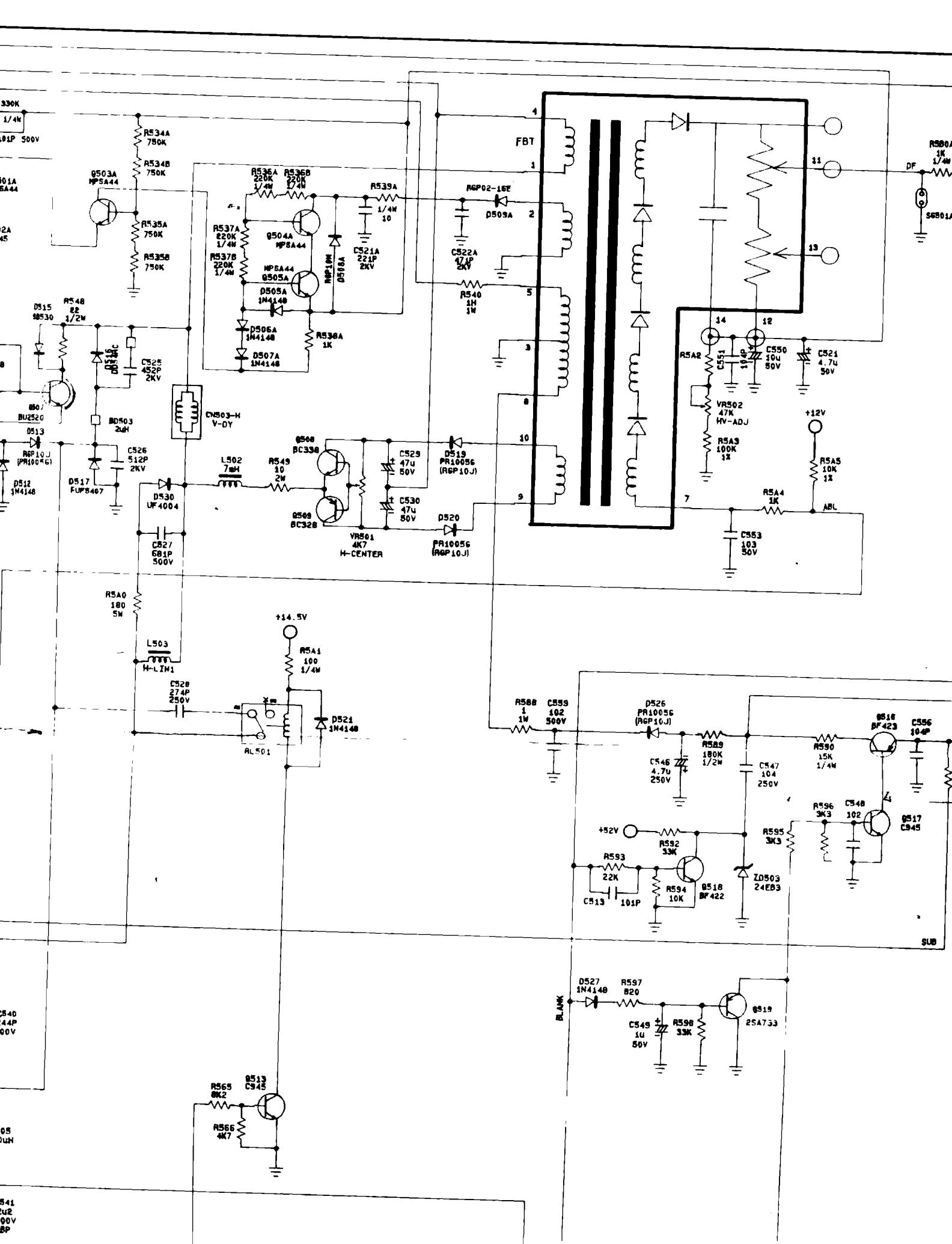

PON2
OVC3
PON3
PON4
OVC4
RESET
DM4
DP4
DM3
+3.3V
R844 2K2
C829 47P
X801 48MHZ
C830 1000P
C831 22P
L801 1U
OVC2
PON1
OVC1
DP0
DM0
DP1
DM1
R843 5K6
C828 0.1UF
DP2
DP3

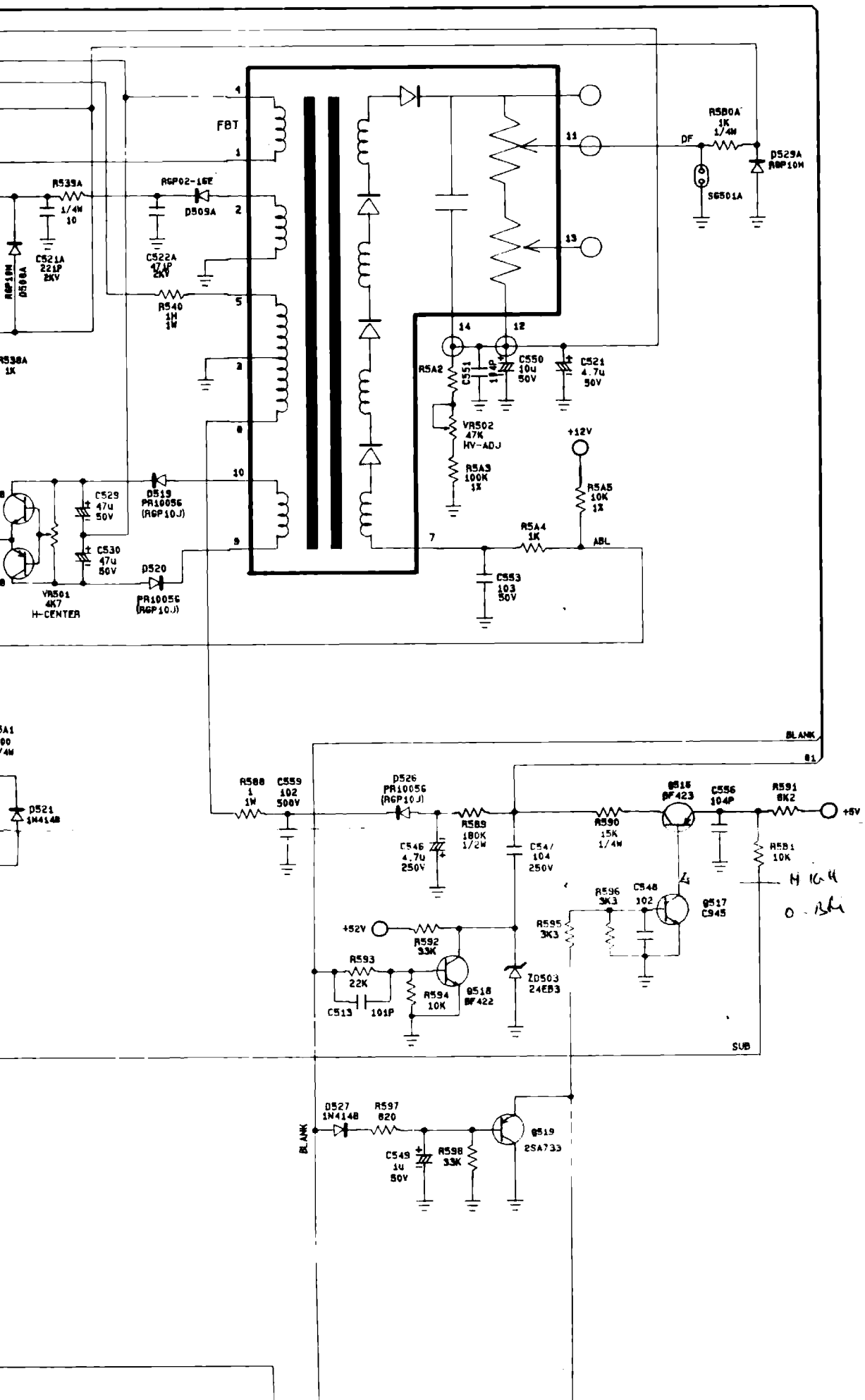

FBT
RGP02-15E
D509A
C522A 4.7P 2KV
R540 1M 1W
R580A 1K 1/4W
DF
S6501A
D529A RGP10M
C550 10u 50V
C521 4.7u 50V
R5A2
C551 104P
VR502 47K HV-ADJ
R5A3 100K 1%
+12V
R5A5 10K 1%
R5A4 1K
ABL
C553 103 50V
C529 47u 50V
D519 PR10056 (RGP10J)
C530 47u 50V
D520 PR10056 (RGP10J)
BLANK
R588 1 1W
C559 102 500V
D526 PR10056 (RGP10J)
D516 BF423
C556 104P
R591 8K2


DEGAUSSING COIL
NC
NO
RL901 SS-112LM
+12V
R965 10 1/4W
D958 1N4148
Q955 C945
DEGAUSS
R966 12K
R967 12K
R915 8K2 1/4W
R916 330K 1/4W
C929 103P 1KV
Q903 BF422
R918 330K 1/4W
Q904 BF422
Q905 C945
R920 1K
ZD902 16EB3
R917 3K3
R919 8K2
C923 220u 25V
IC902 HA17384PS
R926 27K
C922 221P
C919 561P
C921 561P
R927 56K
C918 332P
C920 104P
R934 3K9
SYNC (+)
SYNC (-)
C924 473 100V
D910 1N4148
GREEN
LED901
ORANGE
R928 1K5
C925 10u 25V
Q906 C945
R929 4K7
ZD905 5C1
R930 39K
R931 450 1/4W
D911 1N4148
D912 1N4148
R933 47 1/4W
D914 1N4148
ZD904 HZ4C1
R935 1K8
C926 100u 16V
R932 22K
D913 1N4148
+14.5V
D959 1N4148
D960 1N4148
C967 10u 25V
R968 68K
R969 10K
Q957 C945
+5V
R942 4K7
IC903 PC123FY2
R940 10K
Q907 A733
R941 15K
Q908 C945
C930 102P
R974 1K
IC904 PC123FY2
Q909 C945
R943 15K
C931 102P
OFF-MODE
Q958 A733
R970 10K
R979 22K
R973 2M2
R972 2M2
C969 2.2u 16V
R975 330
D961 1N4148
Q956 C945
C968 103P
R971 220K
D962 1N4148
C970 100P
H-SYNC
C971 2.2u 16V
R976 330
D963 1N4148
ZD603 2V2
D602 1N4148
+14.5V
R629 150
R630 68K
C611 10u 25V
Q602 A733
R601 4K7
D601 1N4148
Q603 C945
C602 2.2u 16V
R631 4K7
R632 4K7
C612 102P
+5V
C601 104P
C603 22P
C604 22P
2M2 R602
6MHz X601
+5V
R603 2K2
CN601
USB-INT
SDA2
SCL2
IC601 MC68HC705B
1 VSYNC_IN
2 RESET
3
4
5 VDD
6 XTAL
7 EXTAL
8 VSS
9 MUTE
10 CS0
11 CS1
12 CS2
13 CS3
14 DEGAUSS
15 USB-INT


IC902
HA17384PS
IC602
MC68HC705B32
VSYNC_IN
RESET
VDD
XTAL
EXTAL
VSS
H-SYNC IN
ABL-IN
FACTORY-SET
KEY
VSYNC_OUT
HSYNC_OUT
BRIGHTNESS
+110V
+75V
+14.5V
+7V
+5V
+12V
IC981
7805
IC952
KA78R12
L902
150uH
L9A1
150uH
D954
UG3003
(UF5402)
D955
UG3003
D952
BYV26E
(UF4006)
D953
BYV26E
D9A1
D9A2
(UF5402)
OPTION : FOR USB V+
CN9A1
CN9A2
BD9C4
D-SUB_DET
DDC_SCL
SDA1
H-SYNC
GND
ABL-OUT
DDC_SDA
SCL1
V-SYNC
+5V
BRIGHTNESS
CN603
V-SYNC
H-SYNC
ZD601
5C1
ZD602
5C1
D603
1N4148
Q604
A733
CN602
SW601 X5
MENU
LEFT
UP
SUS
ABL
SUB
VSYNC
HSYNC


IC501
TDA4854
HFLB
XRAY
BOP
BSENS
BIN
BDRV
PGND
HDRV
XSEL
VCC
EWDRV
VOUT2
VOUT1
VSYNC
HSYNC
CLAMP
FOCUS
HPLL2
HCAP
HREF
HBUF
HPLL1
SGND
VCAP
VREF
VAGC
ABCOR
SDA
SCL
HUNLOCK
+12V
+14.5V
EWDRV
SUS
ABL
SUB
VSYNC
HSYNC
SCL1
SDA1
T501
Q501A MPSA44
Q502A C945
Q503A MPSA44
Q506 2SK941
Q507 BU2520
Q510 IRF630 (2SK890)
Q512 IRF630 (2SK890)
Q521 C945
D501 1N4148
D502 1N4148
D503 1N4148
D512 1N4148
D513 RGP10J (FR1005G)
D514 1N5818
D515 SB530
D517 FUF8407
D522 RGP10M
D524 RGP10M
ZD501 5C1
ZD502A 6.2EB3
L501 150uH
L505 100uH


FBT
R534A 750K
R534B 750K
R535A 750K
R535B 750K
Q503A MPSA44
R536A 220K 1/4W
R536B 220K 1/4W
R537A 220K 1/4W
R537B 220K 1/4W
Q504A MPSA44
Q505A MPSA44
D505A 1N4148
D506A 1N4148
D507A 1N4148
R538A 1K
R539A 1/4W 10
D509A
C521A 221P 2KV
R540 1M 1W
C522A 47P 2KV
D515 BB530
R548 82 1/2W
C525 452P 2KV
Q507 BU2520
BD503 2uH
CN503-H V-DY
D513 RGP10J (PR1004G)
D512 1N4148
D517 FUP5407
C526 512P 2KV
D530 UF4004
C527 681P 500V
L502 7mH
R549 10 2W
Q508 BC338
Q509 BC328
C529 47u 50V
C530 47u 50V
D519 PR1005G (RGP10J)
D520 PR1005G (RGP10J)
VR501 4K7 H-CENTER
R5A0 180 5W
L503 H-LIN1
+14.5V
R5A1 100 1/4W
C528 274P 250V
RL501
D521 1N4148
R5A2
C551 104
C550 10u 50V
C521 4.7u 50V
VR502 47K H/V-ADJ
R5A3 100K 1%
+12V
R5A5 10K 1%
R5A4 1K
ABL
C553 103 50V
DF
R588 1 1W
C559 102 500V
D526 PR1005G (RGP10J)
C546 4.7u 250V
R589 180K 1/2W
C547 104 250V
R590 15K 1/4W
Q516 BF423
C556 104P
R596 3K3
C548 102
Q517 C945
R595 3K3
+52V
R592 33K
R593 22K
C513 101P
R594 10K
Q518 BF422
ZD503 24EB3
SUB
D527 1N4148
R597 820
BLANK
C549 1u 50V
R598 33K
Q519 2SA733
R565 8K2
Q513 C945
R566 4K7


FBT
R539A
1/4W
10
C521A
22UP
2KV
RGP10M
D508A
RGP02-16E
D509A
C522A
47UP
2KV
R540
1M
1W
R538A
1K
R580A
1K
1/4W
DF
D529A
RGP10M
SG501A
R5A2
C551
C550
10u
50V
C521
4.7u
50V
VR502
47K
HV-ADJ
R5A3
100K
1%
+12V
R5A5
10K
1%
R5A4
1K
ABL
C553
103
50V
C529
47u
50V
C530
47u
50V
D519
PR10056
(RGP10J)
D520
PR10056
(RGP10J)
VR501
4K7
H-CENTER
D521
1N4148
BLANK
R588
1
1W
C559
102
500V
D526
PR10056
(RGP10J)
R589
180K
1/2W
C546
4.7u
250V
C547
104
250V
R590
15K
1/4W
Q516
BF423
C556
104P
R591
8K2
+5V
R581
10K
R596
3K3
C548
102
Q517
C945
R595
3K3
+52V
R592
33K
R593
22K
C513
101P
R594
10K
Q518
BF422
ZD503
24EB3
SUB
D527
1N4148
R597
820
Q519
2SA733
C549
1u
50V
R598
33K

COLOR MONITOR (TE772) SPARE PARTS LIST

Date : March 2000

NO.	TECO CODE	DESCRIPTION	Qty.
5	7021404014318	LENS-P TE572	
6	7021453006517	BUTTON-P TE772-1	
7	7021453006614	BUTTON-F TE772-1	
13	7334021701204	FBT CF1182	
14	7339021318712	CF93P 0.56uF 250V	
15	7339021318704	PMH 0.56uF 250V	
16	7339021318615	PDA 4500pF 2000 V	
17	7339021320601	PMH 0.24uF 400V	
18	7339021320202	CF93P 0.24uF 400V	
19	7339021319905	PHS 4500pF 1800 V	
20	7339031305708	PND 5100pF 800 V	
21	7339031305724	CQ93P 5100pF 800 V	
22	7340030502508	RES. 5.6 OHM 5W	
23	7350025401006	TRANS SMPS EE-4215,300UH,0.5X2X32T	
24	7350111107307	TRANS H-DRIVE EI-22,2.9MH,0.25X1X100T	
25	7352500002912	RELAY RPA-12	
26	7373001219207	SIGANL CONNERTOR D15H12/1560,BLK	
27	7021614003432	RUBBER FOOT TE718	
28	2AA1607000712	KA78R12	
29	2AA0205600245	IC (32P) TDA4854	
30	2AA1100600025	IC (14P) HA17324	
31	2AA1100600238	IC (14P) LM324N	
32	2AA1202100264	IC (3P) L7808CV	
33	2AA1306500248	IC (9P) TDA4866	
34	2AA1501600206	IC (16P) MC141545PS/LSC4518P2	
35	2AA1602500997	IC (3P) KA7808	
36	2AC0100500025	IC (8P) HA17384PS	
37	2AC0205200248	IC (32P) TDA4885	
38	2AC0205400204	IC (24P) MC68HC705BD32(OTP)	
39	2AM0703500321	IC (8P) 24LC04B/P	
40	2DS0204700065	DIODE SI DD54RC	
41	2DS020690U327	1N5818	
42	2DS0207200985	DIODE SI UG3004	
43	2DS0208000980	DIODE SI UG3003	
44	2DS0208000980	DIODE SI UG3003	
45	2DS040900U674	DIODE SI LT2A05,U	
46	2DS0503200206	MUR460	
47	2DS0509400266	DIODE SI MDV04-600	
48	2DS0511400991	ER306	
49	2RS1PB0H47JP7	RES. RS1PB0R47J,P	
50	2RS2PB33H0JJ3	RES. RS2PB33HJ,J(SS)	
51	2RS2PB3H30JJ9	RES. RS2PB3R2HJ,J(SS)	
52	2SP0301004801	PHOTO-COUPLER PC123FY2	
53	2TC000220T027	2SC1906TZ	
54	2TC0509300023	2SC5390	
55	2TD0503800020	2SD1135	
56	2TF0303800042	TR. FET YTAF630	
57	2TF0305400084	TR. FET 2SK2761-01MR	
58	2TX0003500208	TR. MPSA44	
59	2TX0506600242	TR. BU2520AX	
60	2TX05066F0245	TR. BU2520AF	
61	2TX990040T248	BFQ221	
62	2TX990050T242	BFQ241	
63	2TX9900600247	BFQ222	
64	73400601002T0	RES. RF1/2PG100HJ,T	
65	73400601024T7	FUSIBLE RES. 33 OHM 1/2W	
66	73400603003U4	FUSIBLE RES. 1 OHM 1/3W	
67	73400603003U4	RES. RF1PG1HJ,T	
69	7TE772BMF119	MAIN PWB ASSY	
70	7TE772BNG115	CRT PWB ASSY	