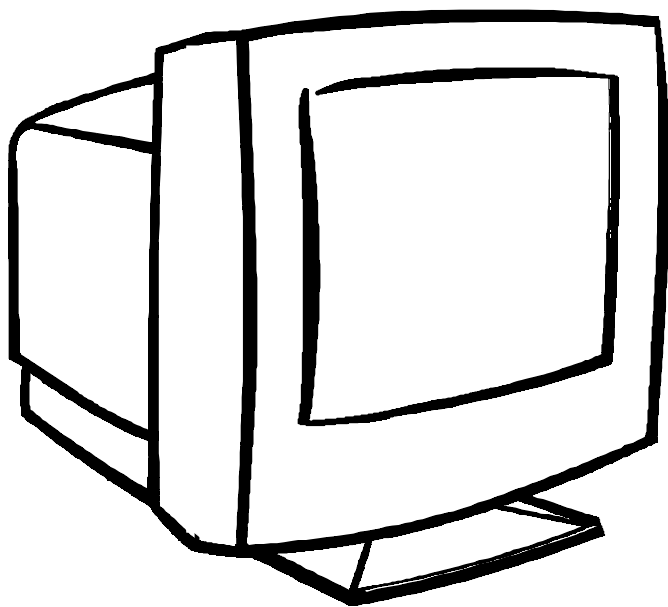


# SERVICE MANUAL

## COLOR MONITOR

HP D8911A



HEWLETT  
PACKARD

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# 1. SPECIFICATIONS FOR C993 SERIES COLOR MONITOR

1. CRT : 48.2CM(19") 90 Deflection, 29mm Neck, 0.26mm Dot Pitch, Non-Glare Screen
2. Viewable image Size: 45.7CM (18") diagonal
3. Display Color: Unlimited Colors
4. External Controls:  
Power On/Off, OSD key, Function knob: Contrast, Brightness, H-Size, H-Center, V-Size, V-Center, ZOOM, Pincushion, Trapezoid, Pin-Balance, Parallelogram, Rotation, Moire Reduce, Recall, Degaussing, Color Temperature.
5. Input Video Signal

|              | Mode 1     | Mode 2     | Mode 3     | Mode 4     | Mode 5     |
|--------------|------------|------------|------------|------------|------------|
|              | RGB Analog | RGB Analog | RGB Analog | RGB Analog | RGB Analog |
| Horiz. Sync: | TTL Level  | TTL Level  | TTL Level  | TTL Level  | TTL Level  |
|              | Negative   | Negative   | Positive   | Positive   | Positive   |
| Vert. Sync : | TTL Level  | TTL Level  | TTL Level  | TTL Level  | TTL Level  |
|              | Positive   | Negative   | Positive   | Positive   | Positive   |
| Horizontal:  | 640 (H)    | 720 (H)    | 800 (H)    | 800 (H)    | 1024 (H)   |
| Vertical :   | 480 (V)    | 400 (V)    | 600(V)     | 600 (V)    | 768 (V)    |
| Fh (kHz) :   | 31.47      | 31.47      | 46.875     | 53.67      | 60.02      |
| Fv (Hz) :    | 60         | 70         | 75         | 85         | 75         |

|              | Mode 6     | Mode 7     | Mode 8     | Mode 9     |
|--------------|------------|------------|------------|------------|
|              | RGB Analog | RGB Analog | RGB Analog | RGB Analog |
| Horiz. Sync: | TTL Level  | TTL Level  | TTL Level  | TTL Level  |
|              | Positive   | Positive   | Positive   | Positive   |
| Vert. Sync : | TTL Level  | TTL Level  | TTL Level  | TTL Level  |
|              | Positive   | Positive   | Positive   | Positive   |
| Horizontal:  | 1024 (H)   | 1280 (H)   | 1280 (H)   | 1600 (H)   |
| Vertical :   | 768 (V)    | 1024 (V)   | 1024 (V)   | 1200 (V)   |
| Fh (kHz) :   | 68.6       | 79.6       | 91.1       | 93.8       |
| Fv (Hz) :    | 85         | 75         | 85         | 75         |

6. Display Size  
Horizontal: 346 mm  
Vertical: 260 mm
7. Scanning Frequencies  
Horizontal: 30KHz ~ 96KHz  
Vertical: 50 Hz ~ 160 Hz
8. Factory Preset Timings: 9  
User Timings: 20
9. Misconvergence  
Center: 0.3 mm Max.  
Corner: 0.4 mm Max.
10. Video Dot Rate: 202 MHz

11. Power Source:  
Switching Mode Power Supply  
AC 100 ~240V, 50/60Hz Universal Type
12. Operating Temperature: 0°C to 40°C Ambient
13. Humidity : 10% to 85% Relative, Non-Condensing
14. Weight: 20.0 Kgs(Net), 23.8Kgs(Gross)
15. Dimensions Monitor:  
Carton: 574(W) × 537(H) × 594(D) mm  
Monitor: 460(W) × 466(H) × 470(D) mm
16. External Connection :  
15 Pin D-type Connector AC Power Cord
17. Regulations: TÜV/ERGO, TÜV/GS, CE, NEMKO  
TCO'99

## **2. PRECAUTIONS AND NOTICES**

### **2-1 SAFETY PRECAUTIONS**

1. Observe all caution and safety related notes located inside the display cabinet.
2. Operation of the display with the cover removed, may cause a serious shock hazard from the display power supply. Work on the display should not be attempted by anyone who is not thoroughly familiar with precautions necessary when working on high voltage equipment.
3. Do not install, remove or handle the picture tube in any manner unless shatter-proof goggles are worn. People who are not so equipped should be kept away while handling picture tube. Keep picture tube away from the body while handling.
4. The picture tube is constructed to limit X-RAY radiation to 0.5 mR/HR. For continued protection, use the designated replacement tube only, and adjust the voltages so that the designated maximum rating at the anode will not be exceeded.
5. Before returning a serviced display to the customer, a thorough safety test must be performed to verify that the display is safe to operate without danger or shock. Always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as screw heads.  
Test method for current leakage is described as follow.
  - (a) Plug the AC line cord directly into rated AC outlet (do not use a line isolation transformer during this check).
  - (b) Use an AC voltmeter having 5000 ohms per volt or with more sensitivity in the following manner: Connect a 1500 ohms 10 Watt resistor, paralleled by a 0.15UF, AC type capacitor between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts simultaneously. Measure the AC voltage across the combination of 1500 ohms resistor and 0.15UF capacitor.
  - (c) Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part.
  - (d) Voltage measured must not exceed 0.5 volts RMS. This corresponds to 0.35 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

### **2-2 PRODUCT SAFETY NOTICE**

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-RAY radiation or other hazards.

### **2-3 SERVICE NOTES**

1. When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
2. When replacing a high wattage resistor (more than 1/2W of metal oxide film resistor) in circuit board, keep the resistor about 10mm (1/2 in) away from circuit board.
3. Keep wires away from high voltage or high temperature components.
4. Keep wires in their original position so as to reduce interference.

## HIGH VOLTAGE WARNING

Operation of monitor outside of cabinet or with back removed may cause a serious shock hazard. Work on this model should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. Many B plus and high voltage terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis. Maintain interconnecting ground lead connections between chassis and picture tube dag when operating chassis.

Certain HV failures can increase X-ray radiation. Monitor should not be operated with HV levels exceeding the specified rating for the chassis type. The maximum operating HV specified for the chassis used in this monitor is

$$26KV \pm 1KV$$

with a line voltage of 120/240 VAC. Higher voltage may also increase possibility of failure in HV supply.

It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the monitor that could cause a rise in high voltage or operating supply voltages. No changes should be made to the original design of the monitor. Components shown in the shaded areas on the schematic should be replaced with exact factory replacement parts. The use of unauthorized substitute parts may create a shock, fire or other hazard.

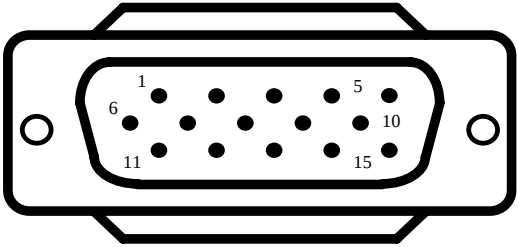
To determine the presence of high voltage, use an accurate, high impedance, HV meter connected between second anode lead and CRT dag grounding device. When servicing the High Voltage System, remove static charge from it by connecting a 10K ohm resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead.(AC line cord disconnected from AC power outlet.)

The picture tube used in this monitor employs integral implosion protection. Replace with tube of the same type number for continue safety. Do not lift picture tube by the neck. Handle the picture tube only after discharging the high voltage completely.

### 3. OPERATING INSTRUCTIONS

This procedure gives you instructions for installing and using the C993 color display.

1. Position the display on the desired operation and plug the power cord into a convenient AC outlet. Three-wire power cord must be shielded and is provided as a safety precaution as it connects the chassis and cabinet to the electrical conduit ground. If the AC outlet in your location does not have provisions for the grounded type plug, the installer should attach the proper adapter to ensure a safe ground potential.
2. Connect the 15-pin color display shielded signal cable to your signal system device and lock both screws on the connector to ensure firm grounding. The connector information is as follow:



15 - Pin Color Display Signal Cable

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION         |
|---------|-------------|---------|---------------------|
| 1.      | RED         | 9.      | NC                  |
| 2.      | GREEN       | 10.     | GND                 |
| 3.      | BLUE        | 11.     | SYNC. GND           |
| 4.      | GND         | 12.     | SDA                 |
| 5.      | GND         | 13.     | HORIZ. SYNC         |
| 6.      | GND-R       | 14.     | VERT. SYNC (* VCLK) |
| 7.      | GND-G       | 15.     | SCL                 |
| 8.      | GND-B       |         |                     |

3. Apply power to the display by turning the power switch to the "ON" position and allow about thirty seconds for display tube warm-up. The Power-On indicator lights when the display is on.
4. With proper signals feed to the display, a pattern or data should appear on the screen, adjust the brightness and contrast to the most pleasing display.
5. This monitor has power saving function following the VESA DPMS. Be sure to connect the signal cable to the PC.
6. If your C993 Series color display requires service, it must be returned with the power cord.

## 4. ADJUSTMENT

### 4-1 ADJUSTMENT CONDITIONS AND PRECAUTIONS

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.

### 4-2 MAIN ADJUSTMENTS

| NO. | FUNCTION           |         | LOCATION       | DESIGNATION |
|-----|--------------------|---------|----------------|-------------|
| 1.  | 14.5V ADJ          |         | PCB - MAIN     | VR901       |
| 2.  | B + ADJ            |         | PCB - MAIN     | VR902       |
| 3.  | SCREEN ADJ         |         | FLY BACK TRANS | T402        |
| 4.  | FOCUS ADJ          |         | FLY BACK TRANS | T402        |
| 5.  | ABL ADJ            |         | PCB - MAIN     | VR701       |
| 6.  | SUB-BRIGHTNESS ADJ |         | PCB - MAIN     | VR702       |
|     | -MENU              | 2       | PCB - MAIN     | SW103       |
|     | -UP                | ►       | PCB - MAIN     | SW105       |
| 7.  | FUNCTION ADJ       | -DOWN ◀ | PCB - MAIN     | SW104       |
|     | -EXIT              | 1       | PCB - MAIN     | SW102       |

### 4-3 ADJUSTMENT METHOD

1. 14.5V, B + & HV voltage adjustment:
  - A. Chrome-2000 Signal generator or PC equivalent set mode 1, VGA 640X480 pattern 1.0 .
  - B. Connect a DC Volt meter between TP901 or D922 cathode and ground, then adjust VR901 to be 14.5VDC.
  - C. Connect a DC Volt meter between TP902 or D925 cathode and ground, then adjust VR902 to be 60.5 VDC.
  - D. Connect a DC Volt meter between TP701(G1) and ground, Brightness set to max. Then adjust VR702 to be -50 VDC.
2. Factory preset Timings Adjustment:
  - A. Press MENU Key to show OSD window press Up or Down Key to switch the functional controls.
  - B. Press the Up Key to select the "ZOOM" function, then press the MENU Key. While do not release the MENU Key until the OSD window changed to the Factory preset window.
  - C. The Factory preset window contains the following functional controls. Select one of the control. Then press the Up/Down Key to adjust it's value for the optimum picture.

| FACTORY PRESET                                                                                                                                                                                                                                                                                               |            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| H: 36.51kHz                                                                                                                                                                                                                                                                                                  | V: 51.34Hz |
| <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div></div> <div></div> <div></div> <div><b>Vs</b></div> <div></div> <div><b>Vc</b></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>                                                                    |            |
| <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>                                                                                                                          |            |
| <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div><b>9300</b></div> <div></div> <div><b>6500</b></div> </div>                                                                |            |
| <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-left: 10px;"><b>Tm</b></div> </div>                                                                                                                                                                            |            |
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">080</div> <div style="border: 1px solid black; flex-grow: 1; position: relative;"> <div style="background: linear-gradient(to right, black 45%, gray 45% 55%, gray 55%); height: 10px; width: 100%;"></div> </div> </div> |            |

|           |               |             |                   |
|-----------|---------------|-------------|-------------------|
|           | CONTRAST      |             | H-MOIRE REDUCE    |
|           | BRIGHTNESS    |             | V-MOIRE REDUCE    |
|           | H-CENTER      |             | R-GAIN            |
|           | H-SIZE        |             | G-GAIN            |
|           | V-CENTER      |             | B-GAIN            |
|           | V-SIZE        |             | R-BIAS            |
|           | ZOOM          |             | G-BIAS            |
|           | TOP COMER     |             | R-BIAS            |
|           | BOTTOM COMER  | <b>9300</b> | COLOR TEMPERATURE |
|           | PINCUSHION    | <b>6500</b> | COLOR TEMPERATURE |
|           | TRAPEZOID     |             | DEGAUSS           |
|           | PIN-BALANCE   |             | OSD EXIT          |
|           | PARALLELOGRAM |             | RETURN            |
|           | ROTATION      |             | Vs LINEAR         |
| <b>Vs</b> | SUB-V-SIZE    |             | Vc LINEAR         |
| <b>Vc</b> | SUB V-CENTER  |             |                   |

MENU Key to Quit the OSD window. Mean while the new setting data will be saved in the memory.

E. To switches the input signal to the other Timing Mode. Please follow step C ~ D to get the optimum picture.

F. Select the " " RETURN function and press the MENU Key, then the Factor Preset window will be returned to the original OSD window.(user's operating condition)

G. The setting data of the CONTRAST, BRIGHTNESS, PIN-BALANCE, PARALLELOGRAM, ROTATION, COLOR TEMPERATURE are common mode saved in the memory. Don't needed adjust it individual at every timing Mode and save in the memory.

H  Model select: for factory only, service engineer can't changed.

### 3. White Balance, Luminance adjustment:

#### A. Bias (Low Luminance) adjustment:

- Set mode 2 640 X 480 Fh: 31KHz full white pattern.
- To make the adjustment condition is under the Factory preset window.  
Same as step 2-C.
- Warm up more than 20 minutes.
- Brightness  set to maximum. Contrast  set to min. full white pattern, then adjust FBT screen VR to make  $Y = 1.0FL \pm 0.2FL$
- Brightness set to raster just cutoff, adjust contrast to be 4FL, then adjust G-Bias , B-Bias ,  
R-Bias , to make the setting value is (20), then adjust the R.G.B Bias individual to the color temperature  $x = 281 \pm 10$ ,  $y = 311 \pm 10$ .

#### B. Gain (High light) adjustment:

- Set mode 2 640 X 480 Fh: 31.5KHz full white pattern.
- Brightness set to raster just cutoff and set the contrast to max.
- Adjust G-Gain , B-Gain , R-Gain , to make color temperature  $x = 283 \pm 10$ ,  $y = 293 \pm 10$ .

C. Recheck item A&B to make sure both of them in spec. Finally select OSD function to the 9300°K function, then press the MENU Key. To make the setting data saved in the memory.

D. The adjustment of 6500°K white Balance, May follow step A ~ C , with the  $x = 313 \pm 10$ ,  $y = 329 \pm 10$ .

#### E. Full white luminance:

- Set mode 2 640 X 480 Fh: 31.5KHz full white pattern.
- Image Size : H:346±4mm V:260±4mm.
- Brightness set to raster just cut off and set the contrast to max.
- Adjust VR701 to the luminance at 30 FL  $\pm 2FL$ .

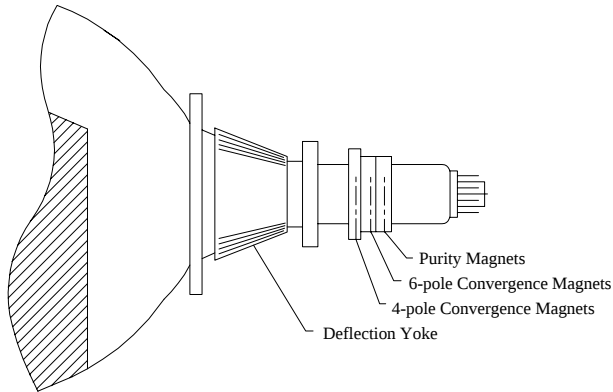
### 4. Focus Adjustment:

- Set mode 2 640 X 480 Fh: 31.5KHz with character full page.
- Adjust brightness to center and contrast to max.
- Then adjust focus VR1 to a fine vertical line.
- Adjust focus VR2 to a fine horizontal line.
- Repeat step C & D..

### 5. Purity Adjustment

- Be sure that the display is not being exposed to any external magnetic fields.
- Ensure that the spacing between the Purity, Convergence, Magnet, (PCM), assembly and the CRT stem is 29mm .(See below diagram)
- Produce a complete, red pattern on the display. Adjust the purity magnet rings on the PCM assembly to obtain a complete field of the color red. This is done by moving the two tabs in such a manner that they advance in an opposite direction but at the same time to obtain the same angle between the two tabs, which should be approximately 180'.
- Check the complete blue and complete green patterns to observe their respective color purity. Make minor adjustments if needed.

## RELATIVE PLACEMENT OF TYPICAL COMPONENTS



### 6. Convergence adjustment

- A. Produce a magenta crosshatch on the display.
- B. Adjust the focus for the best overall focus on the display.  
Also adjust the brightness to the desired condition.
- C. Vertical red and blue lines are converged by varying the angle between the two tabs of the 4 pole magnets on the PCM assembly. (See above diagrams)
- D. Horizontal red and blue lines are converged by varying the two tabs together, keeping the angle between them constant.
- E. Produce a white crosshatch pattern on the display.
- F. Vertical green and magenta lines are converged by varying the angle between the two tabs of the 6-pole magnets.
- G. Horizontal green and magenta lines are converged by varying the two tabs together, keeping the angle between them constant.

## 5. CIRCUIT DESCRIPTION

### 5-1 MICRO CONTROLLER CIRCUIT

#### MICRO Controller

The IC101 contains a 6502 8-bit CPU core, 256 bytes of RAM, 16K bytes of ROM, 14 channel 8 bit PWM D/A converters, 2 channel A/D converters for key detection, one 8 bit pre-loadable base timer, internal H-sync and V-sync signals processor providing mode detection, watch-dog timer preventing system from abnormal operation, and an I2C bus interface.

#### H/V sync signals processor

The functions of the sync processor include polarity detection, H-SYNC & V-SYNC signals counting, Programmable SYNC signals output, free running signal generator. Pin39/Pin40 are for the H-SYNC and V-SYNC input, Pin32/Pin33 will output the same signal as input sync signal without delay, and the polarity are setting in the positive. When no signal input, the Pin32 will output a 61HZ V-SYNC free run signal. The Pin33 will output a 62.5KHz H-SYNC free run signal. for the monitor testing use.

## **On Screen Display Controller**

The IC103 is designed for display the built-in characters or fonts onto monitor screen. The display operation is by transforming data and control information from micro controller to RAM through a serial data interface.

Pin2 is used to control the internal oscillator frequency by DC voltage input from external low pass filter (R125, C114, R161) and filter (R126, C115) is used to regulate the appropriate bias current for internal oscillator the resonate at specific dot frequency.

Pin5 is input the horizontal fly back pulse, for PLL generator tracking.

Pin6 is left floating, I2C bus is enabled. Otherwise the SPI bus is enabled.

Pin7 the external data transfer through this pin to internal display registers and control registers

Pin8 the clock-input pin is used to synchronize the data transfer.

Pin10 is input the vertical flyback pulse for synchronizing the vertical position.

Pin12 is output a blanking signal to cut off external R.G.B signals of VGA while this chip is displaying characters or windows.

Pin13, Pin14, Pin15 is used to output the OSD (B.G.R) video signal.

## **5-2 DEFLECTION CIRCUIT**

The deflection circuit is achieved by a high performance and efficient solution IC 401 (TDA4856) for this monitor. The concept is fully DC controllable and can be used in applications with a micro-controller solutions.

The TDA 4856 provides sync. Processing with full auto sync. capability, a flexible SMPS block and an extensive set of geometry control facilities. Further the IC generates the drive waveforms for DC coupled vertical boosters to the TDA 4866 [ref Page-28].

### **Horizontal Oscillator**

The oscillator is of the relaxation type and requires a capacitor of 10nF C403 at pin 29. The maximum oscillator frequency is determined by a resistor R403 from pin 28 to ground. A resistor R402 from pin27 to pin28 defines the frequency range.

### **PLL 1 Phase Detector**

The phase detector is a standard one using switched current sources. It compares the middle of H-sync. with a fixed point on the oscillator saw-tooth voltage. The PLL loop filter c401, R401, C402 is connected to Pin26.

### **PLL2 Phase Detector**

This phase detector is similar to the PLL1 detector and compares the line flyback pulse at pin 1 with the oscillator saw-tooth voltage. The PLL2 detector thus compensates for the delay in the external H-deflection circuit by adjusting the phase of the HDRV output pulses. The phase between H-flyback and H-sync can be controlled at pin30.

### **X-ray Protection**

The X-ray protection input pin2 provides a voltage detector with a precise threshold. If the voltage exceeds this threshold for a certain time, an internal latch switches the whole IC into protection mode. In this mode several pins are forced into defined states:

Pin7 (HDRV) is floating

Pin6 (BDRV) is floating

Pin12, 13 ( VOUT 1, 2) are floating

Pin16 (CLBL) provides a continuous blanking signal.

### **Vertical Oscillator**

The vertical free –running frequency is determined by the resistor R608 at pin23 and capacitor C604 at pin24. Usually the free-running frequency should be lower than the minimum trigger frequency.

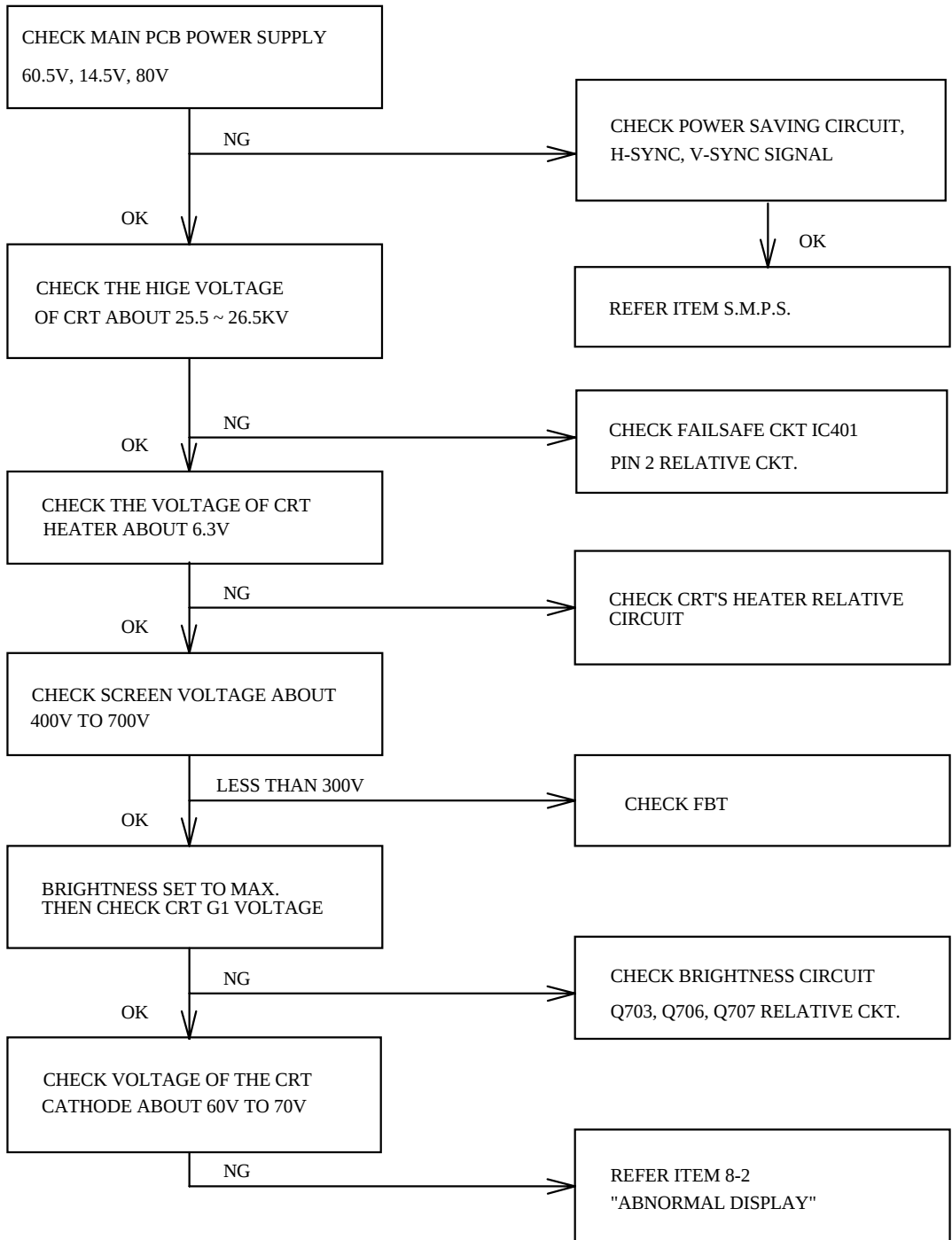
5-3 TRANSISTOR & DIODE CIRCUIT

| LOCATION         | FUNCTION AL DESCRIPTION                       |
|------------------|-----------------------------------------------|
| D101             | For C102 Discharge                            |
| Q101             | For LED Indicator Control                     |
| D418             | Protection Diode for Snubber Clip Diode ZD401 |
| D431             | Protection Diode for B+ Control               |
| D405, D424       | Speed up for Q403                             |
| D406, D407       | Supply a bias for D408                        |
| D408             | Damping Diode and Modulation Diode            |
| Q416             | B+ MUTE                                       |
| D414~ D417,D419  | Buffer Diode for IC403                        |
| D421 ~ D423      | Detected for Q406                             |
| Q401             | B+ Mute Control                               |
| Q402             | Horizontal Driver                             |
| Q403             | Horizontal Out Put                            |
| Q404, Q406       | A differential Amp for Drive Q405             |
| Q405             | DarlingtonTransistor for H-Size Control       |
| Q407             | Horizontal Linearity Correction Control       |
| Q410, Q412, Q417 | Horizontal S-Correction Control               |
| Q418, Q420       | Horizontal S-Correction Control               |
| ZD601,ZD602      | VF Voltage Divider                            |
| D707             | Mixing Diode                                  |
| D703             | Buffer Diode                                  |
| D704             | Rectifier for 250V Supply                     |
| D705             | Protection Diode for Q708                     |

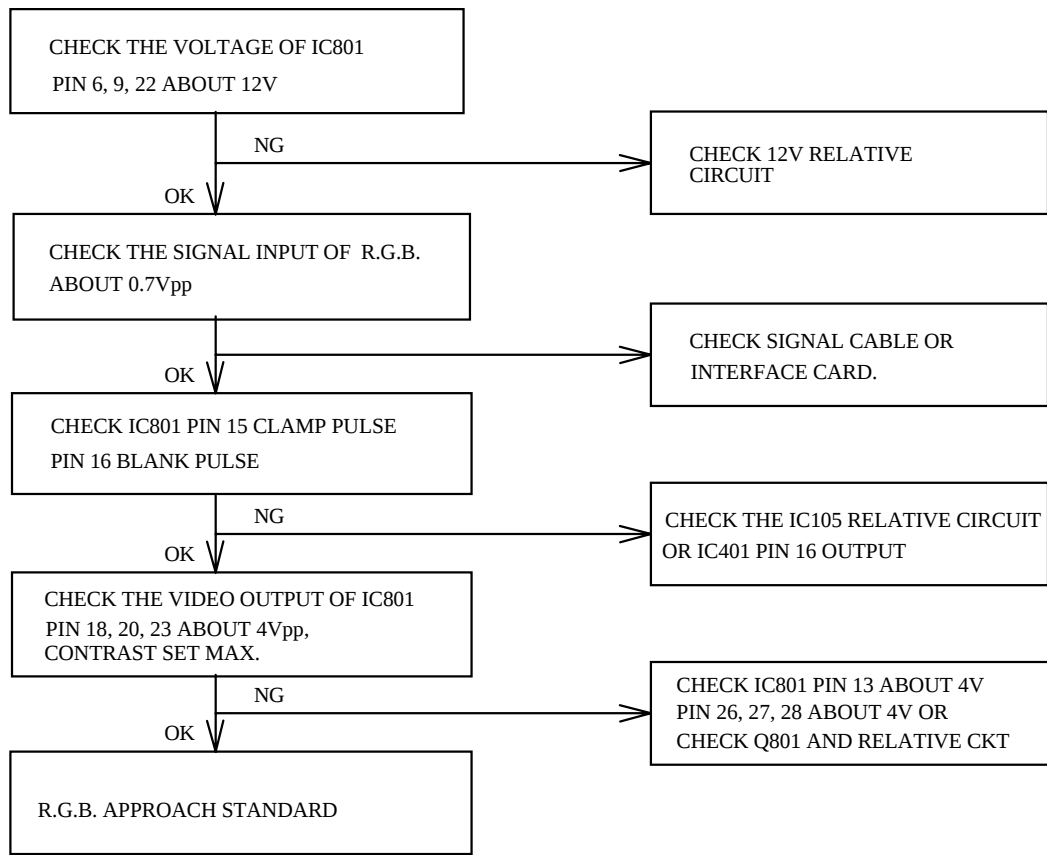
| LOCATION    | FUNCTION AL DESCRIPTION                                           |
|-------------|-------------------------------------------------------------------|
| D706,D708   | Rectifier for -200V Supply                                        |
| Q707        | Picture Mute Control AMP                                          |
| Q703, Q706  | Brightness Control CKT                                            |
| Q708        | Vertical Dynamic Focus Control AMP                                |
| D901 ~ D904 | Bridge Rectifier for AC Source                                    |
| D909        | Rectifier for Start Power Supply                                  |
| D910        | Clip Diode for Snubber CKT                                        |
| D911        | IC901 VCC Supply                                                  |
| D913        | Speed UP for Q901                                                 |
| D914        | Synchronous Trigger for Power Supply                              |
| D918 ~ D919 | Rectifier for Output Voltage Supply                               |
| D921 ~ D923 | Rectifier for Output Voltage Supply                               |
| D924        | Clip Diode for Trigger CKT                                        |
| D925        | Rectifier for B+ Supply                                           |
| D926, D927  | Raster Position Control                                           |
| D939        | Clip Diode for Snuffer Pulse                                      |
| ZD901       | Protection Diode                                                  |
| ZD902       | Protection Diode                                                  |
| ZD903       | Protection Diode                                                  |
| Q901        | MOS FET for Switching Power Control                               |
| Q904, Q906  | Start up CKT for IC901                                            |
| Q908, Q916  | To Turn 6.3V Supply Off when the Off Mode is Required             |
| Q909, Q910  | To Turn 14.5V Supply Off when the Off or Suspend Mode is Required |
| Q911        | MOS FET for B+ Control                                            |
| Q912, Q915  | Push Pull Driver for Q911                                         |
| Q914        | Pre-Amplifier for Q912, Q915                                      |
| D817 ~ D819 | DC Restoration for CRT Bias Adjustment                            |
| D814 ~ D816 | Protection Diode for Q808, Q809, Q810, Q811, Q812, Q813           |
| Q801        | A.B.L Control                                                     |
| Q817 ~ Q819 | DC Restoration for CRT Bias Adjustment                            |

## 6.TROUBLE SHOOTING CHART

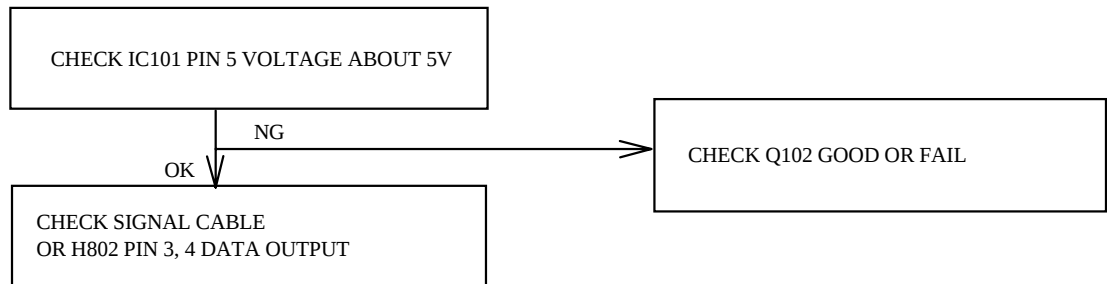
### 6-1 NO RASTER, CRT RELATIVE CIRCUIT PROBLEMS



## 2.ABNORMAL VIDEO LEVEL ON SCREEN

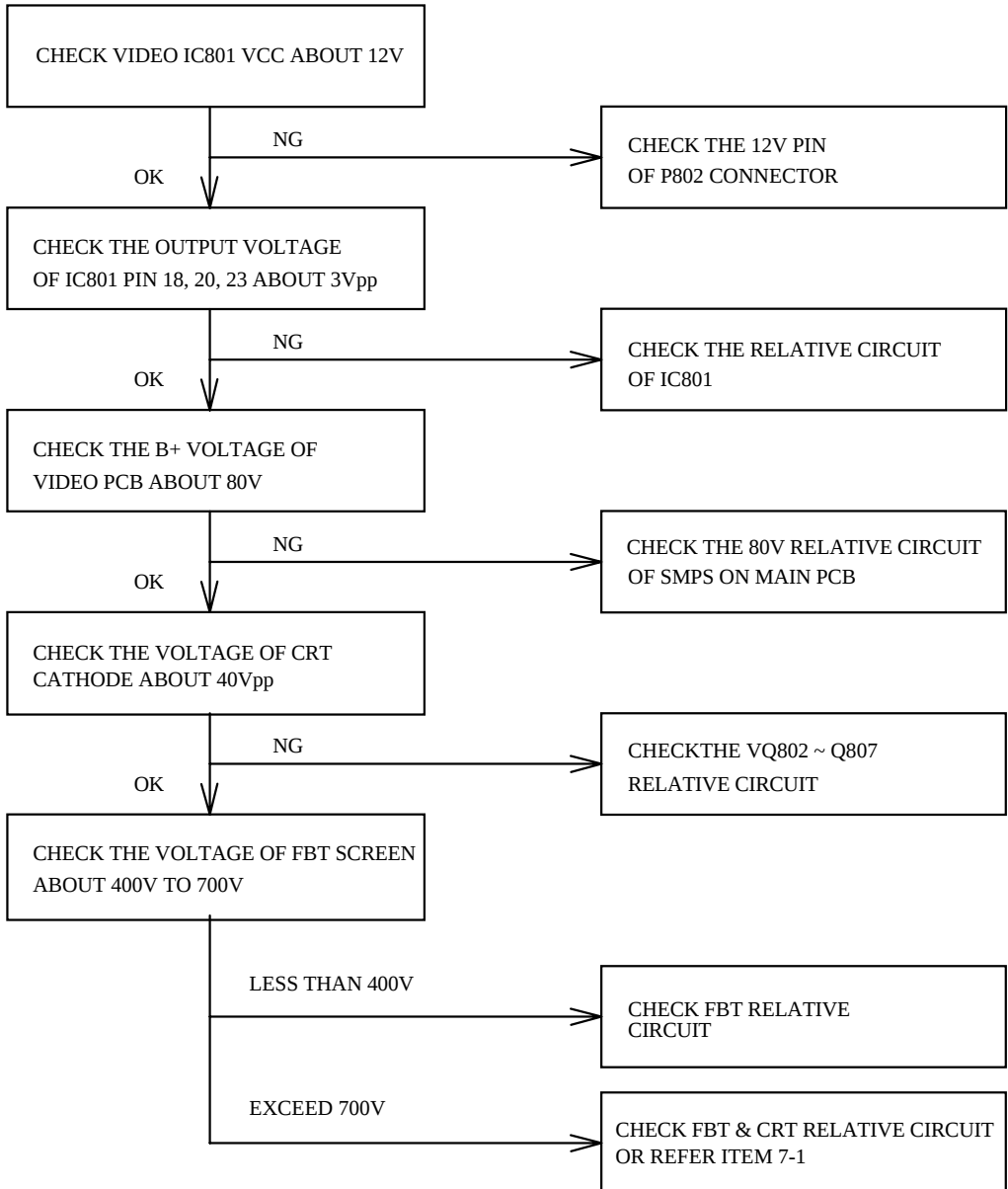


## 3. ABNORMAL DDC (PLUG & PLAY)

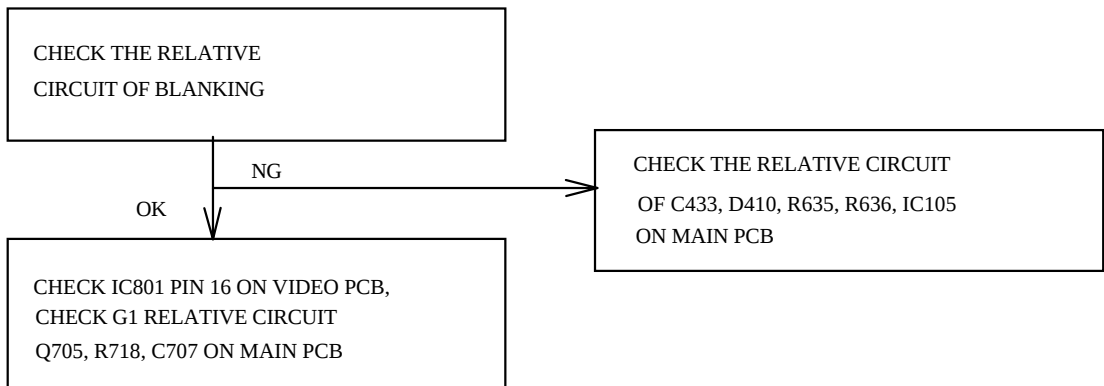


## 6-2 ABNORMAL DISPLAY

### 1.NO SIGNAL ON SCREEN

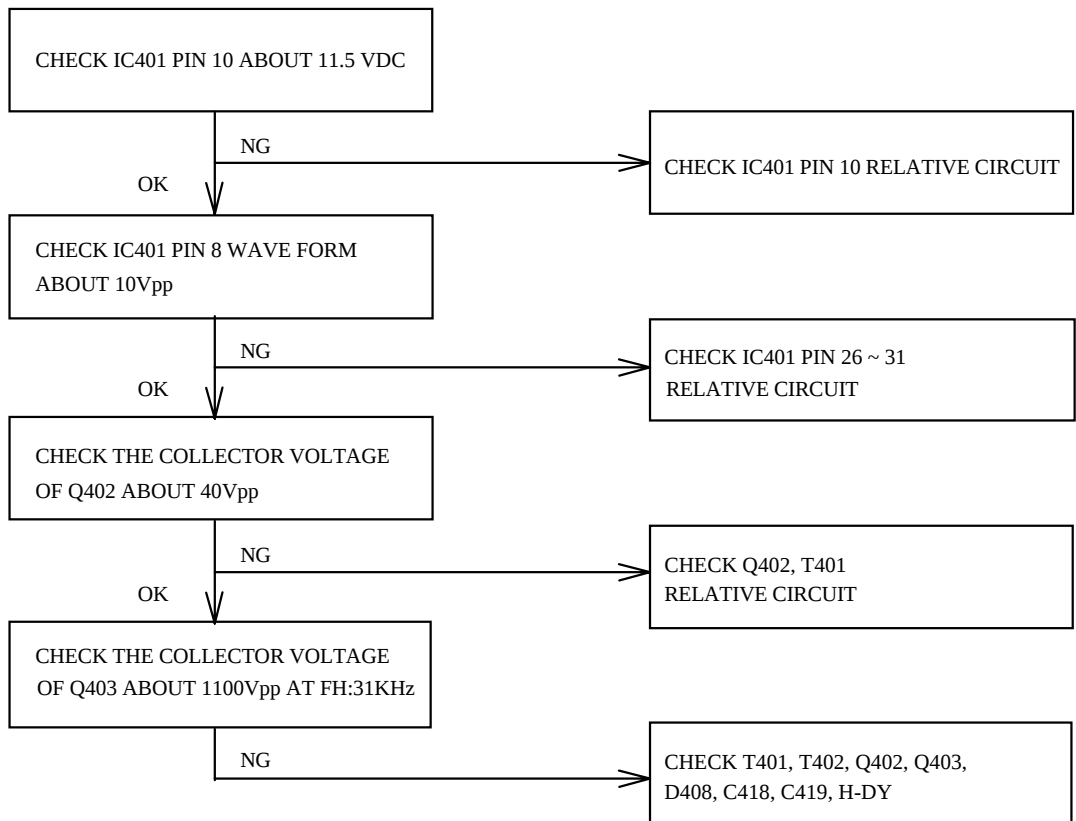


### 6-3 NO BLANKING



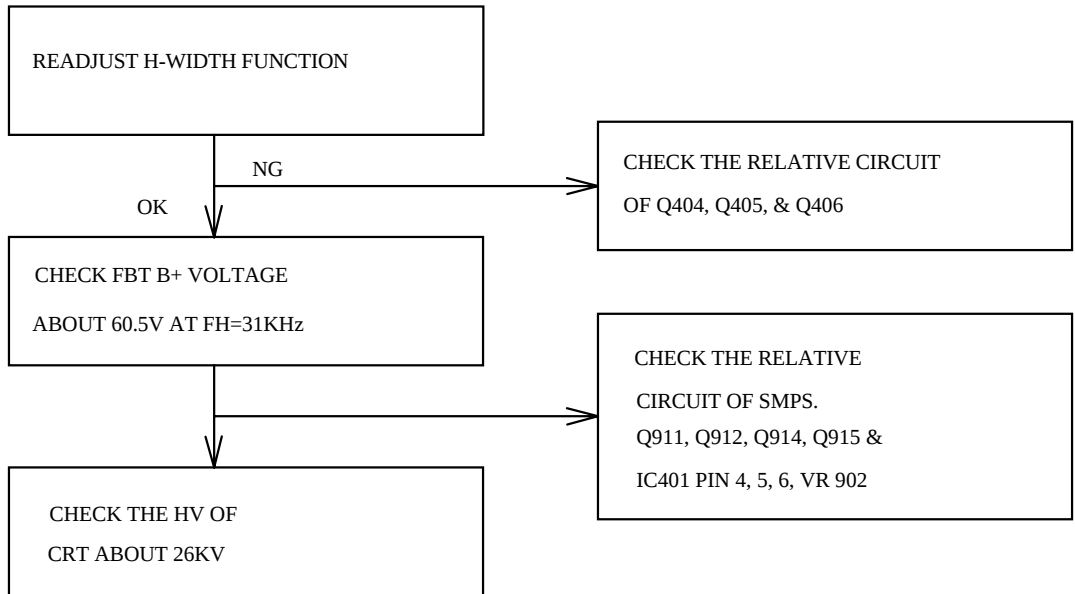
### 6-4 HOR./OSC/DEF/HV CIRCUIT FAULT

#### 1. NO RASTER (DISCONNECT WITH SIGNAL CABLE)



## 6-5 ABNORMAL HORIZONTAL DEFLECTION

### 1. ABNORMAL HORIZONTAL WIDTH OF VIDEO



### 2. ABNORMAL HORIZONTAL RASTER CENTER

CHECK T903, D926, D927, R964, R968  
P403 AND JUMPER

### 3. ABNORMAL HORIZONTAL VIDEO CENTER

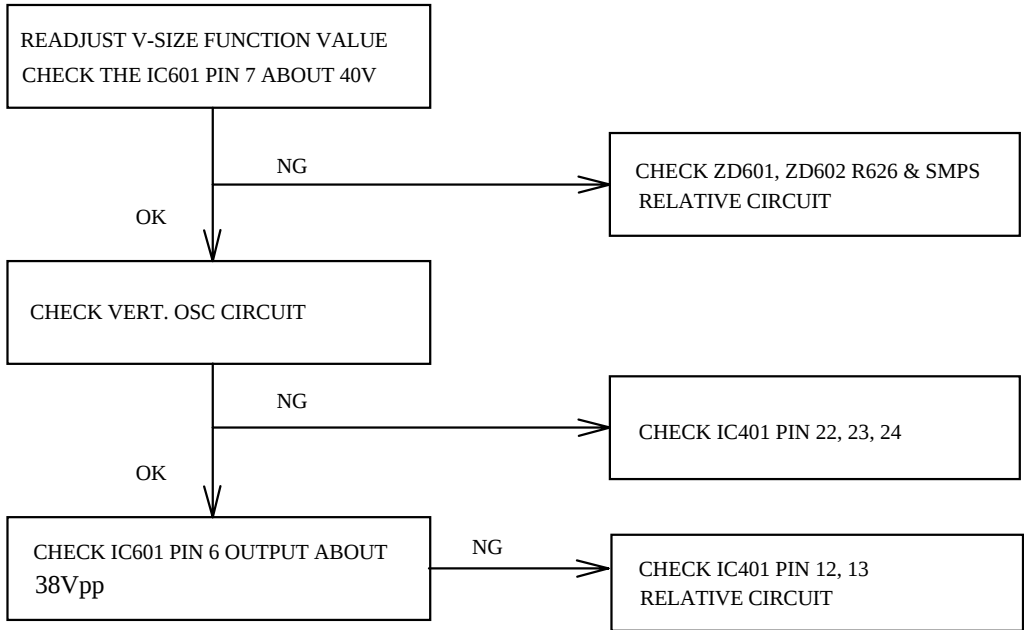
CHECK IC101 PIN 9, 10, IC401 PIN 18, 19

### 4. ABNORMAL HORIZONTAL LINEARITY

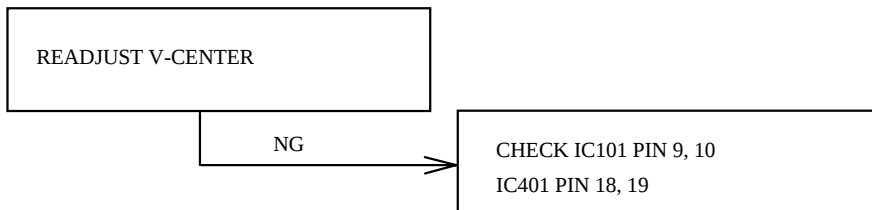
CHECK L401, Q407, R447, C448  
AND IC101 PIN 20, 21, 22, 23  
CS SWITCHER IC403, Q410, Q411, Q420

## 6-6 ABNORMAL VERTICAL SCANNING

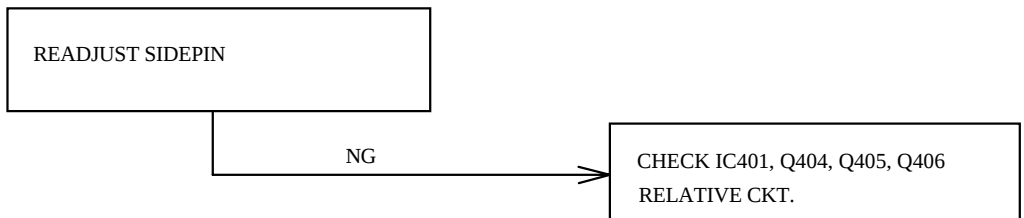
### 1. ABNORMAL VERTICAL SIZE



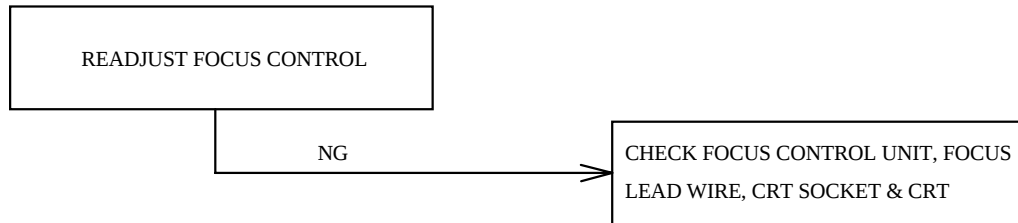
### 2. VERTICAL CENTER



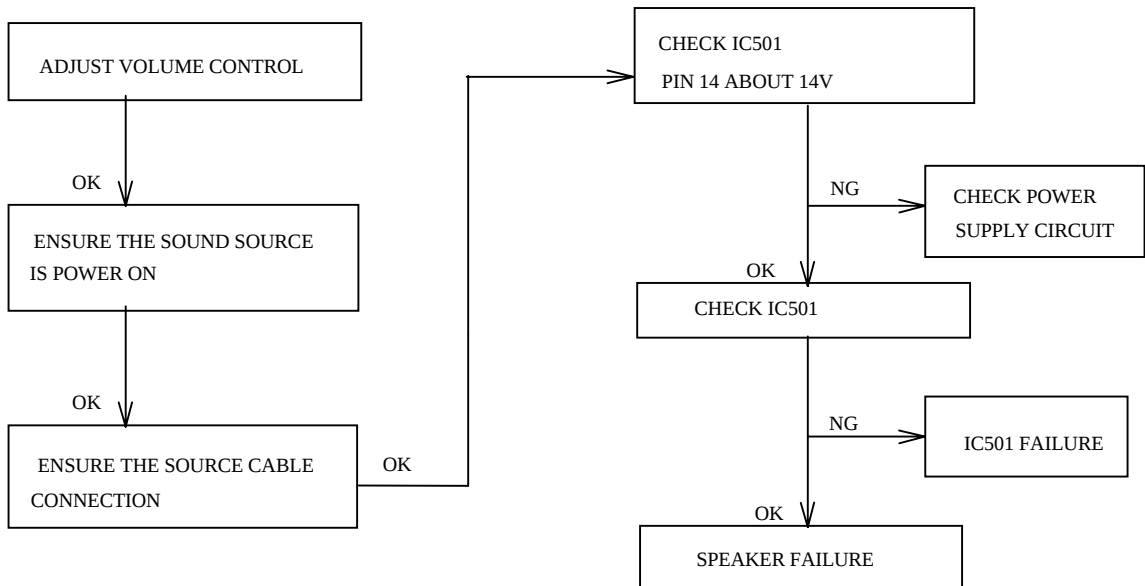
## 6-7 SIDE-PIN CUSHION DISTORTION



## 6-8 POOR FOCUS



## 6-9 NO SOUND (FOR AUDIO MODEL ONLY)



## 6-10 POWER SUPPLY TROUBLE SHOOTING CHART

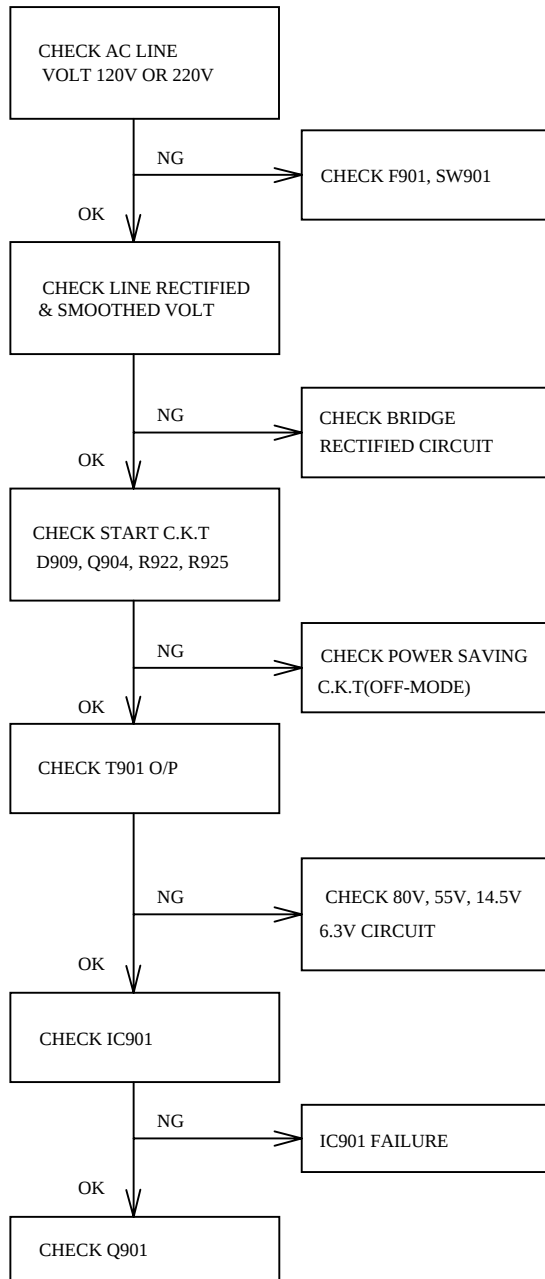
BEFORE CHECK SW.REG. PLEASE REFER TO THE POWER SUPPLY BLOCK DIAGRAM

POWER SUPPLY OUTPUT: (A) VARIABLE OUTPUT : 60.5V - 145V

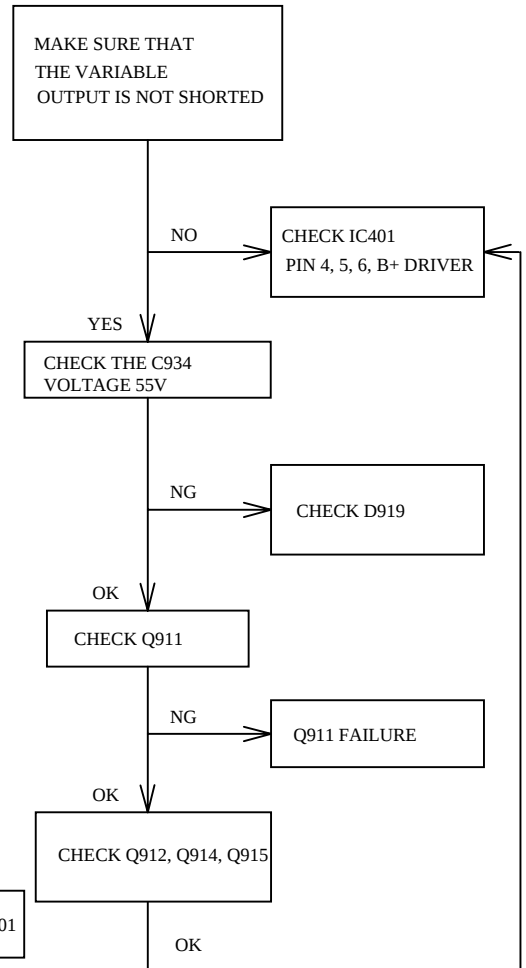
(DEPENDING EPENDING UPON H.SYNC FREQUENCY)

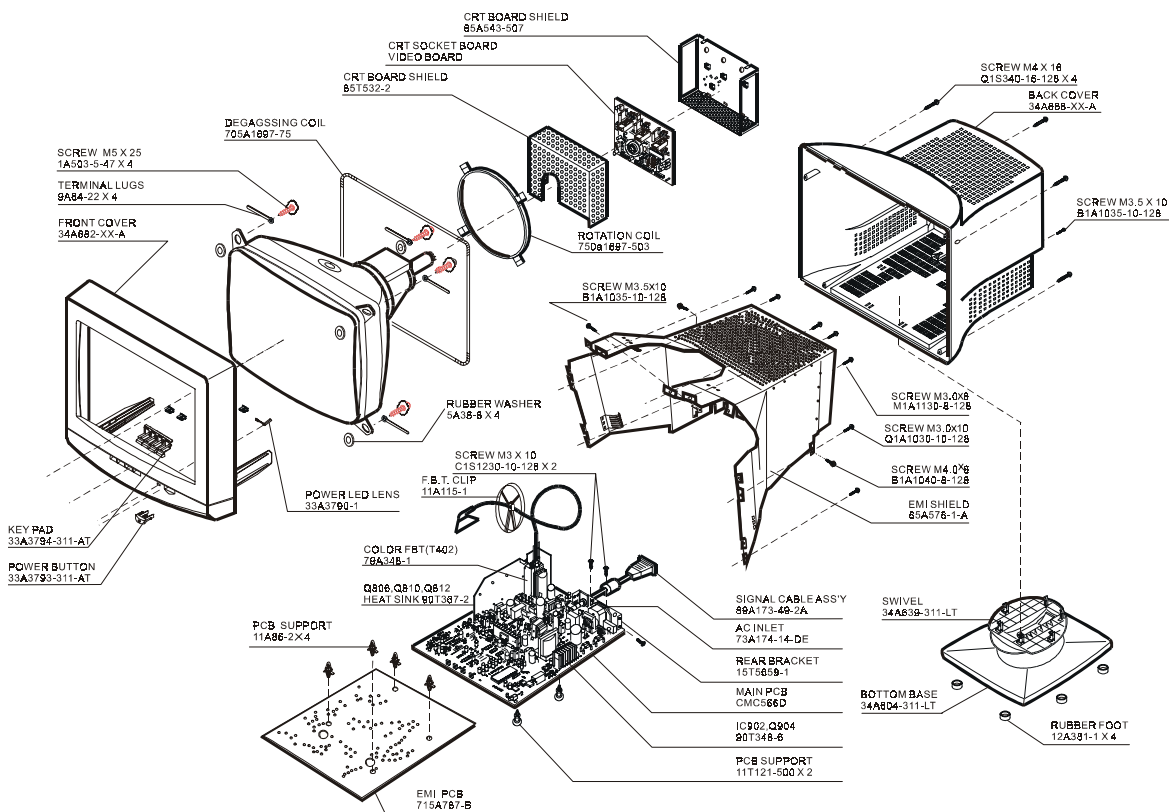
(B) CONSTANT OUTPUT : 6.3V, 14.5V, 55V, 80V

### BEAD SET



### ABNORMAL VARIABLE OUTPUT





# PARTS LIST OF CABINET

| LOCATION | C993<br>(LOW RADIATION 220V)<br>C995TSE |       |       |     | SPECIFICATION<br>CHAS ASS'Y |
|----------|-----------------------------------------|-------|-------|-----|-----------------------------|
|          | 1A                                      | 503-  | 5 -   | 47  | SCREW                       |
|          | 5A                                      | 38-   | 8     |     | RUBBER WASHER               |
|          | 9A                                      | 84-   | 22    |     | LUG                         |
|          | 11A                                     | 112-  | 500   |     | WIRE MOUNT                  |
|          | 11A                                     | 115-  | 1     |     | F.B.T CLIP                  |
|          | 12A                                     | 381-  | 500   |     | RUBBER FOOT                 |
|          | 19A                                     | 403-  | 7     |     | STEEL                       |
|          | 19A                                     | 506-  | 2     |     | STEEL WIRE SPRING           |
|          | 33A                                     | 3663- | 1     |     | SUPPORT                     |
|          | 33A                                     | 3726- | 1     |     | POWER CAP                   |
|          | 33A                                     | 3727- | 1     |     | POWER ROD                   |
|          | 33A                                     | 3790- | 1     |     | POWER LED LENS              |
|          | 33A                                     | 3793- | 311 - | AT  | POWER BUTTON                |
|          | 33A                                     | 3794- | 311 - | AT  | KEY PAD                     |
|          | 34A                                     | 604-  | 311 - | LT  | BASE                        |
|          | 34A                                     | 639-  | 311 - | AL  | SWIVEL                      |
|          | 34A                                     | 668-  | 311 - | 1AT | BACK CABINET                |
|          | 34A                                     | 682-  | 311 - | 2AT | FRONT PANEL                 |
|          | 40A                                     | 152-  | 502   |     | LABEL                       |
|          | 40A                                     | 152-  | 509   |     | RECYCLE LABEL               |
|          | 40A                                     | 152-  | 512   |     | RECYCLE LABEL               |
|          | 40A                                     | 153-  | 74 -  | 2   | LABEL                       |
|          | 40A                                     | 154-  | 14 -  | 1   | CABINET LABEL               |
|          | 40A                                     | 154-  | 501 - | 1   | HI-POT GND LABEL            |
|          | 40A                                     | 581-  | 26 -  | 668 | SLZ LABEL                   |
|          | 40A                                     | 581-  | 26 -  | 704 | LABEL                       |
|          | 40A                                     | 2029- | 622 - | 1A  | ID LABEL                    |
|          | 40A                                     | 68-   | 508 - | A   | CARD                        |
|          | 41A                                     | 68-   | 615 - | 4A  | TCO99 CARD                  |
|          | 41A                                     | 68-   | 622 - | 1B  | WARRANTY CARD               |
|          | 41A                                     | 550-  | 622 - | 1B  | OWNER'S MANUAL              |
|          | 44A                                     | 3200- | 1     |     | EPS CUSHION(L)              |
|          | 44A                                     | 3200- | 2     |     | EPS CUSHION(R)              |
|          | 44A                                     | 3200- | 622 - | 1A  | CARTON                      |
|          | 45A                                     | 76-   | 28 -  | RN  | PE BAG                      |
|          | 45A                                     | 76-   | 34 -  | RN  | PE BAG                      |
|          | 45A                                     | 76-   | 502 - | RN  | PE BAG                      |
|          | 45A                                     | 77-   | 3     |     | TRANSPARENT SHEET           |
|          | 45A                                     | 77-   | 500   |     | BARCODE RIBBON              |
|          | 45A                                     | 77-   | 501   |     | BARCODE RIBBON              |
|          | 85A                                     | 532-  | 2     |     | CRPC SHIELD                 |
|          | 85A                                     | 543-  | 507   |     | CRPC SHIELD                 |
|          | 85A                                     | 578-  | 1 -   | A   | EMI SHIELD                  |
|          | 89A                                     | 404A- | 15N - | IS  | POWER CORD UL/CSA           |
|          | 95A                                     | 91-   | 205 - | 598 | WIRE                        |
|          | 95A                                     | 207-  | 10    |     | WIRE                        |
|          | B1A                                     | 1035- | 10 -  | 128 | SCREW                       |
|          | B1A                                     | 1040- | 8 -   | 128 | SCREW                       |
|          | M1A                                     | 1130- | 8 -   | 128 | SCREW                       |
|          | Q1A                                     | 340-  | 16 -  | 128 | SCREW                       |
|          | Q1A                                     | 1030- | 10 -  | 128 | SCREW                       |
|          | 750A                                    | 1697- | 75 -  | A   | DEG. COIL UL/CSA            |
|          | 750A                                    | 5455- | 1AV   |     | M46QCG903*21(A) 19" LG      |



# PARTS LIST OF CHAS

| LOCATION | C993     |       |       |     | SPECIFICATION             |
|----------|----------|-------|-------|-----|---------------------------|
|          | AI995TSE |       |       |     | MAIN BOARD ASS'Y          |
|          | CR995TSE |       |       |     | CRT BOARD ASS'Y           |
|          | 1A       | 421-  | 4 -   | 128 | SCREW                     |
|          | 2A       | 202-  | 4     |     | STAINLESS STEEL CLIP      |
|          | 3A       | 1-    | 4 -   | 106 | LOCK WASHER               |
|          | 6A       | 31-   | 4     |     | BRASS                     |
|          | 9A       | 203-  | 8     |     | BRASS PIN                 |
|          | 11A      | 86-   | 2     |     | NYLON                     |
|          | 11A      | 127-  | 1     |     | PC SUPPORT                |
|          | 15A      | 5640- | 1 -   | A   | AL GND LUG                |
|          | 15A      | 5659- | 500 - | 2   | REAR BRACKET              |
|          | 40A      | 581-  | 26 -  | 702 | FAIL-SAFE LABEL           |
|          | 40A      | 581-  | 624 - | 2A  | CHASSIS LABEL             |
|          | 50A      | 500-  | 1     |     | CABLE TIE                 |
|          | 62A      | 10-   | 16 -  | W   | SPARK GAP 1KV             |
|          | 89A      | 174A- | 5EC - | GL  | SIGNAL CABLE              |
|          | 95A      | 201-  | 69 -  | 032 | WIRE                      |
|          | 95A      | 201-  | 69 -  | 042 | WIRE                      |
|          | 95A      | 201-  | 69 -  | 052 | WIRE                      |
|          | B1A      | 1040- | 8 -   | 128 | SCREW                     |
|          | B1A      | 1040- | 10 -  | 128 | SCREW                     |
|          | B1A      | 1140- | 8 -   | 128 | SCREW                     |
|          | M1A      | 1140- | 6 -   | 128 | SCREW                     |
|          | 705A     | 995T- | C56 - | 01  | IC601 ASS'Y               |
|          | 705A     | 995T- | C56 - | 02  | IC904 ASS'Y               |
|          | 705A     | 995T- | C57 - | 02  | Q901 ASS'Y                |
|          | 705A     | 995T- | C57 - | 03  | Q425 ASS'Y                |
|          | 705A     | 995T- | C57 - | 04  | Q420 ASS'Y                |
|          | 705A     | 995T- | C57 - | 01E | Q403/Q405/Q911/D408 ASS'Y |
|          | 705A     | 995T- | C87 - | 01  | CN901 ASS'Y               |
|          | 705A     | 995T- | C93 - | 01  | D921 ASS'Y                |
|          | 715A     | 787-  | B     |     | GROUND PANEL              |
|          | 750A     | 5455- | 995 - | SDT | 19" LG TCO99 CRT ASS'Y    |
|          | 750A     | 5455- | 995 - | SET | 19" LG TCO CRT ASS'Y      |
|          | 750A     | 5455- | 995 - | SIT | 19" LG MPRII CRT ASS'Y    |
| <SW102>  | 77A      | 602-  | 1 -   | HJ  | TACT SW TSVB-3B           |
| <SW103>  | 77A      | 602-  | 1 -   | HJ  | TACT SW TSVB-3B           |
| <SW104>  | 77A      | 602-  | 1 -   | HJ  | TACT SW TSVB-3B           |
| <SW105>  | 77A      | 602-  | 1 -   | HJ  | TACT SW TSVB-3B           |
| AS2      | 95A      | 205T- | 30 -  | 072 | WIRE ASS'Y                |
| C411     | 67A      | 309-  | 102 - | 3   | 1000uF +-20% 16V          |
| C414     | 67A      | 305-  | 470 - | 9L  | 47uF +-20% 100V           |
| C415     | 65A      | 517K- | 103 - | 1A  | 10000PF Z5F 500V          |
| C418     | 63A      | 210J- | 432 - | 8MK | 4300PF 2KV 5A             |
| C419     | 63A      | 210J- | 432 - | 5FC | 4300PF 1000V +-5%         |
| C425     | 63A      | 210J- | 224 - | 3CJ | 0.22uF 400V 15A           |
| C426     | 63A      | 210J- | 684 - | 2CC | 0.68uF 250V +-5%          |
| C428     | 63A      | 210J- | 122 - | 7FM | MPP 1.2NF 1600V +-5%      |
| C429     | 63A      | 210J- | 394 - | 2CC | 0.39uF 250V +-5%          |
| C431     | 64A      | 100J- | 225 - | 59  | 2.2Uf 100V MEF            |
| C438     | 63A      | 210J- | 224 - | 2CC | 0.22uF 250V +-5%          |
| C439     | 63A      | 210J- | 394 - | 2CC | 0.39uF 250V +-5%          |
| C458     | 63A      | 210J- | 124 - | 2BF | 0.12uF 250V               |
| C610     | 67A      | 305-  | 101 - | 9T  | 100uF +-20% 100V          |
| C615     | 67A      | 305-  | 102 - | 3   | 1000uF +-20% 16V          |
| C703     | 67A      | 305-  | 109 - | 15  | 1uF 450V                  |
| C713     | 67A      | 305-  | 100 - | 12  | 10uF +-20% 250V           |
| C900     | 65A      | 305M- | 472 - | 2B2 | 4700PF +-20% 400VAC       |
| C903     | 65A      | 305M- | 332 - | 2B2 | 3300PF +-20% 400VAC/250V  |
| C904     | 65A      | 305M- | 332 - | 2B2 | 3300PF +-20% 400VAC/250V  |
| C907     | 67A      | 30-   | 221 - | 14D | 220Uf +-20% 400V          |



## LOCATION

## C993

## SPECIFICATION

|       |     |       |       |     |                     |
|-------|-----|-------|-------|-----|---------------------|
| C902  | 63A | 107-  | 224 - | 5   | 0.22Uf +-20% 250VAC |
| C915  | 65A | 2M    | 103 - | 3B  | 0.01Uf+-20% Z5U 2KV |
| C922  | 65A | 517K- | 103 - | 1A  | 10000PF Z5F 500V    |
| C931  | 67A | 305-  | 101 - | 10J | 100Uf +-20% 160V    |
| C934  | 67A | 215-  | 391 - | GFH | 390Uf +-20% 80V     |
| C936  | 67A | 215-  | 102 - | 4   | 1000Uf +-20% 25V    |
| C937  | 67A | 305-  | 102 - | 3   | 1000Uf +-20% 16V    |
| C939  | 67A | 305-  | 102 - | 3   | 1000Uf +-20% 16V    |
| C951  | 67A | 215-  | 470 - | 12H | 47Uf +-20% 250V     |
| CF418 | 71A | 55-   | 2     |     | FERRITE BEAD        |
| CF419 | 71A | 55-   | 2     |     | FERRITE BEAD        |
| CN902 | 33A | 3074- | 1     |     | 2P PLUG             |
| D901  | 93A | 52-   | 55P - | 52T | IN5408              |
| D902  | 93A | 52-   | 55P - | 52T | IN5408              |
| D903  | 93A | 52-   | 55P - | 52T | IN5408              |
| D904  | 93A | 52-   | 55P - | 52T | IN5408              |
| D922  | 93A | 3020- | 8     |     | RG-4Z               |
| D923  | 93A | 3020- | 8T    |     | RG-4Z               |
| D925  | 93A | 3040- | 8T    |     | RG-4                |
| DF901 | 71A | 55-   | 2     |     | FERRITE BEAD        |
| DF902 | 71A | 55-   | 2     |     | FERRITE BEAD        |
| DF903 | 71A | 55-   | 2     |     | FERRITE BEAD        |
| DF904 | 71A | 55-   | 2     |     | FERRITE BEAD        |
| DF923 | 71A | 55-   | 2     |     | FERRITE BEAD        |
| DF925 | 71A | 55-   | 2     |     | FERRITE BEAD        |
| F901  | 84A | 41-   | 4     |     | FUSE 4A             |
| F901  | 84A | 33-   | 10    |     | FUSE CLIP           |
| FBTF  | 71A | 100-  | 8 -   | S   | COIL                |
| GND1  | 95A | 205-  | 30 -  | 082 | WIRE                |
| GND3  | 9A  | 203-  | 8     |     | BRASS PIN           |
| GND4  | 9A  | 203-  | 8     |     | BRASS PIN           |
| H802  | 95A | 8013- | 9 -   | 510 | WIRE                |
| H803  | 95A | 8013- | 6 -   | 511 | WIRE                |
| H804  | 95A | 8013- | 5 -   | 511 | WIRE                |
| H805  | 95A | 8013- | 7 -   | 14  | WIRE                |
| IC101 | 56A | 1125- | 50    |     | 40PIN IC            |
| IC102 | 56A | 1133- | 14    |     | AT24C08-10PC        |
| IC103 | 56A | 1131- | 5     |     | MTV016N             |
| IC105 | 56A | 74LS- | 14 -  | H   | 14 PIN IC 74LS14    |
| IC401 | 56A | 552-  | 1     |     | TDA4856 BY PHILIPS  |
| IC403 | 56A | 212-  | 2     |     | 14P IC LM324N       |
| IC404 | 56A | 212-  | 2     |     | 14P IC LM324N       |
| IC901 | 56A | 379-  | 12    |     | 8P IC UC3842AM      |
| J002  | 95A | 90-   | 23    |     | TIN COATED          |
| L401  | 73A | 147-  | 109 - | T   | LINEARITY COIL      |
| L402  | 73A | 253-  | 109 - | LA  | CHOKE COIL          |
| L404  | 73A | 253-  | 106 - | HJ  | CHOKE COIL          |
| L901  | 73A | 174-  | 16 -  | HJ  | LINE FILTER         |
| L902  | 73A | 174-  | 15 -  | HJ  | LINE FILTER         |
| LED1  | 81A | 10-   | 6 -   | BH  | LED HOLDER          |
| NR401 | 61A | 58-   | 101 - | UT  | NTCR 100 OHM        |
| NR630 | 61A | 58-   | 101 - | UT  | NTCR 100 OHM        |
| NR901 | 61A | 58-   | 8T -  | L   | NTCR                |
| P402  | 33A | 3192- | 4     |     | 4P PLUG             |
| P701  | 33A | 3803- | 3     |     | WAFER               |
| P903  | 33A | 8009- | 3     |     | 3P PLUG             |
| PA    | 95A | 205B- | 30 -  | 042 | WIRE                |
| PP1   | 95A | 205-  | 30 -  | 062 | WIRE                |
| PP2   | 95A | 205-  | 30 -  | 022 | WIRE                |
| PR901 | 61A | 52-   | 27 -  | 5   | PDGS5140RS-KB       |
| Q410  | 57A | 600-  | 2     |     | MOS FET IRF630      |
| Q412  | 57A | 610-  | 501   |     | IRF640A             |

## LOCATION

## C993

## SPECIFICATION

|       |     |       |       |     |                      |
|-------|-----|-------|-------|-----|----------------------|
| Q418  | 57A | 610-  | 501   |     | IRF640A              |
| Q908  | 57A | 690-  | 2     |     | PNP TRANSISTOR BD140 |
| Q909  | 57A | 728-  | 1     |     | 2SB772               |
| R426  | 61A | 155M- | 220 - | 61  | 22 OHM +-5% 5W       |
| R428  | 61A | 155M- | 758 - | 61  | 0.75 OHM +-5% 5W     |
| R456  | 61A | 153M- | 181 - | 59  | 180 OHM +-5% 3W      |
| R469  | 61A | 208-  | 220 - | 64  | 22 OHM +-5% 1W       |
| R473  | 61A | 208-  | 820 - | 64  | 82 OHM +-5% 1W       |
| R627  | 61A | 208-  | 100 - | 64  | 10 OHM +-5% 1W       |
| R629  | 61A | 208-  | 331 - | 64  | 330 OHM +-5% 1W      |
| R630  | 61A | 208-  | 109 - | 64  | 1 OHM +-5% 1W        |
| R632  | 61A | 153M- | 159 - | 59  | 1.5 OHM +-5% 3W      |
| R633  | 61A | 153M- | 159 - | 59  | 1.5 OHM +-5% 3W      |
| R723  | 61A | 152M- | 121 - | 64  | 120 OHM +-5% 2W      |
| R725  | 61A | 175L- | 244 - | 52T | 240K OHM +-5% 1/2W   |
| R743  | 61A | 152M- | 101 - | 64  | 100 OHM +-5% 2W      |
| R927  | 61A | 153M- | 333 - | 59  | 33 OHM +-5% 3W       |
| R929  | 61A | 152M- | 278 - | 64  | 0.27 OHM +-5% 2W     |
| R955  | 61A | 301-  | 228 - | 64  | 0.22 OHM +-5% 1/2W   |
| R964  | 61A | 152M- | 220 - | 64  | 22 OHM +-5% 2W       |
| R968  | 61A | 152M- | 220 - | 64  | 22 OHM +-5% 2W       |
| R979  | 61A | 152M- | 471 - | 64  | 470 OHM +-5% 2W      |
| RA101 | 61A | 124-  | 472 - | 10  | 10P 4.7K OHM         |
| RA102 | 61A | 124-  | 472 - | 8   | 8P 4.7K OHM          |
| RA103 | 61A | 124-  | 472 - | 8   | 8P 4.7K OHM          |
| RY401 | 77A | 260-  | 5 -   | 1   | RELAY DC12V          |
| RY901 | 77A | 260-  | 5 -   | 1   | RELAY DC12V          |
| SW901 | 77A | 267-  | 12 -  | HJ  | PUSH SWITCH          |
| T401  | 79A | 167-  | 110 - | HJ  | DRIVER X'FMR         |
| T402  | 79A | 785F- | 1 -   | AH  | DRIVER X'FMR         |
| T701  | 79A | 167-  | 112 - | HJA | DRIVER X'FMR         |
| T901  | 80A | 769-  | 2 -   | HJA | POWER X'FMR          |
| T903  | 79A | 167-  | 111 - | HJA | POWER X'FMR          |
| TP401 | 9A  | 211-  | 2     |     | PIN                  |
| TP701 | 9A  | 211-  | 2     |     | PIN                  |
| TP901 | 9A  | 211-  | 2     |     | PIN                  |
| TR901 | 9A  | 203-  | 9     |     | PIN                  |
| VR701 | 75A | 335-  | 223   |     | 22K OHM +-20%        |
| VR702 | 75A | 335-  | 204   |     | 200K OHM +-20%       |
| VR703 | 75A | 335-  | 223   |     | 22K OHM +-20%        |
| VR901 | 75A | 335-  | 101   |     | 100 OHM +-20%        |
| VR902 | 75A | 335-  | 473   |     | 47K OHM +-20%        |
| X101  | 93A | 22-   | 22 -  | PT  | HC-49U 8MHz          |

## PARTS LIST OF MAIN PC BOARD

## LOCATION

## C993

## SPECIFICATION

|      |      |       |       |     |                       |
|------|------|-------|-------|-----|-----------------------|
|      | 715A | 731-  | 1B    |     | CMPC BOARD            |
| C101 | 65A  | 450-  | 104 - | 7T  | 0.1uF +80-20% Y5V 50V |
| C102 | 67A  | 309-  | 330 - | 3T  | 33uF +-20% 16V        |
| C103 | 67A  | 305-  | 101 - | 4T  | 100uF +-20% 25V       |
| C105 | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V        |
| C109 | 65A  | 442-  | 101 - | 13T | 100PF +-5% 50V NPO    |
| C110 | 67A  | 309-  | 101 - | 3T  | 100uF +-20% 16V       |
| C113 | 67A  | 309-  | 101 - | 3T  | 100uF +-20% 16V       |
| C114 | 64A  | 700J- | 103 - | 0AT | 0.01uF +-5% 50V       |
| C115 | 64A  | 700J- | 104 - | 0AT | 0.1uF +-5% 50V        |
| C117 | 67A  | 309-  | 221 - | 3T  | 220uF +-20% 16V       |

| LOCATION | C993 |       |       |     | SPECIFICATION           |
|----------|------|-------|-------|-----|-------------------------|
| C120     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C121     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C122     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C123     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C124     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C125     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C126     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C127     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C128     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C129     | 95A  | 90-   | 23    |     | TIN COATED              |
| C130     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C131     | 64A  | 700J- | 104 - | 0AT | 0.1uF +-5% 50V          |
| C138     | 65A  | 442-  | 101 - | 13T | 100PF +-5% 50V NPO      |
| C401     | 64A  | 700J- | 104 - | 0AT | 0.1uF +-5% 50V          |
| C402     | 64A  | 700J- | 822 - | 0AT | 8200PF +-5% 50V         |
| C403     | 64A  | 45G-  | 103 - | 1AT | 0.01uF +-2% 100V        |
| C404     | 64A  | 700J- | 472 - | 0AT | 4.7NF +-5% 100V         |
| C408     | 64A  | 176J- | 473 - | 2T  | 0.047uF +-5% 250V       |
| C409     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C410     | 65A  | 442-  | 470 - | 13T | 47PF +-5% NPO 50V       |
| C412     | 65A  | 444-  | 101 - | 5T  | 100PF 10% 50V Y5P       |
| C413     | 65A  | 444-  | 101 - | 5T  | 100PF 10% 50V Y5P       |
| C415     | 65A  | 517K- | 103 - | 1T  | 10000PF 500V Z5P        |
| C416     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C417     | 64A  | 701J- | 334 - | 0AT | 0.33uF +-5% 50V         |
| C420     | 65A  | 450-  | 473 - | 4T  | 47000PF +80-20% Z5V 50V |
| C421     | 65A  | 444-  | 103 - | 5T  | 0.01uF 10% 50V Y5P      |
| C424     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80-20% 50V       |
| C427     | 67A  | 309-  | 109 - | 7T  | 1.0uF +-20% 50V         |
| C430     | 65A  | 1K-   | 102 - | 5T  | 1NF/1KV 10% Y5P         |
| C432     | 65A  | 444-  | 102 - | 5T  | 1000PF 10% 50V Y5P      |
| C433     | 64A  | 701J- | 224 - | 0AT | 0.22uF +-5% 50V         |
| C434     | 67A  | 309-  | 470 - | 4T  | 47uF +-20% 25V          |
| C435     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80-20% 50V       |
| C436     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80-20% 50V       |
| C437     | 67A  | 309-  | 109 - | 7T  | 1.0uF +-20% 50V         |
| C440     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80-20% 50V       |
| C441     | 67A  | 309-  | 109 - | 7T  | 1.0uF +-20% 50V         |
| C444     | 65A  | 442-  | 181 - | 13T | 180PF 5% 50V NPO        |
| C447     | 67A  | 309-  | 109 - | 7T  | 1.0uF +-20% 50V         |
| C448     | 65A  | 444-  | 681 - | 1T  | 680PF 10% 50V           |
| C449     | 65A  | 2K-   | 181 - | 5T  | 1800PF 10%              |
| C455     | 67A  | 309-  | 109 - | 7T  | 1.0uF +-20% 50V         |
| C456     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80-20% 50V       |
| C457     | 65A  | 442-  | 271 - | 9T  | 270PF 50V               |
| C461     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C603     | 64A  | 701J- | 224 - | 0AT | 0.22uF +-5% 50V         |
| C604     | 64A  | 700J- | 104 - | 0AT | 0.1uF +-5% 50V          |
| C605     | 64A  | 176J- | 104 - | 1T  | 0.1uF +-5% 100V         |
| C606     | 65A  | 444-  | 101 - | 5T  | 100PF 10% 50V Y5P       |
| C608     | 64A  | 176J- | 333 - | 1T  | 0.033uF +-5% 100V       |
| C609     | 64A  | 176J- | 333 - | 1T  | 0.033uF +-5% 100V       |
| C616     | 65A  | 444-  | 472 - | 5T  | 4700PF 10% 50V Y5P      |
| C617     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80-20% Y5V 50V   |
| C618     | 67A  | 309-  | 220 - | 7T  | 22uF +-20% 50V          |
| C701     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C702     | 65A  | 1K-   | 471 - | 2T  | 470PF/1KV 10% Y5P       |
| C704     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V          |
| C707     | 64A  | 176J- | 104 - | 2T  | 0.1uF +-5% 250V         |
| C708     | 67A  | 309-  | 101 - | 7T  | 100uF +-20% 50V         |
| C710     | 67A  | 305-  | 478 - | 7T  | 0.47uF +-5% 50V         |
| C717     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80-20% Y5V 50V   |

| LOCATION | C993 |       |       |     | SPECIFICATION     |
|----------|------|-------|-------|-----|-------------------|
| C719     | 67A  | 215K- | 828 - | 9H  | 0.82uF 100V       |
| C905     | 67A  | 305-  | 229 - | 7T  | 2.2uF +-20% 50V   |
| C906     | 65A  | 444-  | 681 - | 1T  | 680PF 10% 50V     |
| C914     | 67A  | 305-  | 100 - | 7T  | 10uF +-20% 50V    |
| C916     | 67A  | 305-  | 101 - | 4T  | 100uF +-20% 25V   |
| C918     | 64A  | 700J- | 332 - | 0AT | 3.3uF +-5% 50V    |
| C919     | 64A  | 700J- | 102 - | 0AT | 0.001uF +-5% 50V  |
| C920     | 64A  | 700J- | 102 - | 0AT | 0.001uF +-5% 50V  |
| C921     | 64A  | 176J- | 104 - | 1T  | 0.1uF +-5% 100V   |
| C922     | 65A  | 517K- | 103 - | 1T  | 10000PF 500V Z5P  |
| C923     | 65A  | 1K-   | 221 - | 2T  | 220PF/1KV 10% Z5P |
| C924     | 64A  | 700J- | 332 - | 0AT | 3.3uF +-5% 50V    |
| C930     | 67A  | 309-  | 470 - | 3T  | 47uF +-20% 16V    |
| C933     | 65A  | 1K-   | 221 - | 5T  | 220PF/1KV 10% Y5P |
| C935     | 67A  | 309-  | 470 - | 3T  | 47uF +-20% 16V    |
| C938     | 67A  | 305-  | 101 - | 4T  | 100uF +-20% 25V   |
| C940     | 67A  | 309-  | 220 - | 7T  | 22uF +-20% 50V    |
| C941     | 64A  | 700J- | 104 - | 0AT | 0.1uF +-5% 50V    |
| C942     | 65A  | 442-  | 470 - | 13T | 470PF 5% 50V NPO  |
| C943     | 65A  | 1K-   | 221 - | 5T  | 220PF/1KV 10% Y5P |
| C944     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V    |
| C950     | 65A  | 1K-   | 221 - | 2T  | 220PF/1KV 10% Z5P |
| C952     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V    |
| C955     | 65A  | 1K-   | 221 - | 5T  | 220PF/1KV 10% Y5P |
| C957     | 64A  | 700J- | 104 - | 0AT | 0.1uF +-5% 50V    |
| C958     | 64A  | 700J- | 222 - | 0AT | 2.2uF +-5% 50V    |
| C959     | 64A  | 701J- | 334 - | 0AT | 0.33uF +-5% 50V   |
| CM102    | 64A  | 176J- | 104 - | 0T  | 0.1uF +-5% 63V    |
| CQ707    | 67A  | 309-  | 101 - | 4T  | 100uF +-20% 25V   |
| D101     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D102     | 61A  | 602-  | 100 - | 52T | 10 OHM +-5% 1/6W  |
| D103     | 95A  | 90-   | 23    |     | TIN COATED        |
| D104     | 95A  | 90-   | 23    |     | TIN COATED        |
| D401     | 95A  | 90-   | 23    |     | TIN COATED        |
| D402     | 93A  | 64-   | 19 -  | 52T | DIODE ISS83       |
| D403     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D405     | 93A  | 1002- | 1 -   | 52T | IN5817 1A/20V     |
| D406     | 93A  | 1060- | 6 -   | 52T | F.R.D BYV26C      |
| D407     | 93A  | 60-   | 21T - | 52T | FR155             |
| D409     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D410     | 93A  | 64-   | 19 -  | 52T | DIODE ISS83       |
| D411     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D412     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D413     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D415     | 93A  | 60-   | 21T - | 52T | FR155             |
| D416     | 93A  | 60-   | 21T - | 52T | FR155             |
| D417     | 93A  | 60-   | 21T - | 52T | FR155             |
| D418     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D419     | 93A  | 60-   | 21T - | 52T | FR155             |
| D421     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D422     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D423     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D425     | 93A  | 60-   | 38P - | 52T | PS102R            |
| D426     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D427     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D428     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D430     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D431     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D703     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148      |
| D704     | 93A  | 1060- | 501 - | 52T | FRD BYV26C        |
| D705     | 93A  | 60-   | 21T - | 52T | FR155             |
| D706     | 93A  | 1060- | 6 -   | 52T | BYV26C            |

| LOCATION | C993 |       |       |     | SPECIFICATION    |
|----------|------|-------|-------|-----|------------------|
| D707     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148     |
| D708     | 93A  | 1060- | 6 -   | 52T | BYV26C           |
| D905     | 93A  | 64-   | 31G - | 52T | BAV20            |
| D909     | 93A  | 52-   | 1P -  | 52T | IN4005           |
| D910     | 93A  | 1060- | 6 -   | 52T | F.R.D BYV26C     |
| D911     | 93A  | 64-   | 31G - | 52T | BAV20            |
| D912     | 93A  | 64-   | 31G - | 52T | BAV20            |
| D913     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148     |
| D914     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148     |
| D919     | 93A  | 1060- | 6 -   | 52T | F.R.D BYV26C     |
| D924     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148     |
| D926     | 93A  | 60-   | 38T - | 52T | FR103            |
| D927     | 93A  | 60-   | 38T - | 52T | FR103            |
| D928     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148     |
| D934     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148     |
| D939     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148     |
| FB401    | 95A  | 90-   | 23    |     | TIN COATED       |
| FB903    | 71A  | 55-   | 9 -   | T   | SHIELD BEAD      |
| FB904    | 71A  | 55-   | 19 -  | T   | BEAD             |
| J003     | 95A  | 90-   | 23    |     | TIN COATED       |
| J004     | 95A  | 90-   | 23    |     | TIN COATED       |
| J005     | 95A  | 90-   | 23    |     | TIN COATED       |
| J006     | 95A  | 90-   | 23    |     | TIN COATED       |
| J007     | 95A  | 90-   | 23    |     | TIN COATED       |
| J009     | 95A  | 90-   | 23    |     | TIN COATED       |
| J010     | 95A  | 90-   | 23    |     | TIN COATED       |
| J012     | 95A  | 90-   | 23    |     | TIN COATED       |
| J014     | 95A  | 90-   | 23    |     | TIN COATED       |
| J015     | 95A  | 90-   | 23    |     | TIN COATED       |
| J016     | 95A  | 90-   | 23    |     | TIN COATED       |
| J017     | 95A  | 90-   | 23    |     | TIN COATED       |
| J018     | 95A  | 90-   | 23    |     | TIN COATED       |
| J019     | 95A  | 90-   | 23    |     | TIN COATED       |
| J020     | 95A  | 90-   | 23    |     | TIN COATED       |
| J021     | 95A  | 90-   | 23    |     | TIN COATED       |
| J022     | 95A  | 90-   | 23    |     | TIN COATED       |
| J023     | 95A  | 90-   | 23    |     | TIN COATED       |
| J024     | 61A  | 602-  | 272 - | 52T | 2.7K OHM 5% 1/6W |
| J025     | 61A  | 602-  | 392 - | 52T | 3.9K OHM 5% 1/6W |
| J027     | 95A  | 90-   | 23    |     | TIN COATED       |
| J028     | 95A  | 90-   | 23    |     | TIN COATED       |
| J029     | 95A  | 90-   | 23    |     | TIN COATED       |
| J030     | 95A  | 90-   | 23    |     | TIN COATED       |
| J031     | 95A  | 90-   | 23    |     | TIN COATED       |
| J032     | 95A  | 90-   | 23    |     | TIN COATED       |
| J033     | 95A  | 90-   | 23    |     | TIN COATED       |
| J034     | 95A  | 90-   | 23    |     | TIN COATED       |
| J036     | 95A  | 90-   | 23    |     | TIN COATED       |
| J037     | 95A  | 90-   | 23    |     | TIN COATED       |
| J038     | 95A  | 90-   | 23    |     | TIN COATED       |
| J039     | 95A  | 90-   | 23    |     | TIN COATED       |
| J040     | 95A  | 90-   | 23    |     | TIN COATED       |
| J041     | 95A  | 90-   | 23    |     | TIN COATED       |
| J042     | 95A  | 90-   | 23    |     | TIN COATED       |
| J043     | 95A  | 90-   | 23    |     | TIN COATED       |
| J044     | 95A  | 90-   | 23    |     | TIN COATED       |
| J045     | 95A  | 90-   | 23    |     | TIN COATED       |
| J046     | 95A  | 90-   | 23    |     | TIN COATED       |
| J047     | 71A  | 55-   | 19 -  | T   | SHIELD BEAD      |
| J048     | 95A  | 90-   | 23    |     | TIN COATED       |
| J049     | 95A  | 90-   | 23    |     | TIN COATED       |
| J050     | 95A  | 90-   | 23    |     | TIN COATED       |

| LOCATION | C993 |     |      | SPECIFICATION |
|----------|------|-----|------|---------------|
| J052     | 95A  | 90- | 23   | TIN COATED    |
| J053     | 95A  | 90- | 23   | TIN COATED    |
| J054     | 95A  | 90- | 23   | TIN COATED    |
| J055     | 95A  | 90- | 23   | TIN COATED    |
| J056     | 95A  | 90- | 23   | TIN COATED    |
| J057     | 95A  | 90- | 23   | TIN COATED    |
| J058     | 95A  | 90- | 23   | TIN COATED    |
| J059     | 95A  | 90- | 23   | TIN COATED    |
| J060     | 95A  | 90- | 23   | TIN COATED    |
| J061     | 95A  | 90- | 23   | TIN COATED    |
| J062     | 95A  | 90- | 23   | TIN COATED    |
| J063     | 95A  | 90- | 23   | TIN COATED    |
| J064     | 95A  | 90- | 23   | TIN COATED    |
| J065     | 95A  | 90- | 23   | TIN COATED    |
| J066     | 95A  | 90- | 23   | TIN COATED    |
| J067     | 95A  | 90- | 23   | TIN COATED    |
| J068     | 95A  | 90- | 23   | TIN COATED    |
| J069     | 95A  | 90- | 23   | TIN COATED    |
| J070     | 95A  | 90- | 23   | TIN COATED    |
| J071     | 95A  | 90- | 23   | TIN COATED    |
| J072     | 95A  | 90- | 23   | TIN COATED    |
| J073     | 95A  | 90- | 23   | TIN COATED    |
| J074     | 95A  | 90- | 23   | TIN COATED    |
| J075     | 75A  | 55- | 19 - | BEAD          |
| J076     | 95A  | 90- | 23   | TIN COATED    |
| J077     | 95A  | 90- | 23   | TIN COATED    |
| J078     | 95A  | 90- | 23   | TIN COATED    |
| J079     | 95A  | 90- | 23   | TIN COATED    |
| J080     | 95A  | 90- | 23   | TIN COATED    |
| J081     | 95A  | 90- | 23   | TIN COATED    |
| J082     | 95A  | 90- | 23   | TIN COATED    |
| J083     | 95A  | 90- | 23   | TIN COATED    |
| J084     | 95A  | 90- | 23   | TIN COATED    |
| J085     | 95A  | 90- | 23   | TIN COATED    |
| J086     | 95A  | 90- | 23   | TIN COATED    |
| J087     | 95A  | 90- | 23   | TIN COATED    |
| J088     | 95A  | 90- | 23   | TIN COATED    |
| J089     | 95A  | 90- | 23   | TIN COATED    |
| J090     | 95A  | 90- | 23   | TIN COATED    |
| J091     | 95A  | 90- | 23   | TIN COATED    |
| J092     | 95A  | 90- | 23   | TIN COATED    |
| J093     | 95A  | 90- | 23   | TIN COATED    |
| J094     | 95A  | 90- | 23   | TIN COATED    |
| J095     | 95A  | 90- | 23   | TIN COATED    |
| J096     | 95A  | 90- | 23   | TIN COATED    |
| J097     | 95A  | 90- | 23   | TIN COATED    |
| J098     | 95A  | 90- | 23   | TIN COATED    |
| J099     | 95A  | 90- | 23   | TIN COATED    |
| J101     | 95A  | 90- | 23   | TIN COATED    |
| J102     | 95A  | 90- | 23   | TIN COATED    |
| J103     | 95A  | 90- | 23   | TIN COATED    |
| J104     | 95A  | 90- | 23   | TIN COATED    |
| J105     | 95A  | 90- | 23   | TIN COATED    |
| J106     | 95A  | 90- | 23   | TIN COATED    |
| J107     | 95A  | 90- | 23   | TIN COATED    |
| J108     | 95A  | 90- | 23   | TIN COATED    |
| J109     | 95A  | 90- | 23   | TIN COATED    |
| J110     | 95A  | 90- | 23   | TIN COATED    |
| J111     | 95A  | 90- | 23   | TIN COATED    |
| J112     | 95A  | 90- | 23   | TIN COATED    |
| J113     | 95A  | 90- | 23   | TIN COATED    |
| J114     | 95A  | 90- | 23   | TIN COATED    |

| LOCATION | C993 |       |       |     | SPECIFICATION    |
|----------|------|-------|-------|-----|------------------|
| J115     | 95A  | 90-   | 23    |     | TIN COATED       |
| J116     | 95A  | 90-   | 23    |     | TIN COATED       |
| J117     | 95A  | 90-   | 23    |     | TIN COATED       |
| J118     | 95A  | 90-   | 23    |     | TIN COATED       |
| J119     | 95A  | 90-   | 23    |     | TIN COATED       |
| J120     | 71A  | 55-   | 19 -  | T   | BEAD             |
| J121     | 95A  | 90-   | 23    |     | TIN COATED       |
| J122     | 95A  | 90-   | 23    |     | TIN COATED       |
| J123     | 95A  | 90-   | 23    |     | TIN COATED       |
| J124     | 95A  | 90-   | 23    |     | TIN COATED       |
| J125     | 71A  | 55-   | 19 -  | T   | BEAD             |
| J126     | 95A  | 90-   | 23    |     | TIN COATED       |
| J127     | 95A  | 90-   | 23    |     | TIN COATED       |
| J128     | 95A  | 90-   | 23    |     | TIN COATED       |
| J129     | 95A  | 90-   | 23    |     | TIN COATED       |
| J130     | 95A  | 90-   | 23    |     | TIN COATED       |
| J131     | 95A  | 90-   | 23    |     | TIN COATED       |
| J132     | 61A  | 172-  | 102 - | 52T | 1K OHM +-5% 1/4W |
| J133     | 95A  | 90-   | 23    |     | TIN COATED       |
| J134     | 95A  | 90-   | 23    |     | TIN COATED       |
| J135     | 95A  | 90-   | 23    |     | TIN COATED       |
| J136     | 95A  | 90-   | 23    |     | TIN COATED       |
| J137     | 95A  | 90-   | 23    |     | TIN COATED       |
| J138     | 95A  | 90-   | 23    |     | TIN COATED       |
| J139     | 95A  | 90-   | 23    |     | TIN COATED       |
| J140     | 95A  | 90-   | 23    |     | TIN COATED       |
| J141     | 95A  | 90-   | 23    |     | TIN COATED       |
| J142     | 95A  | 90-   | 23    |     | TIN COATED       |
| J143     | 95A  | 90-   | 23    |     | TIN COATED       |
| J144     | 95A  | 90-   | 23    |     | TIN COATED       |
| J145     | 95A  | 90-   | 23    |     | TIN COATED       |
| J146     | 95A  | 90-   | 23    |     | TIN COATED       |
| J148     | 95A  | 90-   | 23    |     | TIN COATED       |
| J149     | 95A  | 90-   | 23    |     | TIN COATED       |
| J150     | 95A  | 90-   | 23    |     | TIN COATED       |
| J151     | 95A  | 90-   | 23    |     | TIN COATED       |
| J152     | 95A  | 90-   | 23    |     | TIN COATED       |
| J153     | 95A  | 90-   | 23    |     | TIN COATED       |
| J154     | 93A  | 39-   | 528 - | 52T | HZ9A2            |
| J156     | 95A  | 90-   | 23    |     | TIN COATED       |
| J158     | 95A  | 90-   | 23    |     | TIN COATED       |
| J163     | 95A  | 90-   | 23    |     | TIN COATED       |
| J164     | 95A  | 90-   | 23    |     | TIN COATED       |
| J165     | 95A  | 90-   | 23    |     | TIN COATED       |
| J166     | 95A  | 90-   | 23    |     | TIN COATED       |
| J167     | 95A  | 90-   | 23    |     | TIN COATED       |
| J168     | 95A  | 90-   | 23    |     | TIN COATED       |
| L101     | 73A  | 54-   | 339 - | 10T | 3.3UH            |
| L102     | 61A  | 175L- | 390 - | 52T | 39 OHM +-5% 1/2W |
| Q101     | 57A  | 420-  | P -   | T   | TR. 2SA733P/NEC  |
| Q102     | 57A  | 446-  | 1 -   | T   | TR.2SC1213AC     |
| Q400     | 57A  | 420-  | P -   | T   | TR. 2SA733P/NEC  |
| Q401     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC  |
| Q402     | 57A  | 731-  | 1 -   | T   | 2SK941           |
| Q404     | 57A  | 619-  | 1 -   | T   | 2SA673AC/HITACHI |
| Q406     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC  |
| Q407     | 57A  | 446-  | 1 -   | T   | TR.2SC1213AC     |
| Q408     | 57A  | 516-  | 1 -   | T   | TR. PH2369       |
| Q409     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC  |
| Q411     | 57A  | 420-  | P -   | T   | TR. 2SA733P/NEC  |
| Q413     | 57A  | 721-  | 1 -   | T   | DTC114ES ROHM    |
| Q416     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC  |

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|----------|------|-------|-------|-----|--------------------|
| Q419     | 57A  | 721-  | 1     |     | DTC114ES ROHM      |
| Q424     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q426     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q427     | 57A  | 721-  | 1 -   | T   | DTC114ES ROHM      |
| Q701     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q702     | 57A  | 420-  | P -   | T   | TR. 2SA733P/NEC    |
| Q703     | 57A  | 420-  | P -   | T   | TR. 2SA733P/NEC    |
| Q704     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q705     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q706     | 57A  | 498-  | 1 -   | T   | TR. BF423          |
| Q707     | 57A  | 721-  | 1 -   | T   | DTC114ES ROHM      |
| Q708     | 57A  | 493-  | 500 - | T   | BF422              |
| Q709     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q710     | 57A  | 420-  | P -   | T   | TR. 2SA733P/NEC    |
| Q904     | 57A  | 594-  | 510 - | T   | TR. MPS A44        |
| Q905     | 57A  | 420-  | P -   | T   | TR. 2SA733P/NEC    |
| Q906     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q910     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q912     | 57A  | 446-  | 1 -   | T   | TR.2SC1213AC       |
| Q913     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q914     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| Q915     | 57A  | 619-  | 1 -   | T   | 2SA673AC/HITACHI   |
| Q916     | 57A  | 419-  | P -   | T   | TR. 2SC945P/NEC    |
| R101     | 61A  | 602-  | 562 - | 52T | 5.6K OHM 5% 1/6W   |
| R104     | 61A  | 602-  | 682 - | 52T | 6.8K OHM 5% 1/6W   |
| R105     | 61A  | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R106     | 61A  | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R107     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R108     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R109     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R110     | 61A  | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R111     | 61A  | 602-  | 222 - | 52T | 2.2 OHM +-5% 1/6W  |
| R112     | 61A  | 172-  | 101 - | 52T | 100 OHM +-5% 1/4W  |
| R113     | 61A  | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R117     | 61A  | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R118     | 61A  | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R119     | 61A  | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R120     | 61A  | 175L- | 109 - | 52T | 1 OHM +-5% 1/2W    |
| R121     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R124     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R125     | 61A  | 602-  | 562 - | 52T | 5.6K OHM +-5% 1/6W |
| R126     | 61A  | 602-  | 202 - | 52T | 2K OHM +-5% 1/6W   |
| R127     | 61A  | 602-  | 752 - | 52T | 7.5K OHM +-5% 1/6W |
| R128     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R130     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R131     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R132     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R133     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R134     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R135     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R136     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R137     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R138     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R139     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R140     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R141     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R142     | 95A  | 90-   | 23    |     | TIN COATED         |
| R143     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R161     | 61A  | 172-  | 474 - | 52T | 470K OHM +-5% 1/4W |
| R162     | 61A  | 172-  | 181 - | 52T | 180 OHM +-5% 1/4W  |
| R164     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R165     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |

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|      |     |       |       |     |                    |
|------|-----|-------|-------|-----|--------------------|
| R167 | 61A | 602-  | 105 - | 52T | 1M OHM +-5% 1/6W   |
| R178 | 61A | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R179 | 61A | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R180 | 61A | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R181 | 61A | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R186 | 61A | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R189 | 61A | 602-  | 151 - | 52T | 150 OHM +-5% 1/6W  |
| R400 | 61A | 172-  | 104 - | 52T | 100K OHM +-5% 1/4W |
| R401 | 61A | 602-  | 332 - | 52T | 3.3K OHM +-5% 1/6W |
| R402 | 61A | 210-  | 751 - | 52T | 750 OHM +-1% 1/6W  |
| R403 | 61A | 210-  | 272 - | 52T | 2.7K OHM +-1% 1/6W |
| R404 | 61A | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R405 | 61A | 602-  | 512 - | 52T | 5.1K OHM +-5% 1/6W |
| R406 | 61A | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R407 | 61A | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R408 | 61A | 172-  | 362 - | 52T | 3.6K OHM +-5% 1/4W |
| R409 | 61A | 172-  | 562 - | 52T | 5.6K OHM +-5% 1/4W |
| R410 | 61A | 602-  | 221 - | 52T | 220 OHM +-5% 1/6W  |
| R411 | 61A | 172-  | 104 - | 52T | 100K OHM +-5% 1/4W |
| R412 | 61A | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R413 | 61A | 210-  | 153 - | 52T | 15K OHM +-1% 1/6W  |
| R414 | 61A | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W |
| R415 | 61A | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R416 | 61A | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R417 | 61A | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R418 | 61A | 602-  | 242 - | 52T | 2.4K OHM +-5% 1/6W |
| R419 | 61A | 172-  | 133 - | 52T | 13K OHM +-5% 1/4W  |
| R420 | 61A | 172-  | 103 - | 52T | 10K OHM +-5% 1/4W  |
| R421 | 61A | 602-  | 100 - | 52T | 10 OHM +-5% 1/6W   |
| R422 | 61A | 172-  | 154 - | 52T | 150K OHM +-5% 1/4W |
| R423 | 61A | 602-  | 563 - | 52T | 56K OHM +-5% 1/6W  |
| R424 | 61A | 602-  | 100 - | 52T | 10 OHM +-5% 1/6W   |
| R425 | 61A | 172-  | 121 - | 52T | 120 OHM +-5% 1/4W  |
| R427 | 61A | 175L- | 220 - | 52T | 22 OHM +-5% 1/2W   |
| R429 | 61A | 175L- | 100 - | 52T | 10 OHM +-5% 1/2W   |
| R430 | 61A | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R431 | 61A | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W |
| R432 | 61A | 602-  | 223 - | 52T | 22K OHM +-5% 1/6W  |
| R433 | 61A | 602-  | 223 - | 52T | 22K OHM +-5% 1/6W  |
| R434 | 61A | 602-  | 333 - | 52T | 33K OHM +-5% 1/6W  |
| R435 | 61A | 602-  | 751 - | 52T | 750 OHM +-5% 1/6W  |
| R436 | 61A | 210-  | 123 - | 52T | 12K OHM +-1% 1/6W  |
| R437 | 61A | 602-  | 333 - | 52T | 33K OHM +-5% 1/6W  |
| R438 | 61A | 602-  | 512 - | 52T | 5.1K OHM +-5% 1/6W |
| R439 | 61A | 602-  | 332 - | 52T | 3.3K OHM +-5% 1/6W |
| R440 | 61A | 172-  | 154 - | 52T | 150K OHM +-5% 1/4W |
| R441 | 61A | 602-  | 563 - | 52T | 56K OHM +-5% 1/6W  |
| R442 | 61A | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R444 | 61A | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W |
| R445 | 61A | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R446 | 61A | 172-  | 154 - | 52T | 150K OHM +-5% 1/4W |
| R447 | 61A | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R448 | 61A | 602-  | 563 - | 52T | 56K OHM +-5% 1/6W  |
| R449 | 61A | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R450 | 61A | 602-  | 122 - | 52T | 1.2K OHM +-5% 1/6W |
| R451 | 61A | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R452 | 61A | 602-  | 752 - | 52T | 7.5K OHM +-5% 1/6W |
| R453 | 61A | 602-  | 432 - | 52T | 4.3K OHM +-5% 1/6W |
| R457 | 61A | 175L- | 474 - | 52T | 470K OHM +-5% 1/2W |
| R463 | 61A | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W |
| R464 | 61A | 602-  | 563 - | 52T | 56K OHM +-5% 1/6W  |
| R465 | 61A | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W |



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|----------|------|-------|-------|-----|---------------------|
| R466     | 61A  | 602-  | 104 - | 52T | 100K OHM +-5% 1/6W  |
| R467     | 61A  | 175L- | 681 - | 52T | 680 OHM +-5% 1/2W   |
| R468     | 61A  | 400-  | 47 -  | 52T | 2.87K OHM +-1% 1/4W |
| R470     | 61A  | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W  |
| R471     | 61A  | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W  |
| R472     | 61A  | 172-  | 154 - | 52T | 150K OHM +-5% 1/4W  |
| R474     | 61A  | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W  |
| R475     | 61A  | 602-  | 131 - | 52T | 130 OHM +-5% 1/6W   |
| R477     | 61A  | 602-  | 912 - | 52T | 9.1K OHM +-5% 1/6W  |
| R478     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R479     | 61A  | 602-  | 562 - | 52T | 5.6K OHM +-5% 1/6W  |
| R480     | 61A  | 602-  | 562 - | 52T | 5.6K OHM +-5% 1/6W  |
| R481     | 61A  | 602-  | 104 - | 52T | 100K OHM +-5% 1/6W  |
| R497     | 61A  | 172-  | 105 - | 52T | 1MEG OHM +-5% 1/4W  |
| R498     | 61A  | 175L- | 104 - | 52T | 100K OHM +-5% 1/2W  |
| R603     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W   |
| R604     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W   |
| R608     | 61A  | 210-  | 223 - | 52T | 22K OHM +-1% 1/6W   |
| R609     | 61A  | 602-  | 182 - | 52T | 1.8K OHM +-5% 1/6W  |
| R610     | 61A  | 602-  | 221 - | 52T | 220 OHM +-5% 1/6W   |
| R620     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W    |
| R621     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W    |
| R626     | 61A  | 175L- | 681 - | 52T | 680 OHM +-5% 1/2W   |
| R628     | 61A  | 210-  | 272 - | 52T | 2.7K OHM +-1% 1/6W  |
| R635     | 61A  | 602-  | 682 - | 52T | 6.8K OHM +-5% 1/6W  |
| R636     | 61A  | 602-  | 472 - | 52T | 4.7K OHM +-5% 1/6W  |
| R638     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R639     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R701     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R702     | 61A  | 602-  | 913 - | 52T | 91K OHM +-5% 1/6W   |
| R703     | 61A  | 602-  | 622 - | 52T | 6.2K OHM +-5% 1/6W  |
| R704     | 61A  | 172-  | 182 - | 52T | 1.8K OHM +-5% 1/4W  |
| R705     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W   |
| R706     | 61A  | 602-  | 100 - | 52T | 10 OHM +-5% 1/6W    |
| R707     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R708     | 61A  | 602-  | 823 - | 52T | 82K OHM +-5% 1/6W   |
| R709     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R710     | 61A  | 175L- | 150 - | 52T | 15 OHM +-5% 1/2W    |
| R711     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W    |
| R712     | 61A  | 172-  | 153 - | 52T | 15K OHM +-5% 1/4W   |
| R713     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W    |
| R714     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W    |
| R715     | 95A  | 90-   | 23    |     | TIN COATED          |
| R718     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R719     | 61A  | 602-  | 473 - | 52T | 47K OHM +-5% 1/6W   |
| R720     | 61A  | 602-  | 125 - | 52T | 1.2M OHM +-5% 1/6W  |
| R721     | 61A  | 172-  | 683 - | 52T | 68K OHM +-5% 1/4W   |
| R722     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R724     | 61A  | 172-  | 105 - | 52T | 1MEG OHM +-5% 1/4W  |
| R726     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R728     | 61A  | 172-  | 105 - | 52T | 1MEG OHM +-5% 1/4W  |
| R729     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R730     | 61A  | 172-  | 689 - | 52T | 6.8 OHM +-5% 1/4W   |
| R731     | 61A  | 175L- | 274 - | 52T | 270K OHM +-5% 1/2W  |
| R733     | 61A  | 602-  | 823 - | 52T | 82K OHM +-5% 1/6W   |
| R734     | 61A  | 172-  | 475 - | 52T | 4.7M OHM +-5% 1/4W  |
| R735     | 61A  | 602-  | 332 - | 52T | 3.3K OHM +-5% 1/6W  |
| R736     | 61A  | 602-  | 752 - | 52T | 7.5K OHM +-5% 1/6W  |
| R737     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W   |
| R738     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W    |
| R739     | 61A  | 175L- | 333 - | 52T | 33K OHM +-5% 1/2W   |
| R740     | 61A  | 175L- | 274 - | 52T | 270K OHM +-5% 1/2W  |

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| R741     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R742     | 61A  | 175L- | 154 - | 52T | 150K OHM +-5% 1/2W |
| R744     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R900     | 61A  | 175L- | 106 - | 52T | 10M OHM +-5% 1/2W  |
| R901     | 61A  | 175L- | 474 - | 52T | 470K OHM +-5% 1/2W |
| R902     | 61A  | 602-  | 242 - | 52T | 2.4K OHM +-5% 1/6W |
| R903     | 61A  | 602-  | 361 - | 52T | 360 OHM +-5% 1/6W  |
| R904     | 61A  | 175L- | 204 - | 52T | 200K OHM +-5% 1/2W |
| R905     | 61A  | 175L- | 684 - | 52T | 680K OHM +-5% 1/2W |
| R913     | 61A  | 172-  | 223 - | 52T | 22K OHM +-5% 1/4W  |
| R923     | 61A  | 175L- | 474 - | 52T | 470K OHM +-5% 1/2W |
| R924     | 61A  | 175L- | 474 - | 52T | 470K OHM +-5% 1/2W |
| R925     | 61A  | 175L- | 473 - | 52T | 47K OHM +-5% 1/2W  |
| R926     | 61A  | 172-  | 473 - | 52T | 47K OHM +-5% 1/4W  |
| R928     | 71A  | 55-   | 23    |     | FERRITE BEAD       |
| R930     | 61A  | 172-  | 102 - | 52T | 1K OHM +-5% 1/4W   |
| R931     | 61A  | 172-  | 479 - | 52T | 4.7 OHM +-5% 1/4W  |
| R932     | 61A  | 172-  | 100 - | 52T | 10 OHM +-5% 1/4W   |
| R934     | 61A  | 172-  | 102 - | 52T | 1K OHM +-5% 1/4W   |
| R935     | 61A  | 172-  | 154 - | 52T | 150 OHM +-5% 1/4W  |
| R936     | 61A  | 172-  | 222 - | 52T | 2.2K OHM +-5% 1/4W |
| R937     | 61A  | 172-  | 151 - | 52T | 150 OHM +-5% 1/4W  |
| R938     | 61A  | 172-  | 220 - | 52T | 22 OHM +-5% 1/4W   |
| R939     | 61A  | 172-  | 223 - | 52T | 22K OHM +-5% 1/4W  |
| R940     | 61A  | 171-  | 183 - | 52T | 18K OHM +-2% 1/4W  |
| R941     | 61A  | 172-  | 181 - | 52T | 180K OHM +-5% 1/4W |
| R942     | 61A  | 172-  | 101 - | 52T | 100 OHM +-5% 1/4W  |
| R954     | 61A  | 175L- | 683 - | 52T | 68K OHM +-5% 1/2W  |
| R956     | 61A  | 172-  | 272 - | 52T | 2.7K OHM +-5% 1/4W |
| R957     | 61A  | 172-  | 473 - | 52T | 47K OHM +-5% 1/4W  |
| R958     | 61A  | 172-  | 102 - | 52T | 1K OHM +-5% 1/4W   |
| R960     | 61A  | 602-  | 473 - | 52T | 47K OHM +-5% 1/6W  |
| R962     | 61A  | 172-  | 220 - | 52T | 22 OHM +-5% 1/4W   |
| R963     | 61A  | 172-  | 100 - | 52T | 10 OHM +-5% 1/4W   |
| R969     | 61A  | 602-  | 913 - | 52T | 91K OHM +-5% 1/6W  |
| R970     | 61A  | 602-  | 562 - | 52T | 5.6K OHM +-5% 1/6W |
| R971     | 61A  | 172-  | 104 - | 52T | 100K OHM +-5% 1/4W |
| R972     | 61A  | 602-  | 912 - | 52T | 9.1K OHM +-5% 1/6W |
| R973     | 61A  | 602-  | 223 - | 52T | 22K OHM +-5% 1/6W  |
| R974     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R976     | 61A  | 175L- | 101 - | 52T | 100 OHM +-5% 1/2W  |
| R977     | 61A  | 172-  | 103 - | 52T | 10K OHM +-5% 1/4W  |
| R978     | 61A  | 172-  | 103 - | 52T | 10K OHM +-5% 1/4W  |
| R981     | 61A  | 602-  | 103 - | 52T | 10K OHM +-5% 1/6W  |
| R982     | 61A  | 172-  | 471 - | 52T | 470 OHM +-5% 1/4W  |
| R983     | 61A  | 602-  | 223 - | 52T | 22K OHM +-5% 1/6W  |
| ZD101    | 93A  | 39-   | 73 -  | 52T | HZ6B1/HITACHI      |
| ZD401    | 93A  | 39-   | 514 - | 52T | HZ9A3 ZENER        |
| ZD402    | 93A  | 39-   | 73 -  | 52T | HZ6B1/HITACHI      |
| ZD404    | 93A  | 39-   | 52 -  | 52T | HZ5C2 5.1V 5% 0.5W |
| ZD405    | 93A  | 39-   | 528 - | 52T | HZ9A3              |
| ZD406    | 93A  | 39-   | 77 -  | 52T | HZ5C1              |
| ZD407    | 95A  | 90-   | 23    |     | TIN COATED         |
| ZD601    | 93A  | 39-   | 58 -  | 52T | ZD HZ24-2/HITACHI  |
| ZD602    | 93A  | 39-   | 58 -  | 52T | ZD HZ24-2/HITACHI  |
| ZD702    | 93A  | 39-   | 58 -  | 52T | ZD HZ24-2/HITACHI  |
| ZD704    | 93A  | 39-   | 528 - | 52T | ZENER DIODE HZ9A2  |
| ZD901    | 93A  | 39-   | 113 - | 52T | ZD HZ20-2/HITACHI  |
| ZD902    | 93A  | 39-   | 113 - | 52T | ZD HZ20-2/HITACHI  |
| ZD903    | 93A  | 39-   | 520 - | 52T | TZX18A             |
| ZD934    | 93A  | 39-   | 514 - | 52T | HZ9A3 ZENER DIODE  |

## PARTS LIST OF CRT PC BOARD

| LOCATION | C993<br>RAI995TSE |       |       |     | SPECIFICATION<br>CRT BOARD ASS'Y |
|----------|-------------------|-------|-------|-----|----------------------------------|
|          | 40A               | 581-  | 26 -  | 605 | LABEL                            |
|          | 705A              | 995T  | R57 - | 01  | Q802/Q803/Q804 ASS'Y             |
|          | 705A              | 995T  | R87 - | 01P | CRT SOCKET ASS 'Y                |
| C8010    | 65A               | 444-  | 101 - | 5T  | 100PF 10% 50V                    |
| C810     | 67A               | 305-  | 470 - | 9T  | 47Uf 20% 100V                    |
| C853     | 65A               | 2M-   | 103 - | 3B  | 0.01Uf 20% 2KV Z5U               |
| FB810    | 53A               | 40-   | 11    |     | EMI FILTER                       |
| FB811    | 53A               | 40-   | 11    |     | EMI FILTER                       |
| FB812    | 53A               | 40-   | 11    |     | EMI FILTER                       |
| IC801    | 56A               | 366-  | 4     |     | MM1381XD                         |
| P801     | 33A               | 3278- | 11A   |     | 11P PLUG                         |
| P802     | 33A               | 3278- | 9     |     | 9P PLUG                          |
| P803     | 33A               | 3278- | 6     |     | 6P PLUG                          |
| P804     | 33A               | 3278- | 5     |     | 5P PLUG                          |
| P805     | 33A               | 3278- | 7     |     | 7P PLUG                          |
| R833     | 71A               | 55-   | 9 -   | T   | SHIELD BEAD                      |
| R834     | 71A               | 55-   | 9 -   | T   | SHIELD BEAD                      |
| R835     | 71A               | 55-   | 9 -   | T   | SHIELD BEAD                      |
| R836     | 61A               | 155C- | 102 - | H2  | 1K OHM +-5% 5W                   |
| R837     | 61A               | 155C- | 102 - | H2  | 1K OHM +-5% 5W                   |
| R838     | 61A               | 155C- | 102 - | H2  | 1K OHM +-5% 5W                   |
| SG801    | 62A               | 10-   | 2 -   | JT  | SPARK-GAP                        |
| SG802    | 62A               | 10-   | 2 -   | JT  | SPARK-GAP                        |
| SG804    | 62A               | 10-   | 16 -  | W   | SPARK-GAP 1KV                    |

## PARTS LIST OF CRT AUTO INS. PC BOARD

| LOCATION | C993 |       |       |     | SPECIFICATION             |
|----------|------|-------|-------|-----|---------------------------|
|          | 715A | 669-  | 2A    |     | CRPC BOARD                |
| C801     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V            |
| C802     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V            |
| C803     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V            |
| C804     | 67A  | 305-  | 101 - | 3T  | 100uF +-20% 16V           |
| C805     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% 50V       |
| C806     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V            |
| C807     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V            |
| C808     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V            |
| C809     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V            |
| C811     | 67A  | 309-  | 100 - | 7T  | 10uF +-20% 50V            |
| C812     | 64A  | 176J- | 104 - | 1T  | 0.1uF +-5% 100V           |
| C813     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% Y5V 50V   |
| C814     | 65A  | 450-  | 223 - | 4T  | 22000PF +80% -20% Z5V 50V |
| C815     | 65A  | 517M- | 103 - | 3A  | 0.01uF +80% -20% Z5U 500V |
| C816     | 65A  | 450-  | 223 - | 4T  | 22000PF +80% -20% Z5V 50V |
| C817     | 65A  | 450-  | 223 - | 4T  | 22000PF +80% -20% Z5V 50V |
| C818     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% Y5V 50V   |
| C819     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% Y5V 50V   |
| C820     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% Y5V 50V   |
| C821     | 67A  | 305-  | 101 - | 3T  | 100uF +-20% 16V           |
| C822     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% 50V       |
| C823     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% 50V       |
| C824     | 65A  | 442-  | 330 - | 13T | 33PF +-5% NPO 50V         |

| LOCATION | C993 |       |       |     | SPECIFICATION             |
|----------|------|-------|-------|-----|---------------------------|
| C825     | 65A  | 450-  | 473 - | 4T  | 47000PF +80% -20% Z5V 50V |
| C826     | 65A  | 450-  | 473 - | 4T  | 47000PF +80% -20% Z5V 50V |
| C827     | 65A  | 450-  | 473 - | 4T  | 47000PF +80% -20% Z5V 50V |
| C828     | 64A  | 176J- | 104 - | 1T  | 0.1uF +-5% 100V           |
| C829     | 64A  | 176J- | 104 - | 1T  | 0.1uF +-5% 100V           |
| C830     | 64A  | 176J- | 104 - | 1T  | 0.1uF +-5% 100V           |
| C831     | 65A  | 442-  | 330 - | 13T | 33PF +-5% NPO 50V         |
| C832     | 65A  | 442-  | 330 - | 13T | 33PF +-5% NPO 50V         |
| C833     | 65A  | 442-  | 330 - | 13T | 33PF +-5% NPO 50V         |
| C834     | 65A  | 442-  | 330 - | 13T | 33PF +-5% NPO 50V         |
| C835     | 65A  | 442-  | 330 - | 13T | 33PF +-5% NPO 50V         |
| C836     | 65A  | 442-  | 330 - | 13T | 33PF +-5% NPO 50V         |
| C837     | 67A  | 70-   | 109 - | 9T  | 1UF/100V                  |
| C838     | 67A  | 70-   | 109 - | 9T  | 1UF/100V                  |
| C839     | 67A  | 70-   | 109 - | 9T  | 1UF/100V                  |
| C840     | 67A  | 305-  | 109 - | 10T | 1uF +-20% 160V            |
| C841     | 67A  | 305-  | 109 - | 10T | 1uF +-20% 160V            |
| C842     | 67A  | 305-  | 109 - | 10T | 1uF +-20% 160V            |
| C843     | 67A  | 305-  | 109 - | 9T  | 1uF +-20% 100V            |
| C844     | 67A  | 305-  | 109 - | 9T  | 1uF +-20% 100V            |
| C845     | 67A  | 305-  | 109 - | 9T  | 1uF +-20% 100V            |
| C846     | 65A  | 442-  | 330 - | 13T | 33PF +-5% NPO 50V         |
| C847     | 65A  | 442-  | 330 - | 13T | 33PF +-5% NPO 50V         |
| C848     | 65A  | 517K- | 102 - | 1T  | 1NF/500V + -10% Y5P       |
| C849     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% Y5V 50V   |
| C850     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% Y5V 50V   |
| C851     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% Y5V 50V   |
| C852     | 65A  | 517K- | 102 - | 1T  | 1NF/500V + -10% Y5P       |
| C854     | 65A  | 450-  | 104 - | 7T  | 0.1uF +80% -20% Y5V 50V   |
| C855     | 67A  | 309-  | 221 - | 3T  | 220uF +-20% 16V           |
| C857     | 65A  | 517K- | 102 - | 1T  | 1NF/500V + -10% Y5P       |
| C858     | 65A  | 517K- | 102 - | 1T  | 1NF/500V + -10% Y5P       |
| C862     | 65A  | 442-  | 100 - | 13T | 10PF +-5% NPO 50V         |
| C863     | 65A  | 442-  | 100 - | 13T | 10PF +-5% NPO 50V         |
| C864     | 65A  | 442-  | 100 - | 13T | 10PF +-5% NPO 50V         |
| C865     | 65A  | 1K-   | 101 - | 5T  | 100PF/1KV + -10% Y5P      |
| D801     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D802     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D803     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D804     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D805     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D806     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D807     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D808     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D809     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D810     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D811     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D812     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D813     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D814     | 93A  | 64-   | 19 -  | 52T | DIODE 1SS83               |
| D815     | 93A  | 64-   | 19 -  | 52T | DIODE 1SS83               |
| D816     | 93A  | 64-   | 19 -  | 52T | DIODE 1SS83               |
| D817     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D818     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D819     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D820     | 93A  | 1060- | 6 -   | 52T | BYV26C                    |
| D821     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D822     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D823     | 93A  | 64-   | 11 -  | 52T | DIODE IN4148              |
| D824     | 93A  | 64-   | 19 -  | 52T | DIODE 1SS83               |
| D825     | 93A  | 64-   | 19 -  | 52T | DIODE 1SS83               |
| D826     | 93A  | 64-   | 19 -  | 52T | DIODE 1SS83               |
| D827     | 95A  | 90-   | 23    |     | TIN COATED                |

| LOCATION | C993 |      |       |     | SPECIFICATION          |
|----------|------|------|-------|-----|------------------------|
| FB801    | 71A  | 55-  | 9 -   | T   | SHIELD BEAD            |
| FB802    | 71A  | 55-  | 9 -   | T   | SHIELD BEAD            |
| FB803    | 71A  | 55-  | 9 -   | T   | SHIELD BEAD            |
| FB804    | 71A  | 55-  | 9 -   | T   | SHIELD BEAD            |
| FB805    | 61A  | 602- | 560 - | 52T | 56 OHM +-5% 1/6W       |
| FB806    | 61A  | 602- | 560 - | 52T | 56 OHM +-5% 1/6W       |
| FB807    | 61A  | 602- | 560 - | 52T | 56 OHM +-5% 1/6W       |
| FB808    | 71A  | 55-  | 9 -   | T   | SHIELD BEAD            |
| FB809    | 71A  | 55-  | 9 -   | T   | SHIELD BEAD            |
| J802     | 95A  | 90-  | 23    |     | TIN COATED             |
| J803     | 95A  | 90-  | 23    |     | TIN COATED             |
| J804     | 95A  | 90-  | 23    |     | TIN COATED             |
| J805     | 95A  | 90-  | 23    |     | TIN COATED             |
| J806     | 95A  | 90-  | 23    |     | TIN COATED             |
| J808     | 95A  | 90-  | 23    |     | TIN COATED             |
| J809     | 95A  | 90-  | 23    |     | TIN COATED             |
| J810     | 95A  | 90-  | 23    |     | TIN COATED             |
| J811     | 95A  | 90-  | 23    |     | TIN COATED             |
| J812     | 95A  | 90-  | 23    |     | TIN COATED             |
| J813     | 95A  | 90-  | 23    |     | TIN COATED             |
| J814     | 95A  | 90-  | 23    |     | TIN COATED             |
| J815     | 95A  | 90-  | 23    |     | TIN COATED             |
| J816     | 95A  | 90-  | 23    |     | TIN COATED             |
| J817     | 95A  | 90-  | 23    |     | TIN COATED             |
| J819     | 95A  | 90-  | 23    |     | TIN COATED             |
| J820     | 95A  | 90-  | 23    |     | TIN COATED             |
| J821     | 95A  | 90-  | 23    |     | TIN COATED             |
| J822     | 95A  | 90-  | 23    |     | TIN COATED             |
| J823     | 95A  | 90-  | 23    |     | TIN COATED             |
| L801     | 73A  | 54-  | 229 - | 5T  | 2.2uH CHOKE COIL       |
| L802     | 73A  | 54-  | 229 - | 5T  | 2.2uH CHOKE COIL       |
| L803     | 73A  | 54-  | 229 - | 5T  | 2.2uH CHOKE COIL       |
| L807     | 73A  | 54-  | 338 - | 5T  | 0.33uH +-5% CHOKE COIL |
| L808     | 73A  | 54-  | 338 - | 5T  | 0.33uH +-5% CHOKE COIL |
| L809     | 73A  | 54-  | 338 - | 5T  | 0.33uH +-5% CHOKE COIL |
| Q801     | 57A  | 420- | P -   | T   | TR. 2SA733P/NEC        |
| Q805     | 57A  | 516- | 1 -   | T   | TR. PH2369             |
| Q806     | 57A  | 516- | 1 -   | T   | TR. PH2369             |
| Q807     | 57A  | 516- | 1 -   | T   | TR. PH2369             |
| Q808     | 57A  | 744- | 2 -   | T   | TR. BFQ221             |
| Q809     | 57A  | 744- | 2 -   | T   | TR. BFQ221             |
| Q810     | 57A  | 744- | 2 -   | T   | TR. BFQ221             |
| Q811     | 57A  | 745- | 2 -   | T   | TR. BFQ241             |
| Q812     | 57A  | 745- | 2 -   | T   | TR. BFQ241             |
| Q813     | 57A  | 745- | 2 -   | T   | TR. BFQ241             |
| Q817     | 57A  | 493- | 500 - | T   | TR. BF422              |
| Q818     | 57A  | 493- | 500 - | T   | TR. BF422              |
| Q819     | 57A  | 493- | 500 - | T   | TR. BF422              |
| R801     | 61A  | 602- | 750 - | 52T | 75 OHM +-5% 1/6W       |
| R802     | 61A  | 602- | 750 - | 52T | 75 OHM +-5% 1/6W       |
| R803     | 61A  | 602- | 750 - | 52T | 75 OHM +-5% 1/6W       |
| R804     | 61A  | 602- | 330 - | 52T | 33 OHM +-5% 1/6W       |
| R805     | 61A  | 602- | 330 - | 52T | 33 OHM +-5% 1/6W       |
| R806     | 61A  | 602- | 330 - | 52T | 33 OHM +-5% 1/6W       |
| R807     | 61A  | 602- | 101 - | 52T | 100 OHM +-5% 1/6W      |
| R808     | 61A  | 602- | 101 - | 52T | 100 OHM +-5% 1/6W      |
| R809     | 61A  | 602- | 101 - | 52T | 100 OHM +-5% 1/6W      |
| R810     | 61A  | 602- | 101 - | 52T | 100 OHM +-5% 1/6W      |
| R811     | 61A  | 602- | 562 - | 52T | 5.6K OHM +-5% 1/6W     |
| R812     | 61A  | 602- | 152 - | 52T | 1.5K OHM +-5% 1/6W     |
| R813     | 61A  | 602- | 102 - | 52T | 1K OHM +-5% 1/6W       |
| R814     | 61A  | 602- | 102 - | 52T | 1K OHM +-5% 1/6W       |

| LOCATION | C993 |       |       |     | SPECIFICATION      |
|----------|------|-------|-------|-----|--------------------|
| R815     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R816     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R817     | 61A  | 602-  | 393 - | 52T | 39K OHM +-5% 1/6W  |
| R818     | 61A  | 602-  | 101 - | 52T | 100 OHM +-5% 1/6W  |
| R819     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R820     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R821     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R822     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R823     | 61A  | 602-  | 912 - | 52T | 9.1K OHM +-5% 1/6W |
| R824     | 61A  | 602-  | 271 - | 52T | 270 OHM +-5% 1/6W  |
| R825     | 61A  | 602-  | 271 - | 52T | 270 OHM +-5% 1/6W  |
| R826     | 61A  | 602-  | 271 - | 52T | 270 OHM +-5% 1/6W  |
| R830     | 61A  | 172-  | 151 - | 52T | 150 OHM +-5% 1/4W  |
| R831     | 61A  | 172-  | 151 - | 52T | 150 OHM +-5% 1/4W  |
| R832     | 61A  | 172-  | 151 - | 52T | 150 OHM +-5% 1/4W  |
| R839     | 95A  | 90-   | 23    |     | TIN COATED         |
| R840     | 95A  | 90-   | 23    |     | TIN COATED         |
| R841     | 95A  | 90-   | 23    |     | TIN COATED         |
| R842     | 61A  | 602-  | 201 - | 52T | 200 OHM +-5% 1/6W  |
| R843     | 61A  | 602-  | 201 - | 52T | 200 OHM +-5% 1/6W  |
| R844     | 61A  | 602-  | 201 - | 52T | 200 OHM +-5% 1/6W  |
| R845     | 61A  | 602-  | 510 - | 52T | 51 OHM +-5% 1/6W   |
| R846     | 61A  | 602-  | 510 - | 52T | 51 OHM +-5% 1/6W   |
| R847     | 61A  | 602-  | 510 - | 52T | 51 OHM +-5% 1/6W   |
| R848     | 61A  | 175L- | 111 - | 52T | 110 OHM +-5% 1/2W  |
| R849     | 61A  | 175L- | 111 - | 52T | 110 OHM +-5% 1/2W  |
| R850     | 61A  | 175L- | 111 - | 52T | 110 OHM +-5% 1/2W  |
| R851     | 61A  | 602-  | 682 - | 52T | 6.8K OHM +-5% 1/6W |
| R852     | 61A  | 602-  | 682 - | 52T | 6.8K OHM +-5% 1/6W |
| R853     | 61A  | 602-  | 682 - | 52T | 6.8K OHM +-5% 1/6W |
| R854     | 61A  | 602-  | 220 - | 52T | 22 OHM +-5% 1/6W   |
| R855     | 61A  | 602-  | 220 - | 52T | 22 OHM +-5% 1/6W   |
| R856     | 61A  | 602-  | 220 - | 52T | 22 OHM +-5% 1/6W   |
| R857     | 61A  | 602-  | 470 - | 52T | 47 OHM +-5% 1/6W   |
| R858     | 61A  | 602-  | 470 - | 52T | 47 OHM +-5% 1/6W   |
| R859     | 61A  | 602-  | 470 - | 52T | 47 OHM +-5% 1/6W   |
| R866     | 61A  | 602-  | 105 - | 52T | 1M OHM +-5% 1/6W   |
| R867     | 61A  | 602-  | 105 - | 52T | 1M OHM +-5% 1/6W   |
| R868     | 61A  | 602-  | 105 - | 52T | 1M OHM +-5% 1/6W   |
| R869     | 61A  | 172-  | 153 - | 52T | 15K OHM +-5% 1/4W  |
| R870     | 61A  | 172-  | 153 - | 52T | 15K OHM +-5% 1/4W  |
| R871     | 61A  | 172-  | 153 - | 52T | 15K OHM +-5% 1/4W  |
| R872     | 61A  | 602-  | 473 - | 52T | 47K OHM +-5% 1/6W  |
| R873     | 61A  | 602-  | 473 - | 52T | 47K OHM +-5% 1/6W  |
| R874     | 61A  | 602-  | 473 - | 52T | 47K OHM +-5% 1/6W  |
| R875     | 61A  | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W |
| R876     | 61A  | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W |
| R877     | 61A  | 602-  | 222 - | 52T | 2.2K OHM +-5% 1/6W |
| R878     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R879     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R880     | 61A  | 602-  | 102 - | 52T | 1K OHM +-5% 1/6W   |
| R884     | 61A  | 175L- | 680 - | 52T | 68 OHM +-5% 1/2W   |
| R885     | 61A  | 175L- | 680 - | 52T | 68 OHM +-5% 1/2W   |
| R886     | 61A  | 175L- | 680 - | 52T | 68 OHM +-5% 1/2W   |
| R887     | 61A  | 175L- | 101 - | 52T | 100 OHM +-5% 1/2W  |
| R888     | 61A  | 175L- | 564 - | 52T | 560K OHM +-5% 1/2W |
| SG803    | 62A  | 10-   | 2 -   | JT  | SPARK GAP          |

## PARTS LIST OF Q802/Q803/Q804 ASS'Y

| LOCATION             | PARTS     | No.      | SPECIFICATION |
|----------------------|-----------|----------|---------------|
| Q802<br>Q803<br>Q804 | 32A 3028- | 17       | MICA          |
|                      | 90A 361-  | 1 - A    | HEAT SINK     |
|                      | M1A 1730- | 10 - 128 | SCREW         |
|                      | 57A 509-  | 6        | TR. 2SC3953E  |
|                      | 57A 509-  | 6        | TR. 2SC3953E  |
|                      | 57A 509-  | 6        | TR. 2SC3953E  |

## PARTS LIST OF CRT SOCKET ASS'Y

| LOCATION | PARTS     | No. | SPECIFICATION  |
|----------|-----------|-----|----------------|
|          | 87A 3504- | 2   | 17" CRT SOCKET |

## PARTS LIST OF IC601 ASS'Y

| LOCATION | PARTS     | No.      | SPECIFICATION |
|----------|-----------|----------|---------------|
| IC601    | 11A 6007- | 2        | BUSHING       |
|          | 90A 351-  | 500 - A  | HEAT SINK     |
|          | M1A 1730- | 10 - 128 | SCREW         |
|          | 56A 5002- | 1        | TDA4866       |

## PARTS LIST OF IC904 ASS'Y

| LOCATION | PARTS     | No.      | SPECIFICATION |
|----------|-----------|----------|---------------|
| IC904    | 90A 360-  | 2        | HEAT SINK     |
|          | M1A 1730- | 8 - 128  | SCREW         |
|          | 56A 133-  | 12 - STM | L7812CV       |

## PARTS LIST OF Q901 ASS'Y

| LOCATION | PARTS     | No.      | SPECIFICATION   |
|----------|-----------|----------|-----------------|
| Q901     | 5A 42-    | 501      | WASHER          |
|          | 12A 372-  | 1        | SILICONE RUBBER |
|          | 90A 348-  | 3        | HEAT SINK       |
|          | M1A 1730- | 10 - 128 | SCREW           |
|          | 57A 724-  | 4        | 2SK2996         |

## PARTS LIST OF Q425 ASS'Y

| LOCATION | PARTS | No.   |         | SPECIFICATION   |
|----------|-------|-------|---------|-----------------|
| Q425     | 32A   | 3028- | 502     | MICA            |
|          | 90A   | 360-  | 2       | HEAT SINK       |
|          | M1A   | 1730- | 8 - 128 | SCREW           |
|          | 57A   | 728-  | 3       | HSB772P/HSB772E |

## PARTS LIST OF Q420 ASS'Y

| LOCATION | PARTS | No.   |         | SPECIFICATION  |
|----------|-------|-------|---------|----------------|
| Q420     | 2A    | 6003- | 1       | SCREW NUT      |
|          | 90A   | 6015- | 1       | HEAT SINK      |
|          | M1A   | 1730- | 8 - 128 | SCREW          |
|          | 57A   | 600-  | 2       | MOS FET IRF630 |

## PARTS LIST OF Q403/Q405/Q911/D408 ASS'Y

| LOCATION                     | PARTS | No.   |          | SPECIFICATION        |
|------------------------------|-------|-------|----------|----------------------|
| D408<br>Q403<br>Q405<br>Q911 | 5A    | 42-   | 501      | WASHER               |
|                              | 12A   | 372-  | 1        | SILICONE RUBBER      |
|                              | 32A   | 3028- | 8        | MICA                 |
|                              | 90A   | 367-  | 507      | HEAT SINK            |
|                              | M1A   | 1130- | 10 - 128 | SCREW                |
|                              | M1A   | 1730- | 8 - 128  | SCREW                |
|                              | M1A   | 1730- | 10 - 128 | SCREW                |
|                              | 93A   | 220-  | 17       | FMQ-2FUR             |
|                              | 57A   | 706-  | 7        | 2SC5521Z             |
|                              | 57A   | 415-  | 1        | TR. NPN TIP122       |
|                              | 57A   | 600-  | 504      | POWER MOSFET IRF634A |

## PARTS LIST OF CN901 ASS'Y

| LOCATION | PARTS | No.  |         | SPECIFICATION |
|----------|-------|------|---------|---------------|
|          | 87A   | 501- | 5       | RECEPTACLES   |
|          | 95A   | 800- | 2 - 2C  | WIRE ASS'Y    |
|          | 96A   | 29-  | 6 - 190 | H.S. TUBING   |

## PARTS LIST OF D921 ASS'Y

| LOCATION | PARTS | No.   |     | SPECIFICATION |
|----------|-------|-------|-----|---------------|
| D921     | 71A   | 55-   | 2   | FERRITE BEAD  |
|          | 90A   | 360-  | 501 | HEAT SINK     |
|          | 93A   | 3040- | 8T  | RG-4          |

**PARTS LIST CRT ALTERNATION**

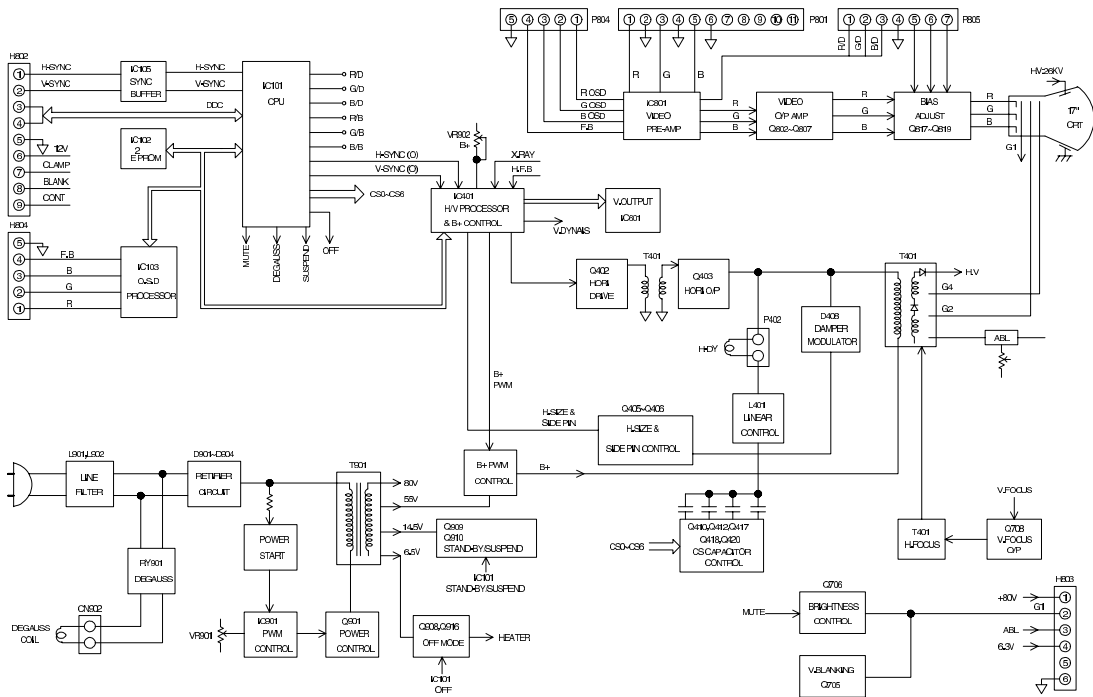
| LOCATION | PARTS |       | No.   | SPECIFICATION         |            |
|----------|-------|-------|-------|-----------------------|------------|
|          | 750A  | 5455- | 1AV   | M46QCG903*21(A)19” LG |            |
|          | 50A   | 500-  | 1     | CABLE TIE             |            |
|          | 52A   | 6000- | AL    | COPPER FOIL           |            |
|          | 52A   | 1-    | 201   | ALUMINUM FOIL         |            |
| C498     | 65A   | 1K-   | 151 - | 6A                    | 1KV 150PF  |
| CL1      | 95A   | 201F- | 50 -  | 032                   | WIRE ASS’Y |
| TP498    | 95A   | 201M- | 50 -  | 172                   | WIRE ASS’Y |

**PARTS LIST CRT ALTERNATION**

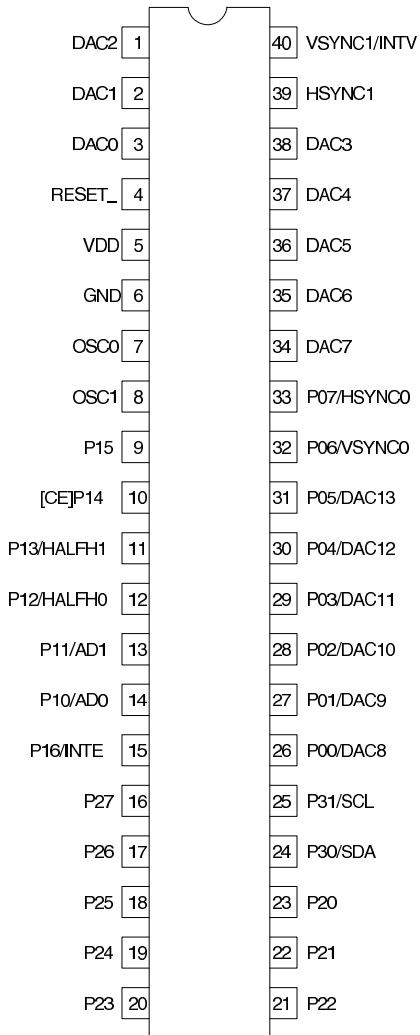
| LOCATION | PARTS      | No.   | SPECIFICATION        |            |
|----------|------------|-------|----------------------|------------|
|          | 750A 5455- | 1AV   | M46QC903*21(A)19" LG |            |
|          | 50A 500-   | 1     | CABLE TIE            |            |
|          | 52A 1-     | 201   | ALUMINUM FOIL        |            |
|          | 52A 6001-  | 2     | COPPER FOIL          |            |
| C498     | 65A 1K-    | 151 - | 6A                   | 1KV 150PF  |
| CL1      | 95A 201F-  | 50 -  | 032                  | WIRE ASS'Y |
| TP498    | 95A 201M-  | 50 -  | 172                  | WIRE ASS'Y |

**PARTS LIST CRT ALTERNATION**

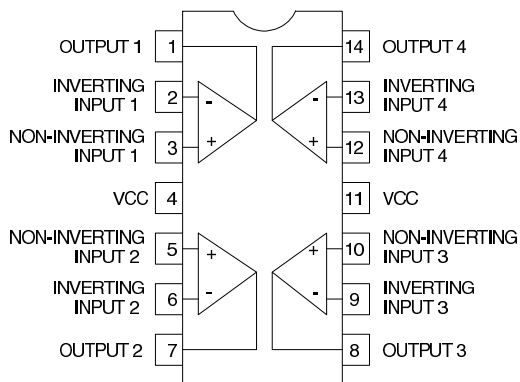
| LOCATION | PARTS |       | No.   | SPECIFICATION |                      |
|----------|-------|-------|-------|---------------|----------------------|
|          | 750A  | 5455- | 1AV   |               | M46QC903*21(A)19" LG |
|          | 50A   | 500-  | 1     |               | CABLE TIE            |
|          | 52A   | 1-    | 201   |               | ALUMINUM FOIL        |
| C498     | 65A   | 1K-   | 151 - | 6A            | 1KV 150PF            |
| TP498    | 95A   | 201-  | 50 -  | 172           | WIRE ASS'Y           |



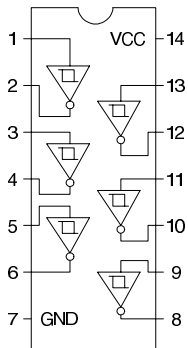
IC101  
UM6861



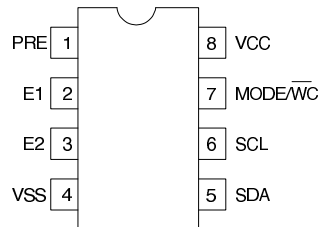
IC402  
LM324



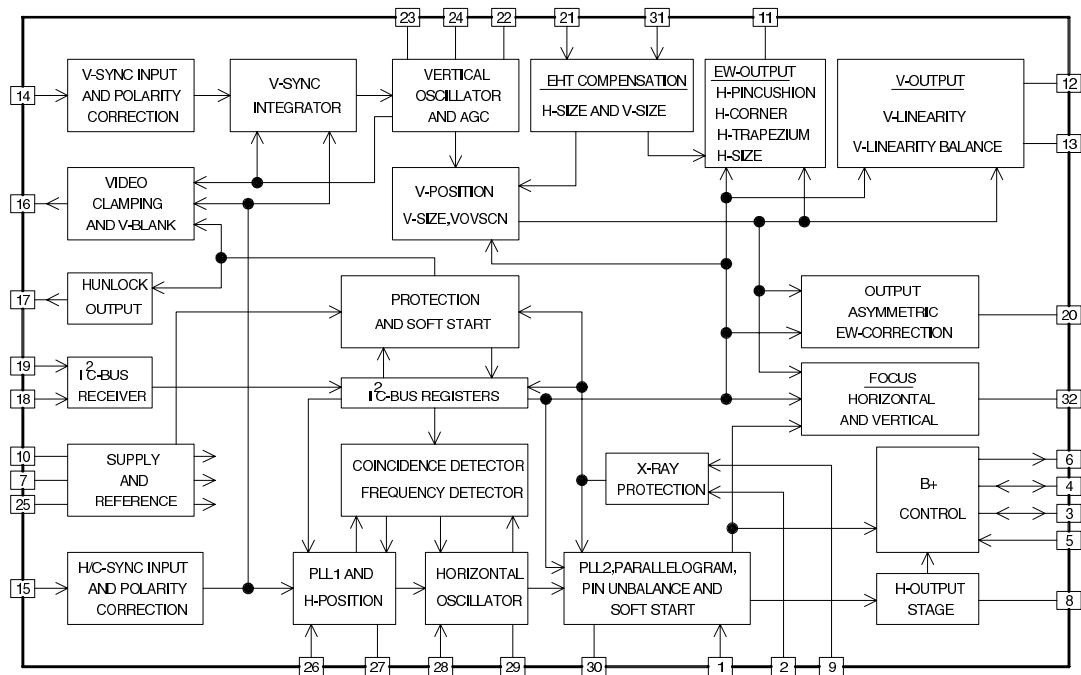
IC105  
74LS14



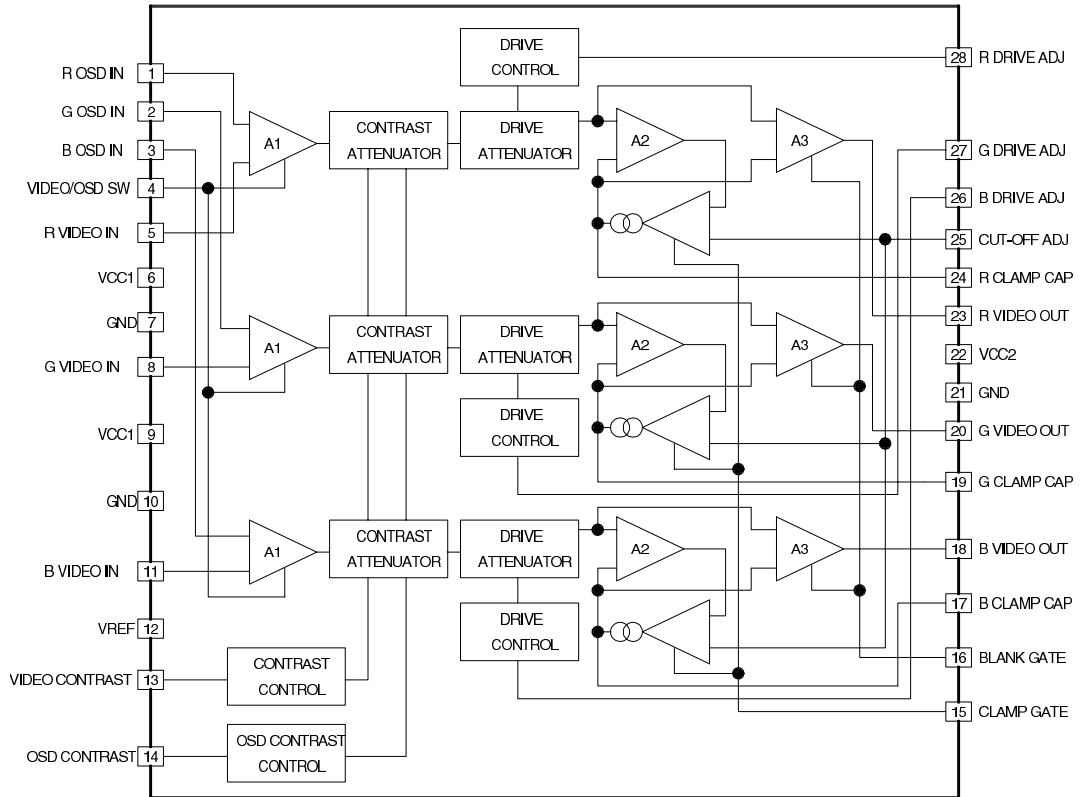
IC10  
ST24W08



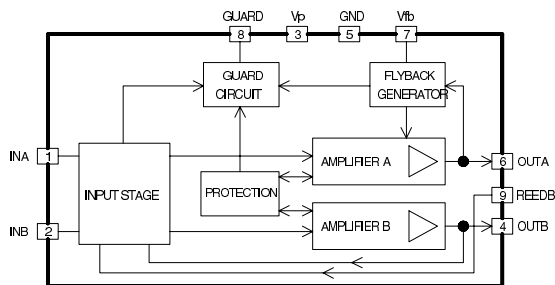
# IC401 TDA4856/41



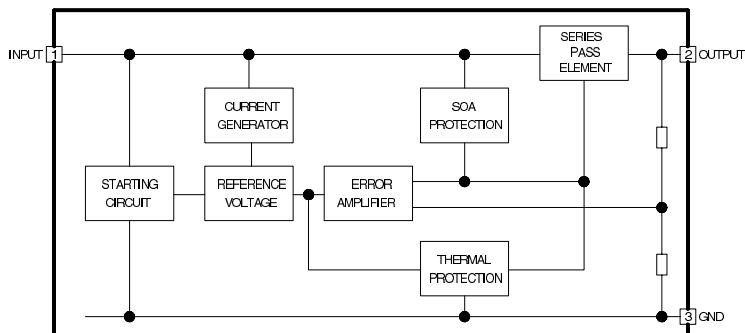
# IC801 MM1381XD



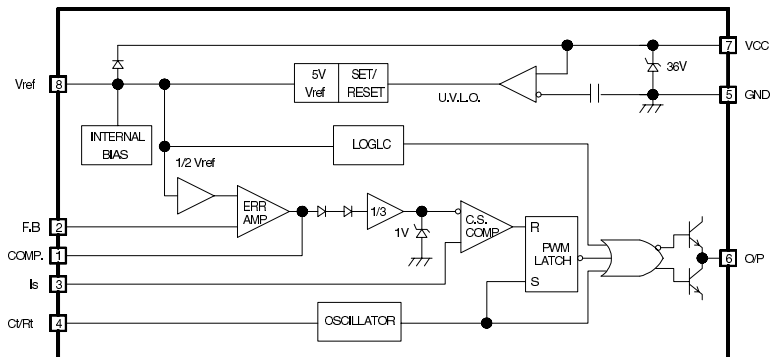
IC601 TDA4866



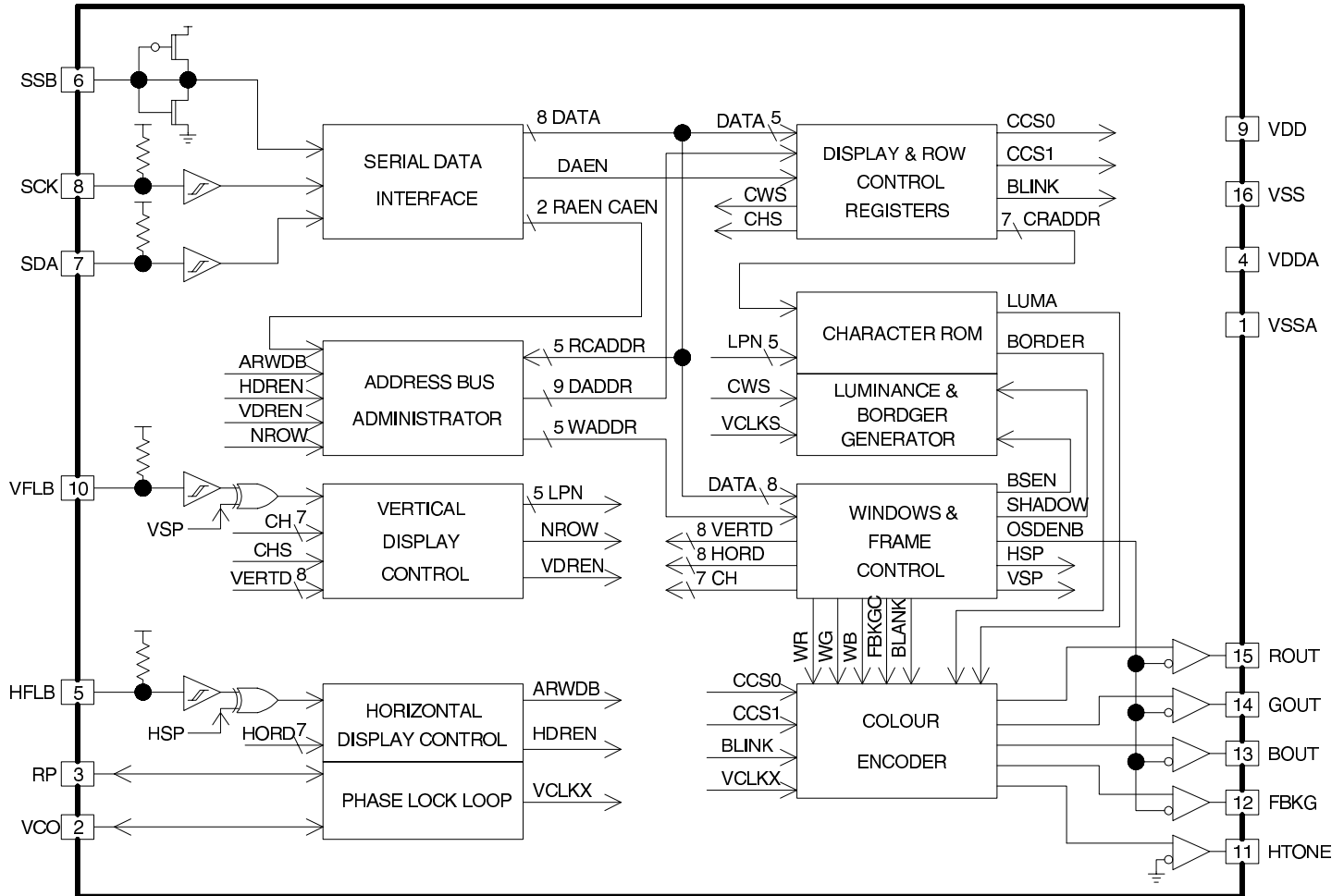
IC904 LM7812



IC901 3842

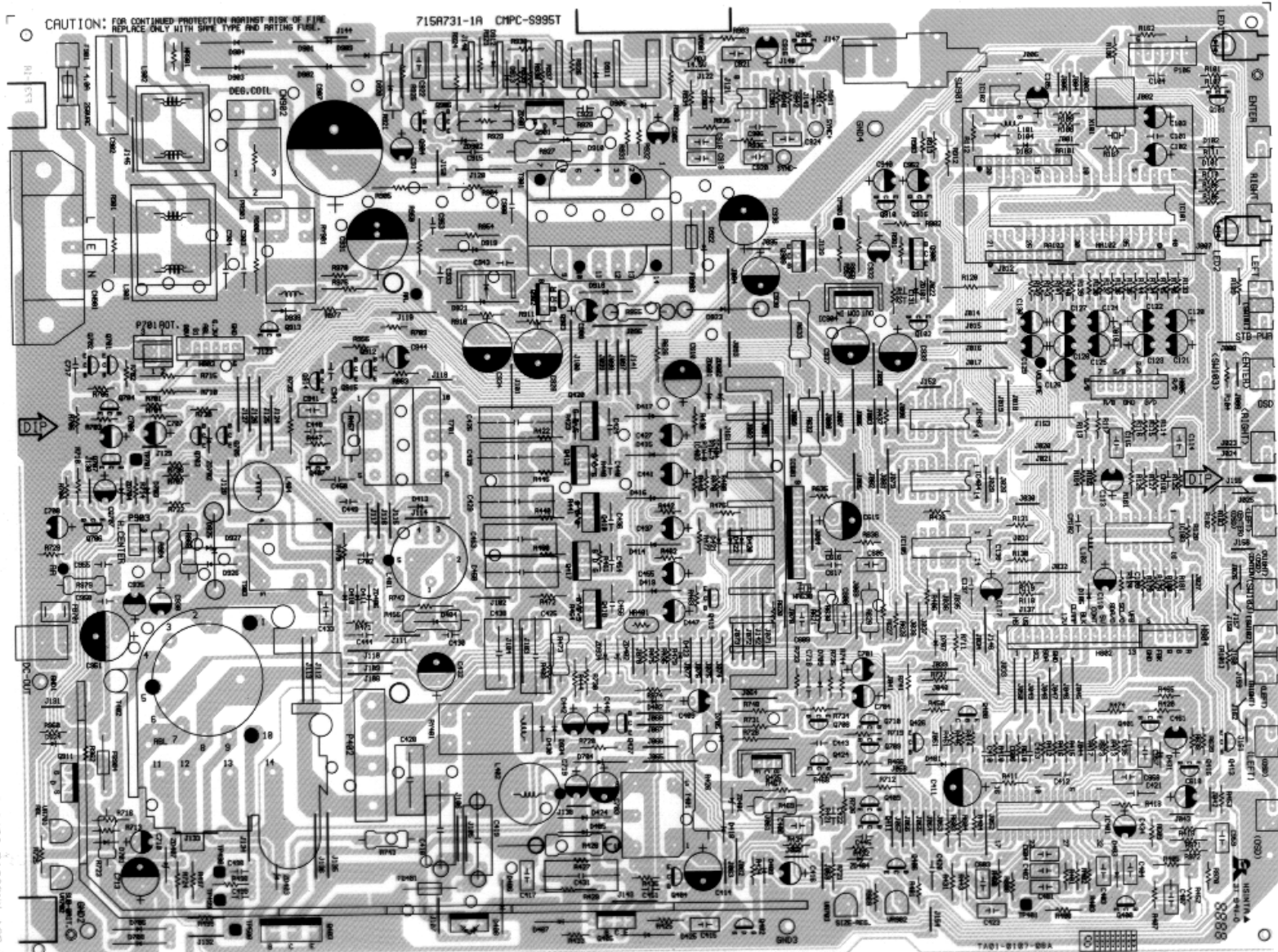


# IC103 MTV016/MTV018



CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE  
REPLACE ONLY WITH SAME TYPE AND RATING TUBE.

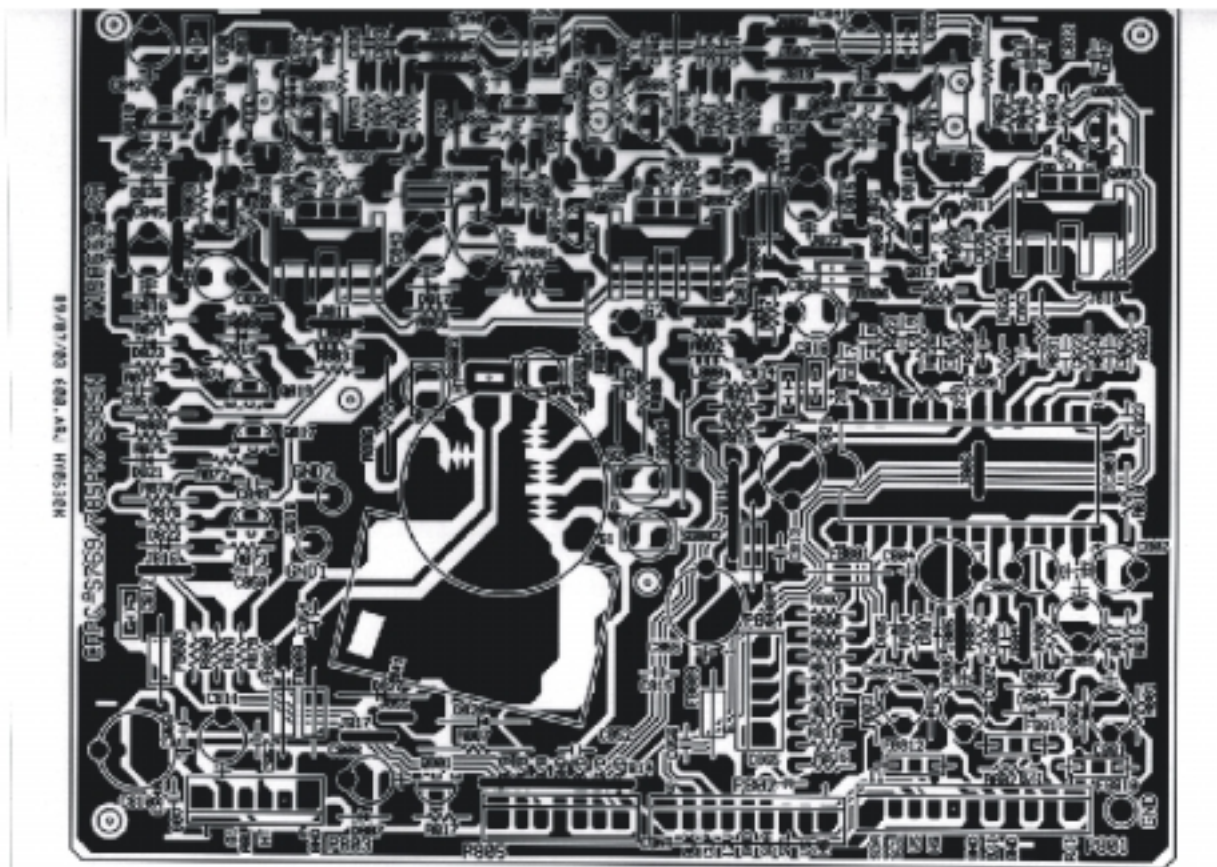
715A731-1A CHMP-5995T



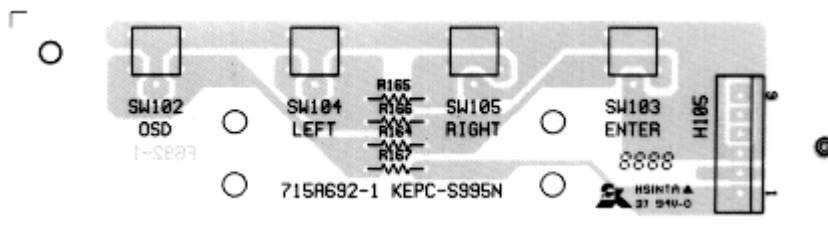
7A01-8187-80A

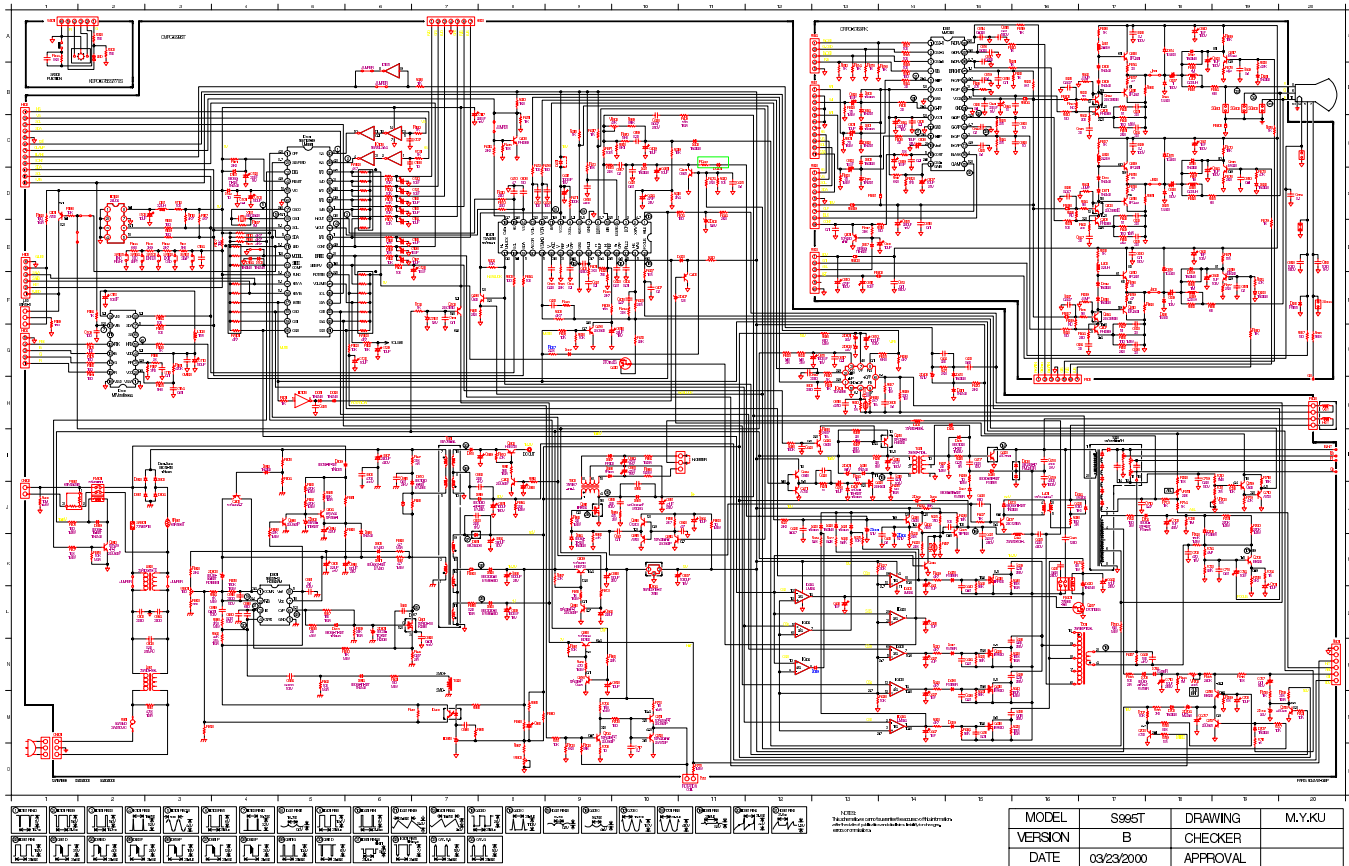
8888

## 11-2 CRT BOARD LAYOUT



## 11-3 KEY BOARD LAYOUT





|         |            |          |        |
|---------|------------|----------|--------|
| MODEL   | S995T      | DRAWING  | M.Y.KU |
| VERSION | B          | CHECKER  |        |
| DATE    | 03/23/2000 | APPROVAL |        |

