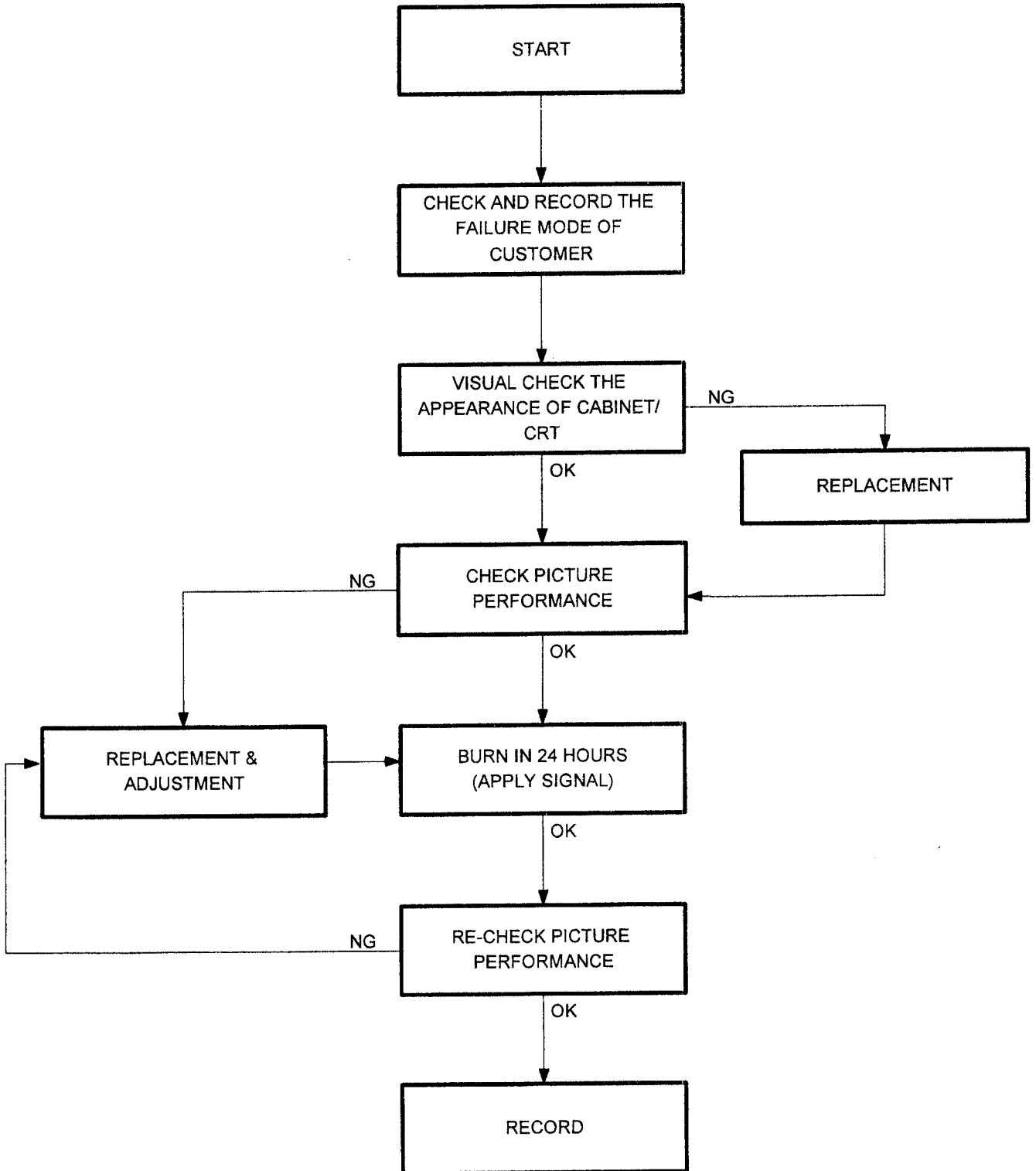


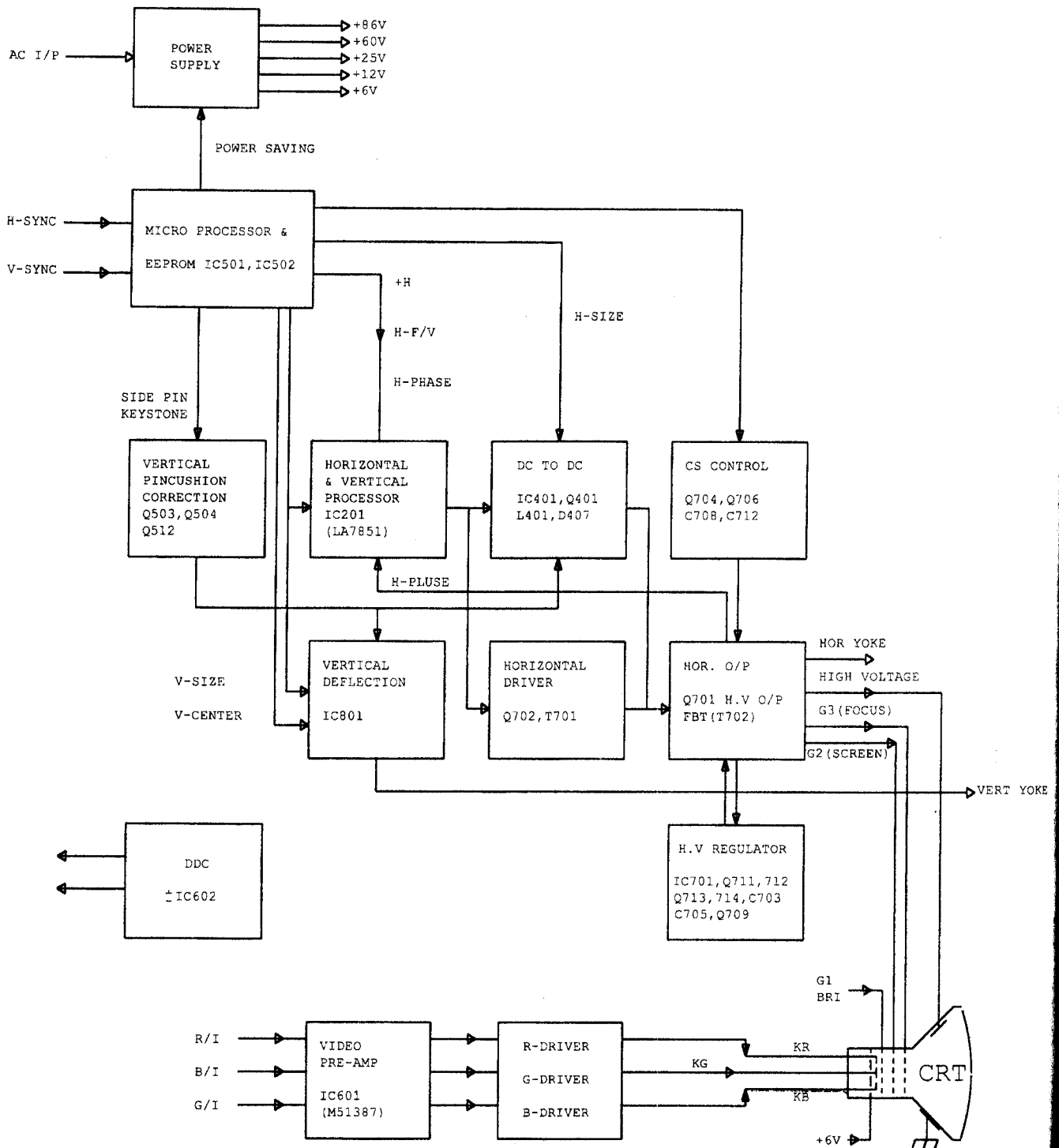
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## 2.0 GENERAL MAINTENANCE PROCEDURE



### 3.0 FUNCTION BLOCK DIAGRAM



## 4.0 TIMING MODE (CTX Presetting Timing )

| NAME               | VGA-400   |           | VGA-480   |           | VESA-480   |           | SVGA II   |           |
|--------------------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| PIXEL RATE         | 25.2 MHZ  |           | 25.2 MHZ  |           | 31.5MHZ    |           | 40 MHZ    |           |
| Fh                 | 31.5 KHZ  |           | 31.5 KHZ  |           | 37.861 KHZ |           | 37.879KHZ |           |
| Fv                 | 70 HZ     |           | 60 HZ     |           | 70.810 HZ  |           | 60.317 HZ |           |
| INTERLACE MODE     | NO        |           | NO        |           | NO         |           | NO        |           |
| OUTPUT             | ANALOG    |           | ANALOG    |           | ANALOG     |           | ANALOG    |           |
| FULL SCALE VPP     | 1,000     |           | 1,000     |           | 1,000      |           | 1,000     |           |
| SYNC ON R/G/B      | NO        |           | NO        |           | NO         |           | NO        |           |
| CONTROL BITS       | 0000 0000 |           | 0000 0000 |           | 0000 0000  |           | 0000 0000 |           |
| UNIT OF DATA       | PIXEL     | us/ms     | PIXEL     | us/ms     | PIXEL      | us/ms     | PIXEL     | us/ms     |
| H TOTAL            | 800       | 31.746us  | 800       | 31.746 us | 832        | 26.413 us | 1056      | 26.4 us   |
| H DISPLAY          | 641       | 25.437 us | 641       | 25.437 us | 640        | 20.317 us | 800       | 20.0 us   |
| H B-PORCH          | 48        | 1.905 us  | 48        | 1.905 us  | 128        | 4.063 us  | 88        | 2.2 us    |
| H S WIDTH          | 96        | 3.81 us   | 96        | 3.81 us   | 40         | 1.270 us  | 128       | 3.2 us    |
| H BORDER           | 0         | 0.000 us  | 0         | 0.000 us  | 0          | 0.000 us  | 0         | 0.000 us  |
| H SIZE             | 4.000 mm  |           | 4.000 mm  |           | 4.000 mm   |           | 4.000 mm  |           |
| V TOTAL            | 450       | 14.286ms  | 525       | 16.667 ms | 525        | 13.734ms  | 628       | 16.579 ms |
| V DISPLAY          | 400       | 12.698ms  | 480       | 15.238ms  | 480        | 12.678ms  | 600       | 15.840ms  |
| V B-PORCH          | 35        | 1.111 ms  | 33        | 1.048 ms  | 28         | 0.740 ms  | 23        | 0.607 ms  |
| V S WIDTH          | 2         | 0.063 ms  | 2         | 0.063 ms  | 3          | 0.079 ms  | 4         | 0.106 ms  |
| V BORDER           | 0         | 0.000 ms  | 0         | 0.000 ms  | 0          | 0.000 ms  | 0         | 0.000 ms  |
| V SIZE             | 3.000 mm  |           | 3.000 mm  |           | 3.000 mm   |           | 3.000 mm  |           |
| H SYNC POLARITY    | ON (-)    |           | ON (-)    |           | ON (-)     |           | ON (+)    |           |
| V SYNC POLARITY    | ON (+)    |           | ON (-)    |           | ON (-)     |           | ON (+)    |           |
| EQUALIZATION ?     | NO        |           | NO        |           | NO         |           | NO        |           |
| SERRATION ?        | NO        |           | NO        |           | NO         |           | NO        |           |
| COMP SYNC POLARITY | -         |           | -         |           | -          |           | -         |           |

| NAME               | SVGA III   |          | 8514NI     |           | VESA II 480 |           | VESA-800FJ |           |
|--------------------|------------|----------|------------|-----------|-------------|-----------|------------|-----------|
| PIXEL RATE         | 50 MHZ     |          | 65 MHZ     |           | 31.5 MHZ    |           | 49.517 MHZ |           |
| Fh                 | 48.077 KHZ |          | 48.363 KHZ |           | 37.5 KHZ    |           | 46.891 KHZ |           |
| Fv                 | 72.188 HZ  |          | 60.004 HZ  |           | 75 HZ       |           | 75.026 HZ  |           |
| INTERLACE MODE     | NO         |          | NO         |           | NO          |           | NO         |           |
| OUTPUT             | ANALOG     |          | ANALOG     |           | ANALOG      |           | ANALOG     |           |
| FULL SCALE VPP     | 1,000      |          | 1,000      |           | 1,000       |           | 1,000      |           |
| SYNC ON R/G/B      | NO         |          | NO         |           | NO          |           | NO         |           |
| CONTROL BITS       | 0000 0000  |          | 0000 0000  |           | 0000 0000   |           | 0000 0000  |           |
| UNIT OF DATA       | PIXEL      | us/ms    | PIXEL      | us/ms     | PIXEL       | us/ms     | PIXEL      | us/ms     |
| H TOTAL            | 1040       | 20.8 us  | 1344       | 20.677 us | 840         | 26.667 us | 1056       | 21.326 us |
| H DISPLAY          | 800        | 16.0 us  | 1024       | 15.754 us | 640         | 20.317 us | 800        | 16.156 us |
| H B-PORCH          | 64         | 1.28 us  | 160        | 2.462 us  | 120         | 3.810 us  | 147        | 3.191 us  |
| H S WIDTH          | 120        | 2.4 us   | 136        | 2.092 us  | 64          | 2.032 us  | 80         | 1.616 us  |
| H BORDER           | 0          | 0.000 us | 0          | 0.000 us  | 0           | 0.000 us  | 0          | 0.000 us  |
| H SIZE             | 4.000 mm   |          | 4.000 mm   |           | 4.000 mm    |           | 4.000 mm   |           |
| V TOTAL            | 666        | 13.853ms | 806        | 16.666ms  | 500         | 13.333ms  | 625        | 13.329 ms |
| V DISPLAY          | 600        | 12.480ms | 768        | 15.880ms  | 480         | 12.800ms  | 600        | 12.796 ms |
| V B-PORCH          | 23         | 0.478 ms | 29         | 0.600 ms  | 16          | 0.427 ms  | 21         | 0.448 ms  |
| V S WIDTH          | 6          | 0.125 ms | 6          | 0.124 ms  | 3           | 0.080 ms  | 3          | 0.064 ms  |
| V BORDER           | 0          | 0.000 ms | 0          | 0.000 ms  | 0           | 0.000 ms  | 0          | 0.000 ms  |
| V SIZE             | 3.000 mm   |          | 3.000 mm   |           | 3.000 mm    |           | 3.000 mm   |           |
| H SYNC POLARITY    | ON (+)     |          | ON (-)     |           | ON (-)      |           | ON (+)     |           |
| V SYNC POLARITY    | ON (+)     |          | ON (+)     |           | ON (+)      |           | ON (+)     |           |
| EQUALIZATION ?     | NO         |          | NO         |           | NO          |           | NO         |           |
| SERRATION ?        | NO         |          | NO         |           | NO          |           | NO         |           |
| COMP SYNC POLARITY | -          |          | -          |           | -           |           | -          |           |

## 5.0 ADJUSTMENT

### 5.1 1451E/D ADJUSTMENT

#### REM:PRESET MODE DATA ADJUSTMENT:

- A. Turn off it.
- B. Press the ⊕ and ⊖ at same time which on the external control panel.
- C. Turn on it.

Remark: Before adjusting, monitor must warm up 10 minutes and CRT must be degaussed.

- **Voltage adjustment**
  1. Use VGA-480 timing for input signal.
  2. Attach the multimeter (with a DC voltage range of 200V) adjust VR101 to get  $85.5V \pm 0.5V$  at TP1.
  3. Adjust VR102 to get  $12V \pm 0.05V$  at TP2.
- **Hi-voltage adjustment: VR702 / SVGA II**
  - a. Turn the power switch of before attaching multimeter with a high voltage probe by a factor 1000;1 between CRT anode and GND.
  - b. Adjust VR702 to make sure the measurement readings are  $23.8V \pm 0.2V$  (ie CRT anode voltage is  $23.8V \pm 0.2KV$ ).
- Horizontal hold adjustment: VR201, VR202
  - a. Connect TP4 to GND adjust VR202 to get picture stand or scroll toward left or right slowly when input is VGA-480 timing signal.
  - b. Change input timing to 8514NI and adjust VR201 to get picture stand.
- **H-PHASE adjustment: EXT SW / ALL MODE**  
adjust EXTERNAL H-PHASE SW to shift picture to the center of screen, every mode.
- **V-LINE adjustment: VR801 / VESA-480**  
First adjust V-center EXTERNAL VR to make picture to the V-center of the screen, and then adjust VR801 to correct the V-linearity of cross-hatch pattern.
- **H-WIDTH adjustment: VR401 / SVGA-II**
  - a. Turn EXTERNAL H-WIDTH VR to max. position.
  - b. Adjust VR401 to get the picture's width is full scan.
- **V-SIZE adjustment: EXT SW / ALL MODE**  
Adjust EXT V-SIZE SW to get vertical size of each model is  $189 \pm 5mm$ .
- **PARALLELOGRAM adjustment: VR204 / VESA-480**  
Adjust VR204 to get a picture that right edge parallel with left edge of each mode; which the spec is  $\pm 2mm$ .
- **FOCUS adjustment: FOCUS VR / VGA-480**  
Adjust FOCUS VR on the FBT to attain a balanced focus for all zone on the screen.
- **White balance adjustment:**
  - a. Pre adj. & brightness settings (Before adjusting, CRT must be degaussed.)
    - (1) Please set the VR601, 602, 603, 611, 612, 613 on mechanical center, and the Brightness VR to the Brightness VR to click point, the Contrast VR to Max..
    - (2) Operating on VGA-480 mosaic pattern and adjust the SCREEN VR to set the raster luminance between 1~2FL, then adjust VR611, 612, 613 (BIAS VR) to make the raster's C.I.E. coordinates value as  $x=0.281 \pm 0.01$ ,  $y=0.311 \pm 0.01$  by CRT color analyzer.
    - (3) Change timing to VGA-480 bar pattern, correct SCREEN VR which on the FBT to make raster brightness disappear and the "1" row of color bar pattern (as below figure) visible obscurely.

|            |    |                |               |                  |       |                 |                 |       |                       |
|------------|----|----------------|---------------|------------------|-------|-----------------|-----------------|-------|-----------------------|
| Brightness |    | R+B            |               |                  | B+G   |                 | R+G             |       |                       |
|            |    | BRIGHT<br>BLUE | BRIGHT<br>RED | BRIGHT<br>PRUPLE | GREEN | BLUE +<br>GREEN | RED +<br>YELLOW | WHITE |                       |
|            | 15 |                |               |                  |       |                 |                 |       | 7                     |
|            | 14 |                |               |                  |       |                 |                 |       | 6                     |
|            | 13 |                |               |                  |       |                 |                 |       | 5                     |
| reduce     | 12 |                |               |                  |       |                 |                 |       | 4                     |
|            | 11 |                |               |                  |       |                 |                 |       | 3                     |
|            | 10 |                |               |                  |       |                 |                 |       | 2 → visible           |
|            | 9  |                |               |                  |       |                 |                 |       | 1 → visible obscurely |
|            | 8  |                |               |                  |       |                 |                 |       | 0                     |

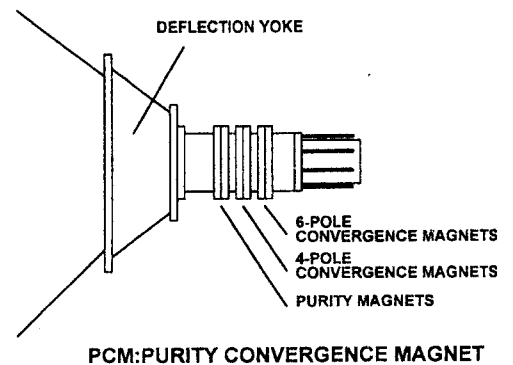
b. White balance fine regulation:

- (1) Receive VGA-480 timing, full white square pattern.
- (2) Adjust BRIT. VR to CLICK, CONT. VR. To max..
- (3) Adjust VR611, 612, 613 to make  $x=0.281 \pm 0.01$ ,  $y=0.311 \pm 0.01$  by CRT color Analyzer.
- (4) Change the BRIT VR to the click point and the CONT. VR between 1~2FL then adjust VR601, 602, 603 (BIAS VR) to get  $X=0.281 \pm 0.005$ ,  $Y=0.311 \pm 0.005$ , were measured by CRT color Analyzer.
- (5) If the white balance is not met, repeat step (2)~(4).

- (4) Horizontal red and blue lines are converged by moving the two tabs at the same time. Keeping the angle between them constant.
- (5) produce a white cross-hatch pattern on the display.
- (6) Vertical green and magenta lines are converged by varying the angle between the two tabs of the 6-pole magnets.
- (7) horizontal green and magenta lines are converged by moving the two tabs at the same time. Keeping the angle between them constant.

• ADJUSTMENT FOR CONVERGENCE

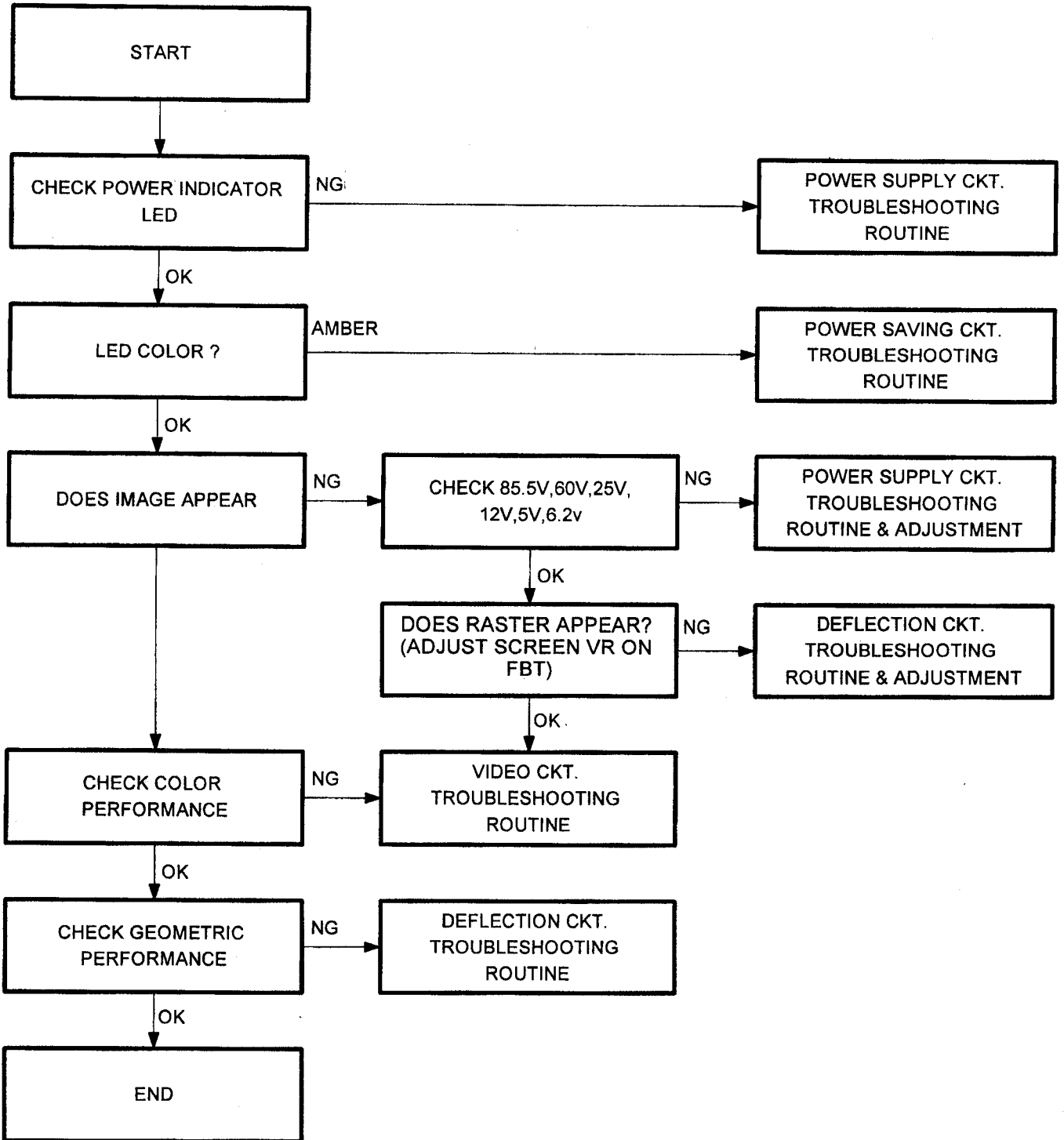
- (1) Produce a magenta cross-hatch on the display.
- (2) Adjust the focus for the best overall focus on the screen also adjust the brightness to the desired condition.
- (3) Vertical red and blue lines are converged by varying the angle between the two tabs of the 4 pole magnets on the PCM assembly. (See diagram below).



Note: Please don't adjust the purity magnet when service occurs.

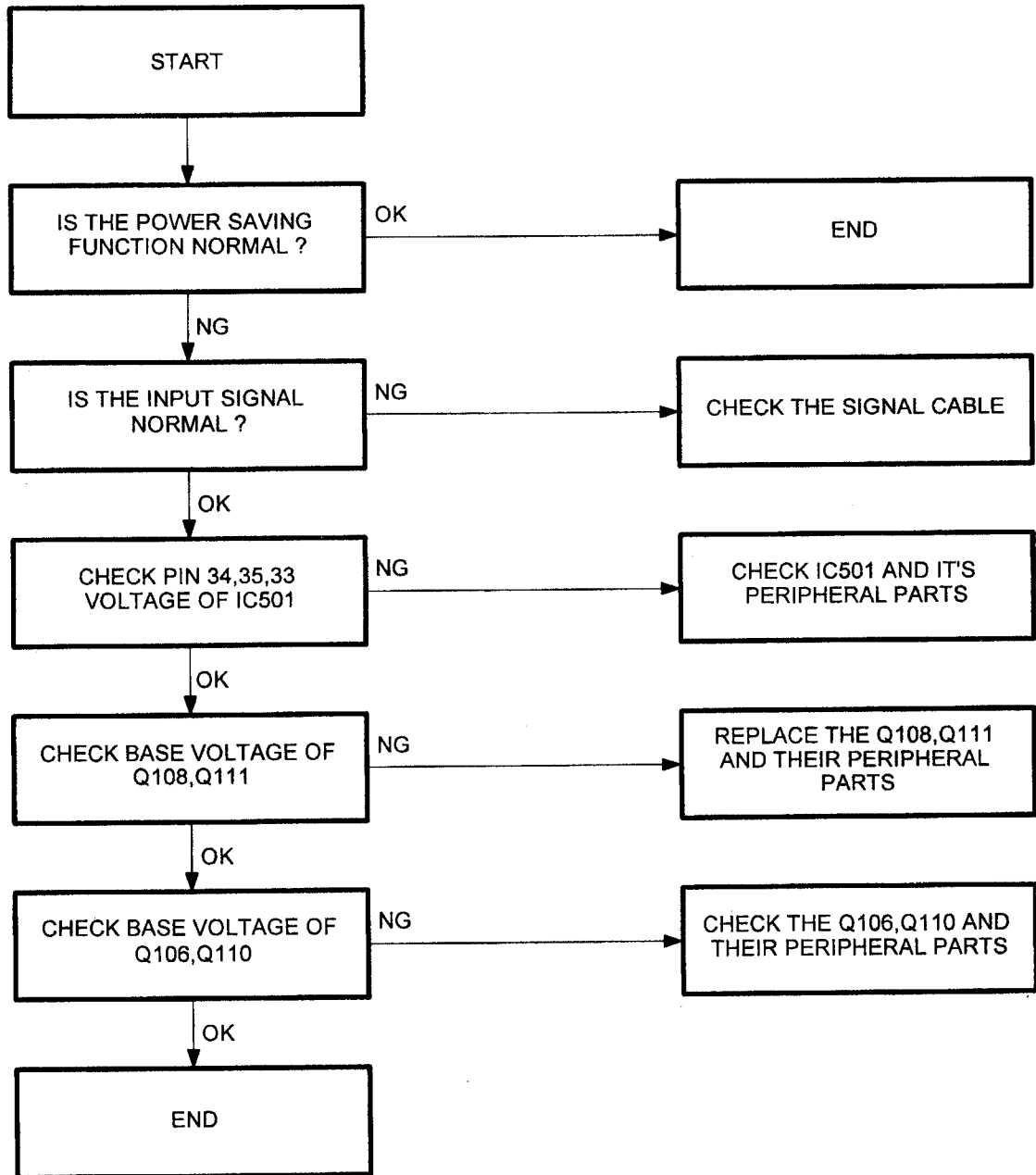
## 6.0 TROUBLESHOOTING

### 6.1 MAIN TROUBLESHOOTING ROUTINE

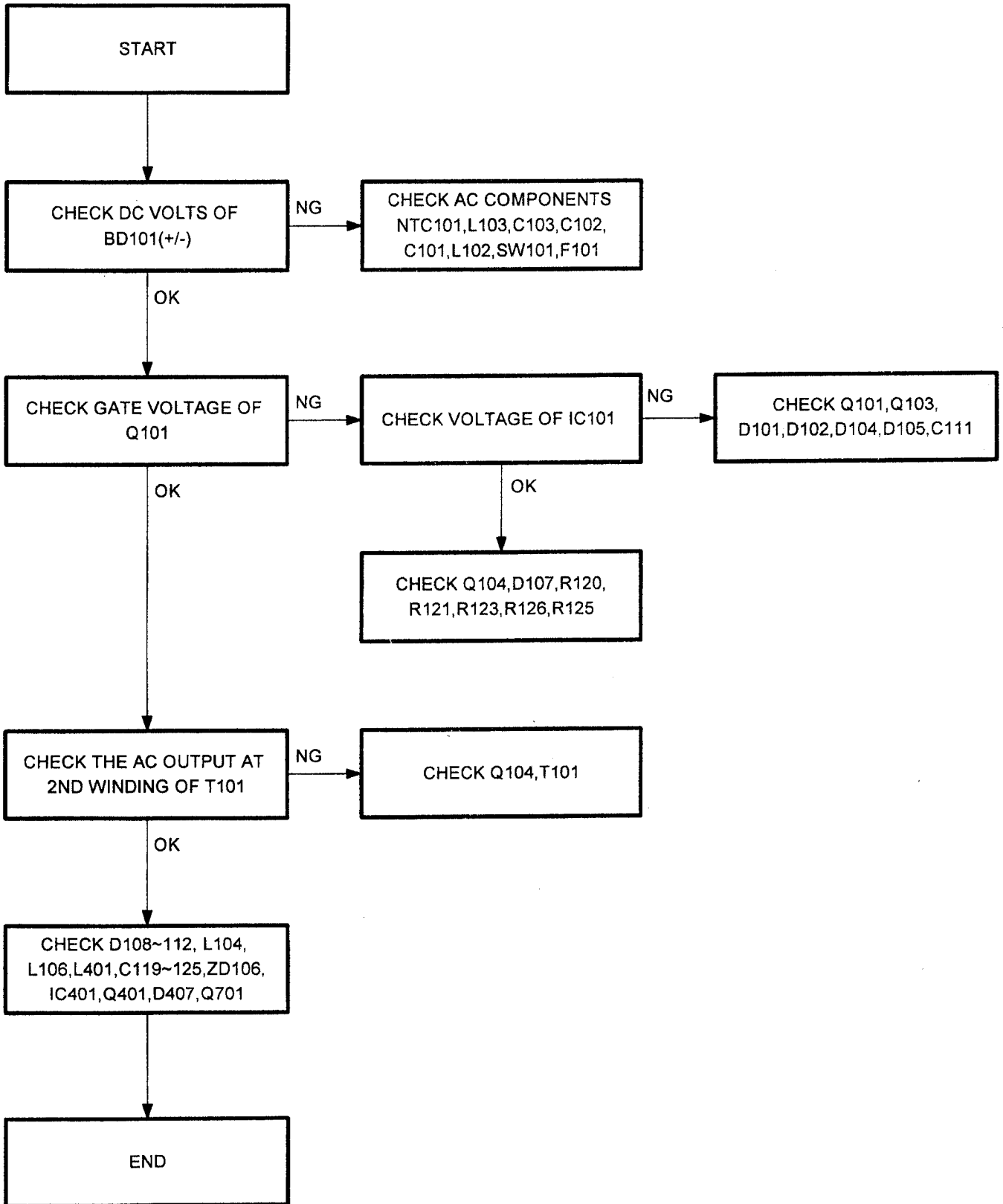




## 6.2 POWER SAVING CIRCUIT TROUBLESHOOTING ROUTINE



6.3 POWER SUPPLY CIRCUIT TROUBLESHOOTING ROUTINE



## VOLTAGE MEASURED RECORD

TEST CONDITIONS: TIMING : VGA-480  
PATTERN: CROSS HATCH

Unit: Volt

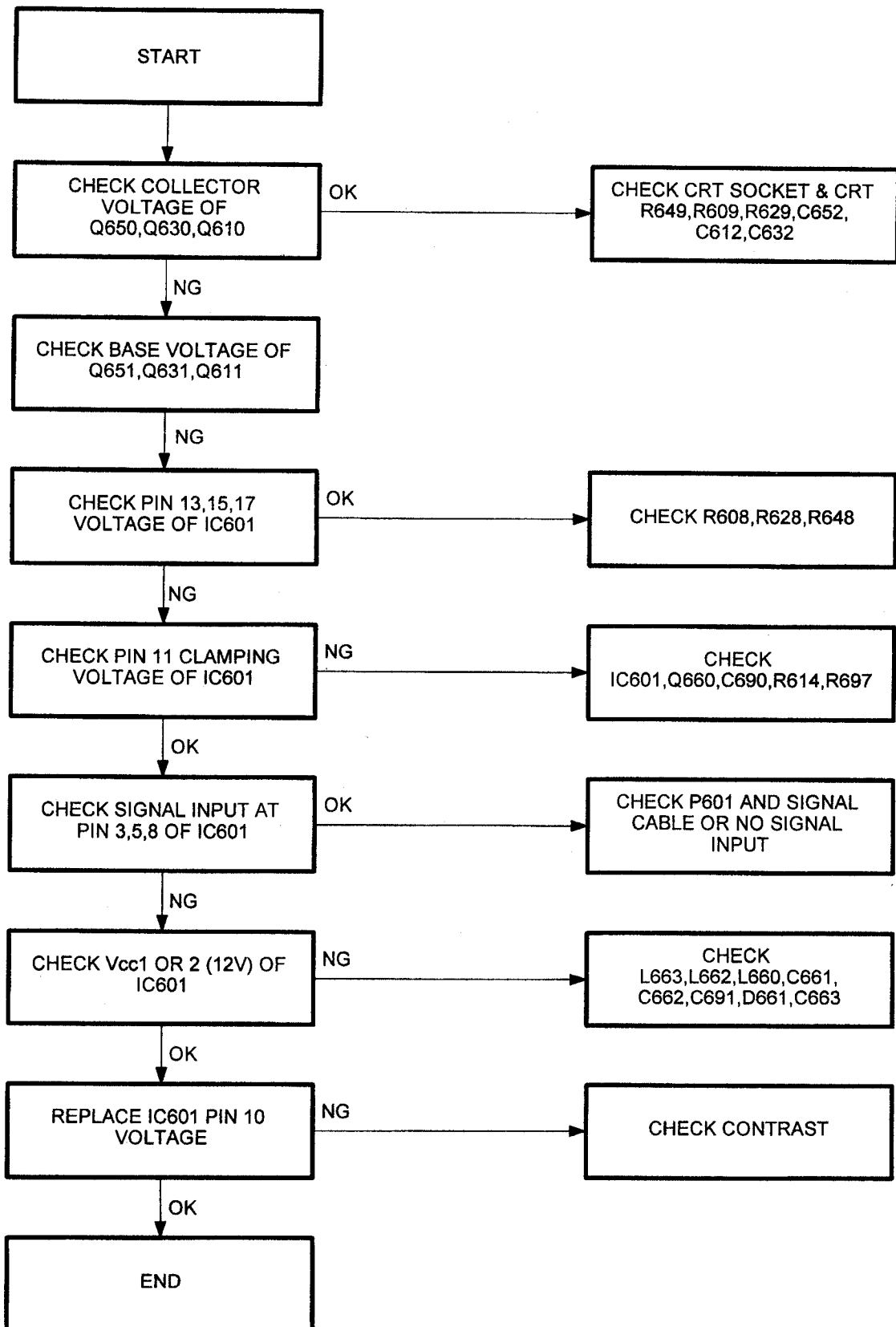
| TR      | Q102 (2SC945) |       |      | Q106 (2SB772) |       |       | Q107 (2SD882) |       |       |
|---------|---------------|-------|------|---------------|-------|-------|---------------|-------|-------|
| STATUS  | E             | C     | B    | E             | C     | B     | E             | C     | B     |
| NORMAL  | GND           | 12.00 | 0.00 | 24.82         | 24.76 | 24.09 | 12.05         | 14.71 | 12.67 |
| SUSPEND | GND           | 1.97  | 0.00 | 29.19         | 2.68  | 29.28 | 1.96          | 13.38 | 2.54  |
| OFF     | GND           | 1.97  | 0.00 | 27.16         | 2.68  | 27.28 | 1.96          | 14.92 | 2.54  |

| TR      | Q108 (2SC945) |       |      | Q109 (2SC945) |       |      | Q110 (2SB772) |      |      | Q111 (2SC945) |       |      |
|---------|---------------|-------|------|---------------|-------|------|---------------|------|------|---------------|-------|------|
| STATUS  | E             | C     | B    | E             | C     | B    | E             | C    | B    | E             | C     | B    |
| NORMAL  | GND           | 0.00  | 0.66 | 6.25          | 12.67 | 6.88 | 6.55          | 6.36 | 5.81 | GND           | 0.07  | 0.65 |
| SUSPEND | GND           | 24.72 | 0.03 | 1.95          | 2.54  | 1.12 | 7.85          | 0.39 | 7.81 | GND           | 0.07  | 0.65 |
| OFF     | GND           | 24.82 | 0.04 | 1.92          | 2.54  | 1.13 | 7.82          | 0.00 | 7.78 | GND           | 11.62 | 0.04 |

| TR    | Q101 (BT169D) |      |       | Q103 (2SC945) |      |      | Q104 (2SK1507) |        |      |
|-------|---------------|------|-------|---------------|------|------|----------------|--------|------|
| AC IN | K             | G    | A     | E             | C    | B    | G              | D      | S    |
| 110V  | 2.02          | 0.01 | 137.8 | GND           | 0.01 | 0.69 | 3.45           | 137.56 | 0.11 |
| 220V  | 2.02          | 0.01 | 293   | GND           | 0.01 | 0.70 | 1.35           | 304.60 | 0.05 |

| IC    | IC101 (3842) |      |      |      |     |      |       |      |
|-------|--------------|------|------|------|-----|------|-------|------|
| AC IN | 1            | 2    | 3    | 4    | 5   | 6    | 7     | 8    |
| 110V  | 3.24         | 2.49 | 0.21 | 0.93 | GND | 3.98 | 16.20 | 5.02 |
| 220V  | 3.32         | 2.49 | 0.30 | 0.94 | GND | 1.83 | 16.17 | 5.02 |

## 6.4 VIDEO CIRCUIT TROUBLESHOOTING ROUTINE



The following voltage records was measured with full white square pattern.

Transistor & Integration circuit

Unit: Volt

| TR      | Q610 (PH2369) |      |      | Q611 (2SC3788) |       |      | Q630 (PH2369) |      |      |
|---------|---------------|------|------|----------------|-------|------|---------------|------|------|
| PIN     | B             | C    | E    | B              | C     | E    | B             | C    | E    |
| VGA-480 | 4.01          | 9.42 | 3.84 | 10.04          | 57.05 | 9.42 | 4.02          | 9.41 | 3.84 |

| TR      | Q631 (2SC3788) |       |      | Q650 (PH2369) |      |      | Q651 (2SC3788) |       |      | Q660 (2SC945) |       |     |
|---------|----------------|-------|------|---------------|------|------|----------------|-------|------|---------------|-------|-----|
| PIN     | B              | C     | E    | B             | C    | E    | B              | C     | E    | B             | C     | E   |
| VGA-480 | 10.04          | 57.01 | 9.41 | 3.81          | 9.42 | 3.62 | 10.04          | 59.30 | 9.42 | -0.06         | 10.69 | GND |

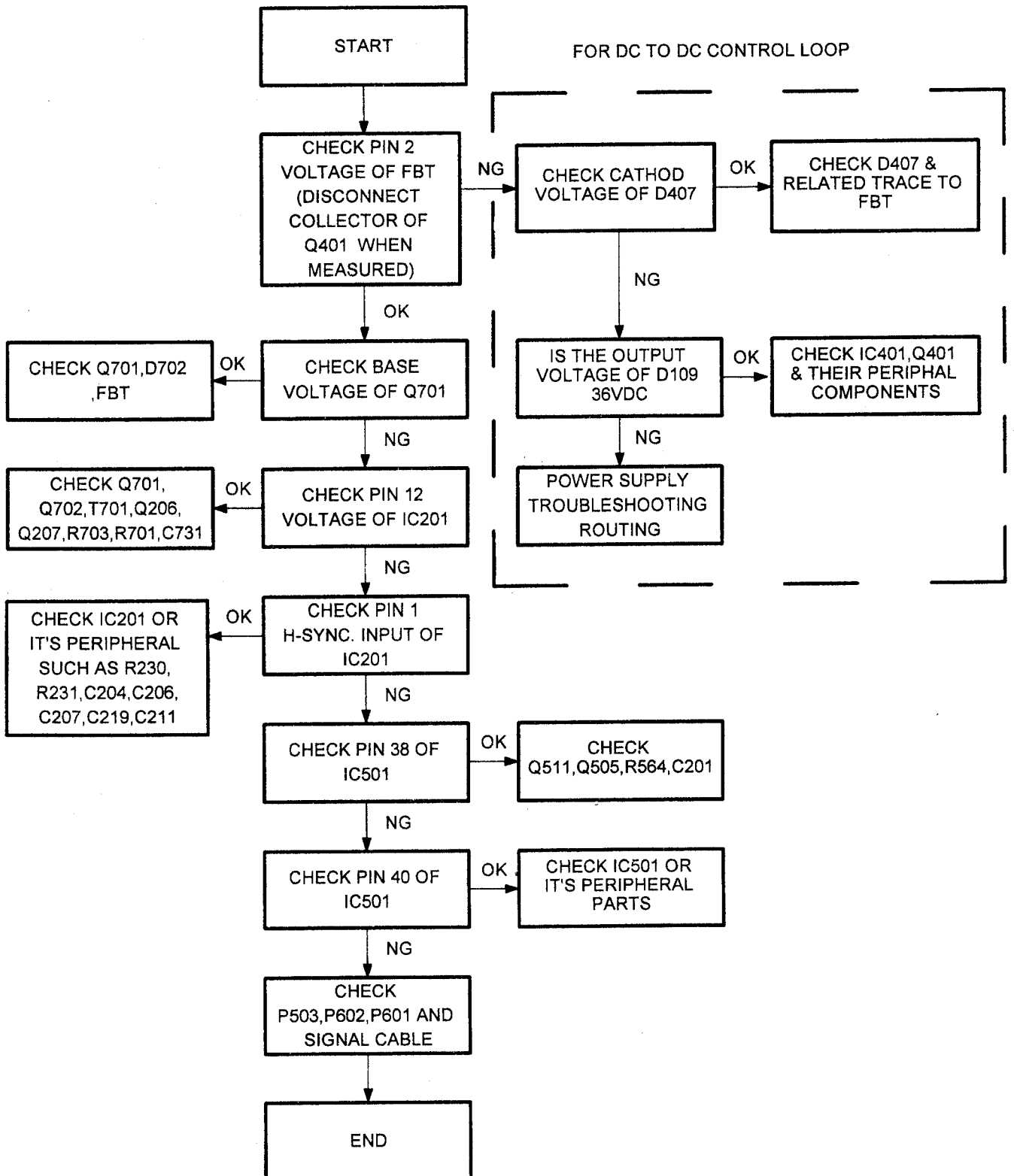
| IC      | U601 (TLS1233) |       |      |      |      |     |      |      |      |      |
|---------|----------------|-------|------|------|------|-----|------|------|------|------|
| PIN     | 1              | 2     | 3    | 4    | 5    | 6   | 7    | 8    | 9    | 10   |
| VGA-480 | 2.37           | 11.44 | 2.08 | 3.20 | 2.08 | GND | 3.19 | 2.08 | 3.18 | 2.35 |

| IC      | U601 (TLS1233) |      |      |      |      |       |      |      |      |      |
|---------|----------------|------|------|------|------|-------|------|------|------|------|
| PIN     | 11             | 12   | 13   | 14   | 15   | 16    | 17   | 18   | 19   | 20   |
| VGA-480 | 10.69          | 1.76 | 4.05 | 1.68 | 4.03 | 12.32 | 1.13 | 3.83 | 2.37 | 2.37 |

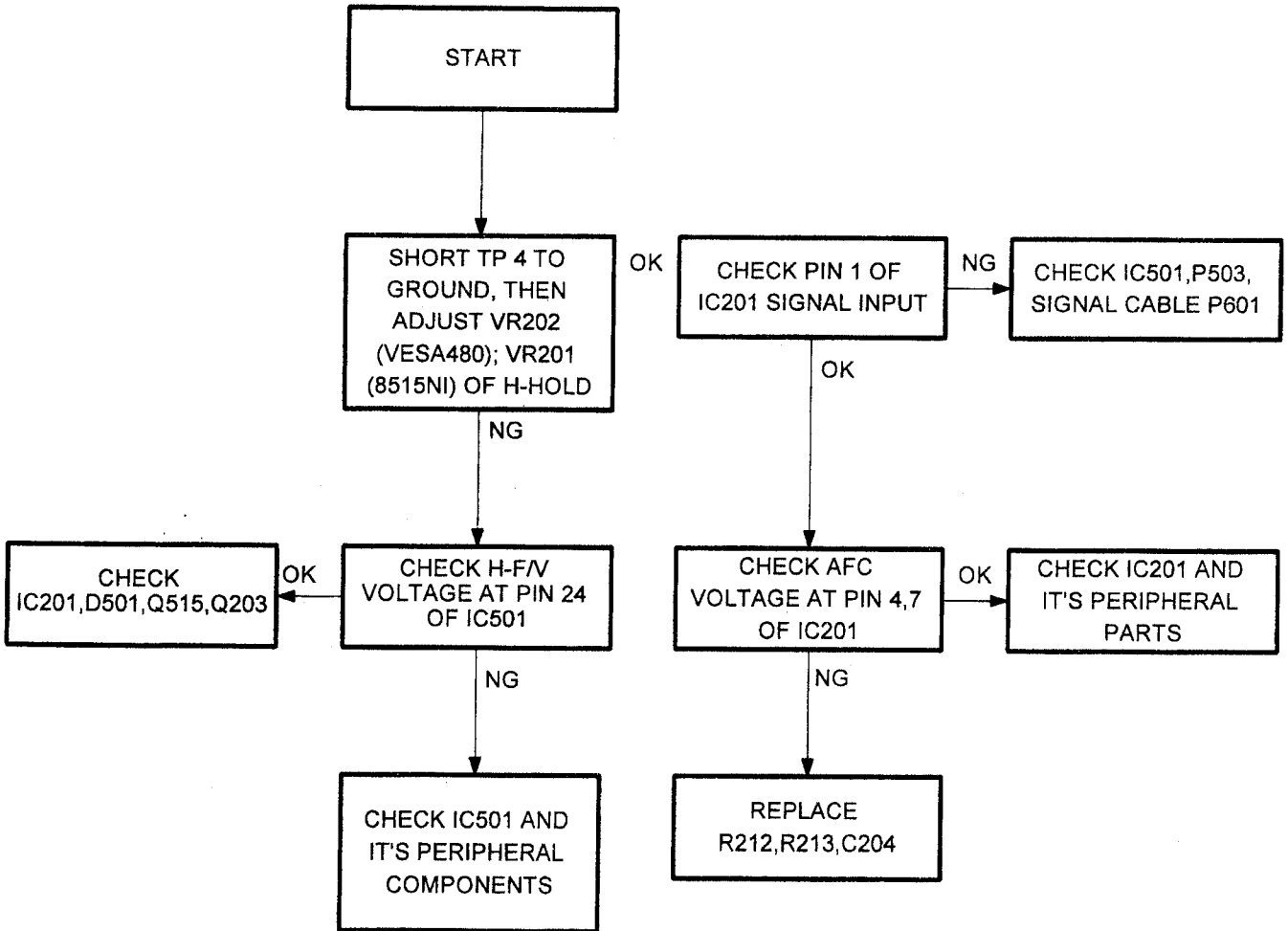
## 6.6 DEFLECTION CIRCUIT TROUBLESHOOTING ROUTINE

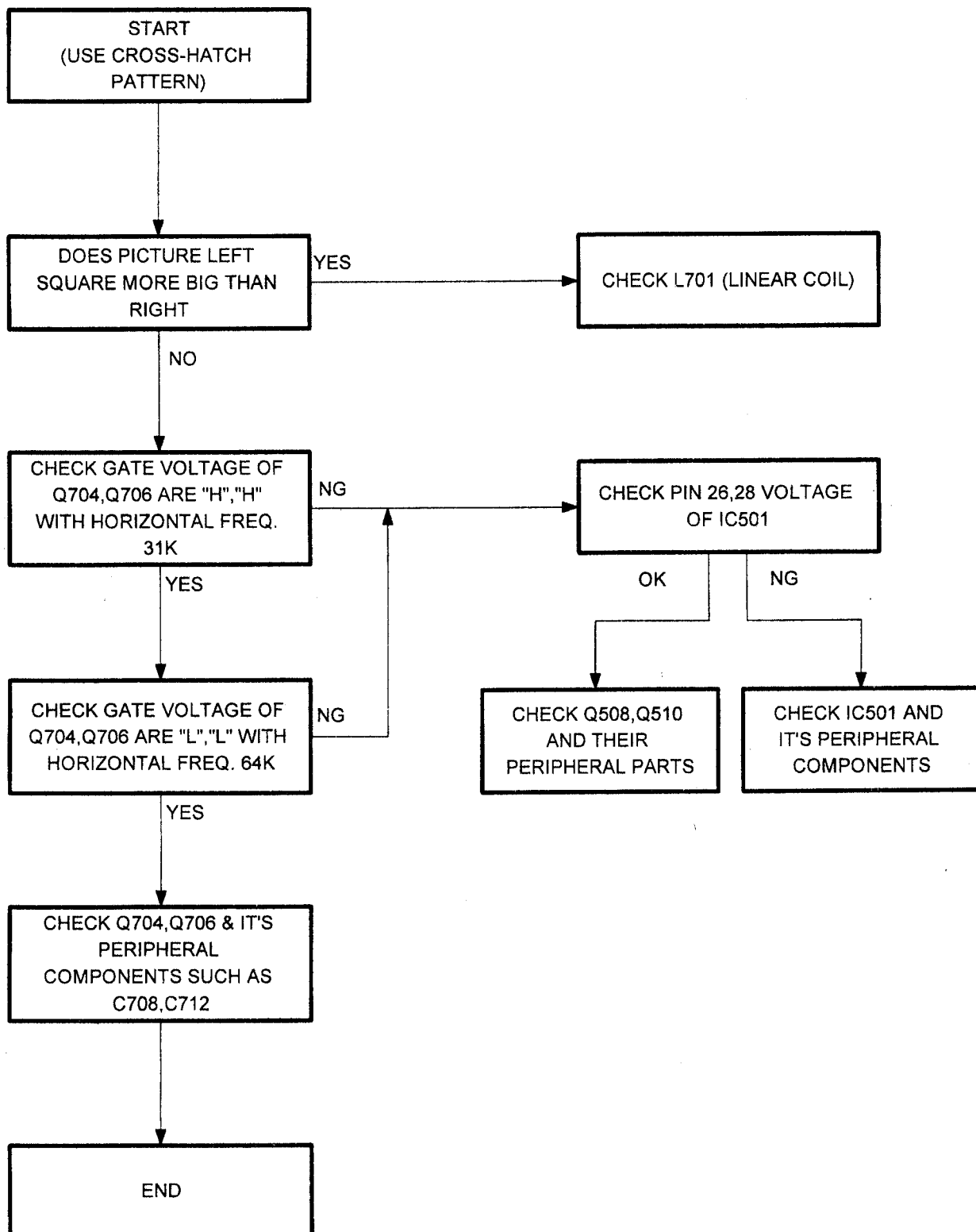
### 6.6.1 Horizontal Deflection Circuit

#### No Raster



H-Asynchronous

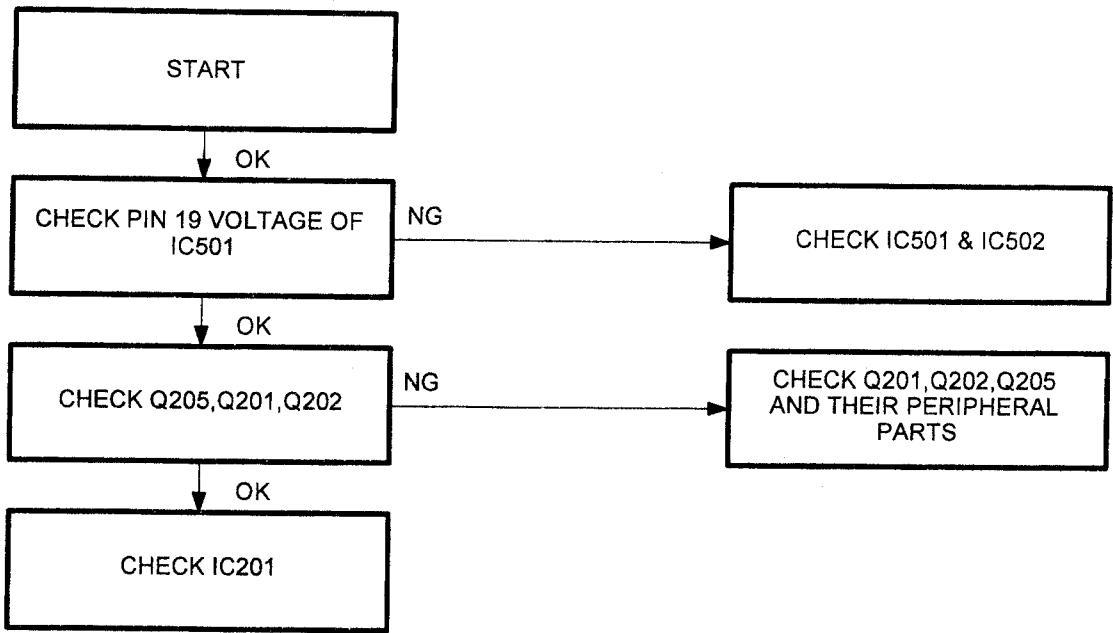


Linearity

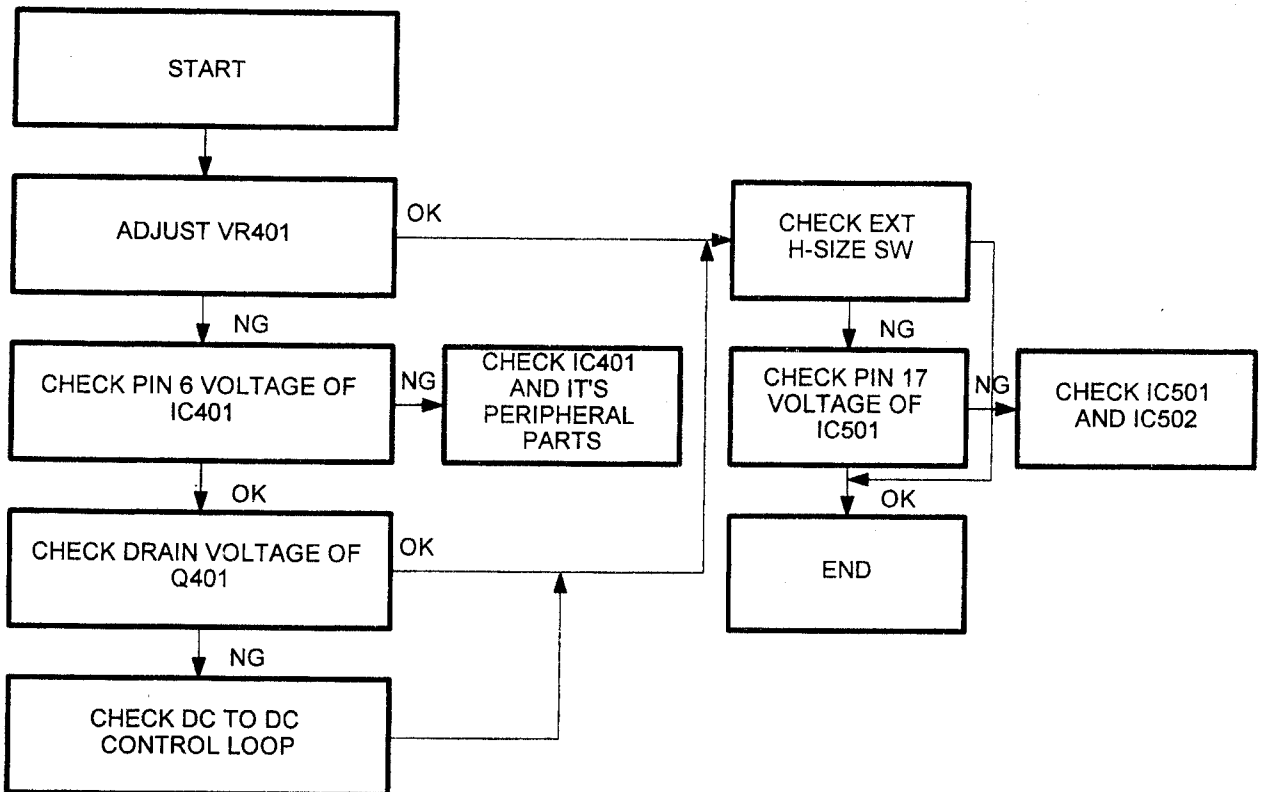
REMARK: \* "L" means the voltage between gate and source is  $< 0.7V$  which can't turn on the MOSFET.  
 \*\* "H" means the voltage between gate and source is  $\geq 0.7V$  which can turn on the MOSFET.



Out of phase

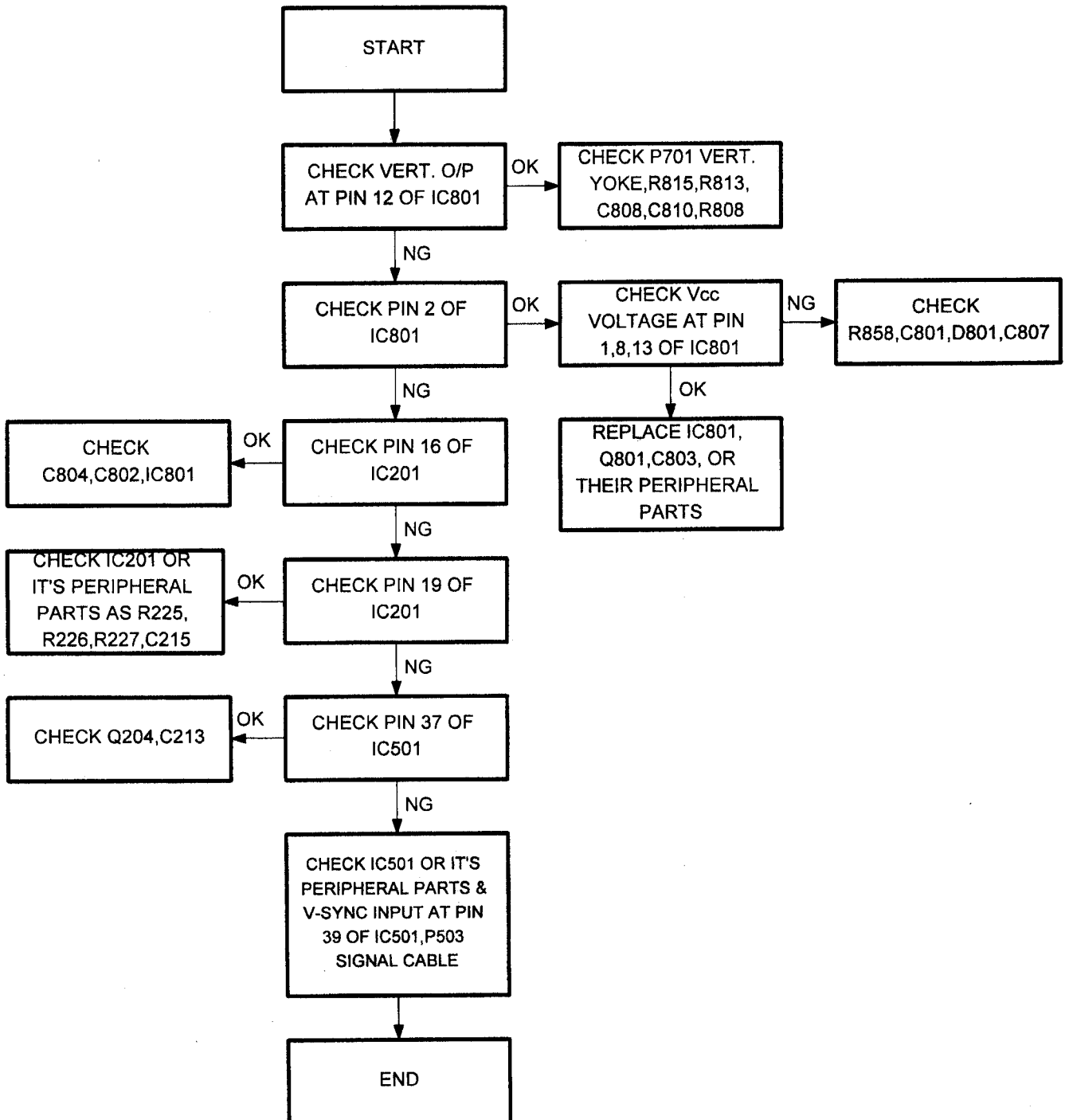


Width Abnormal

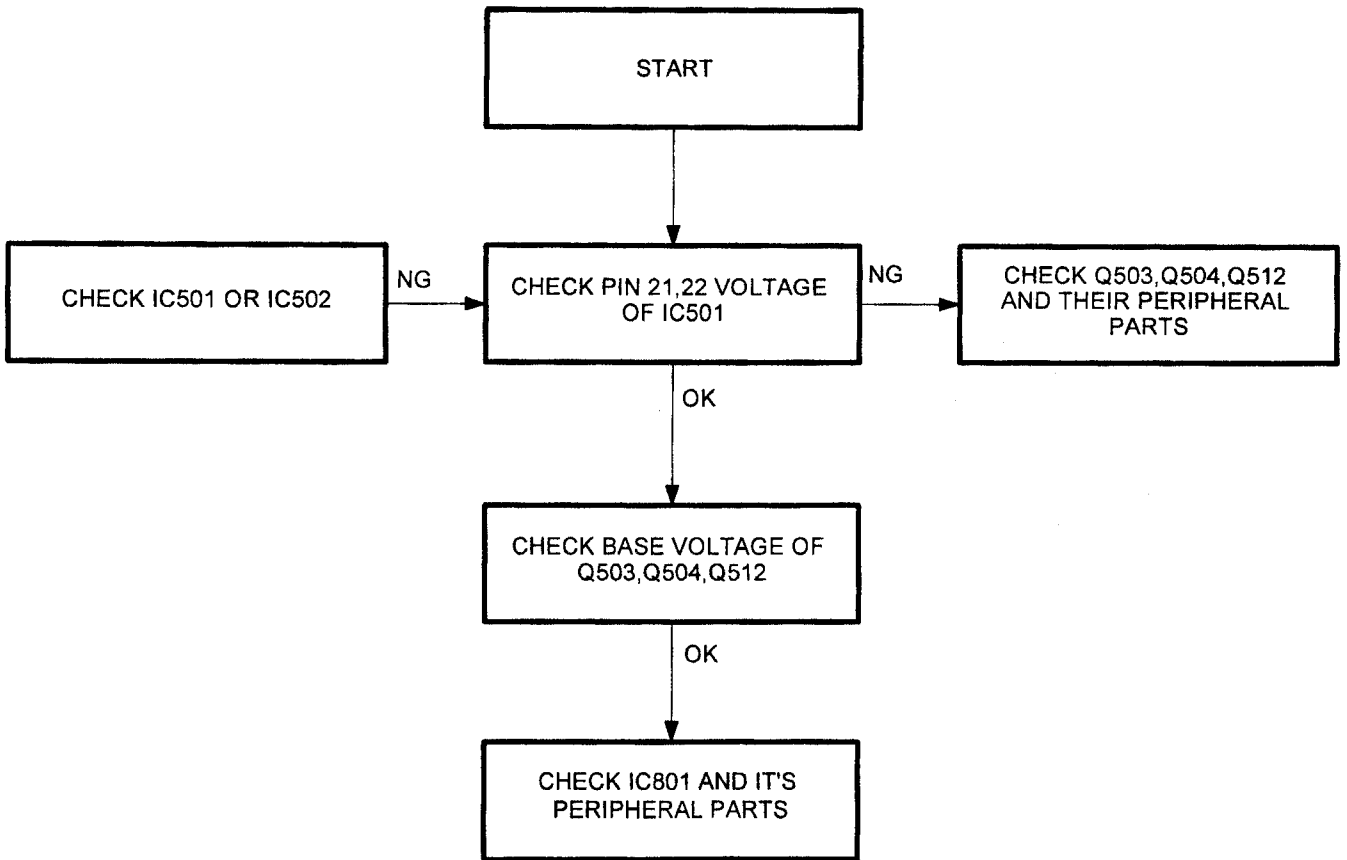


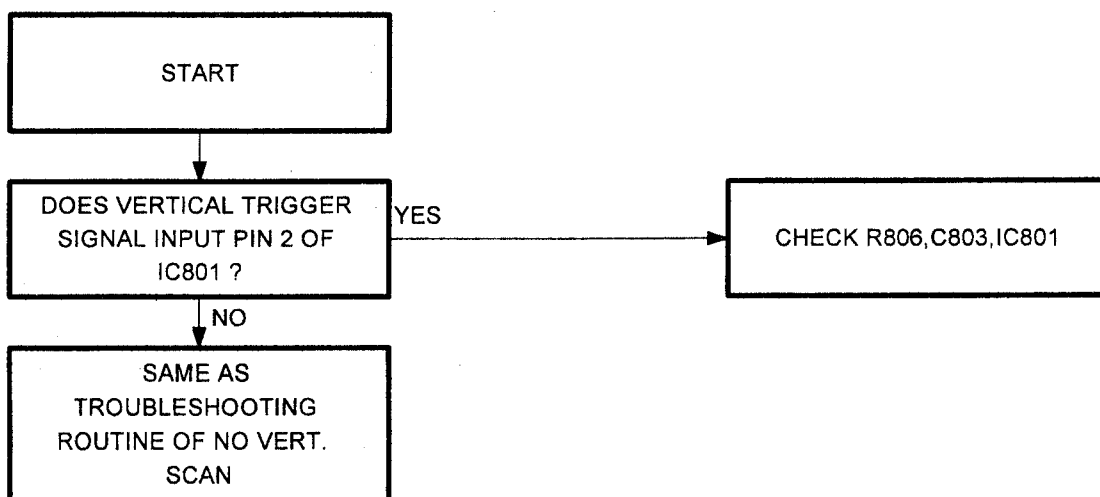
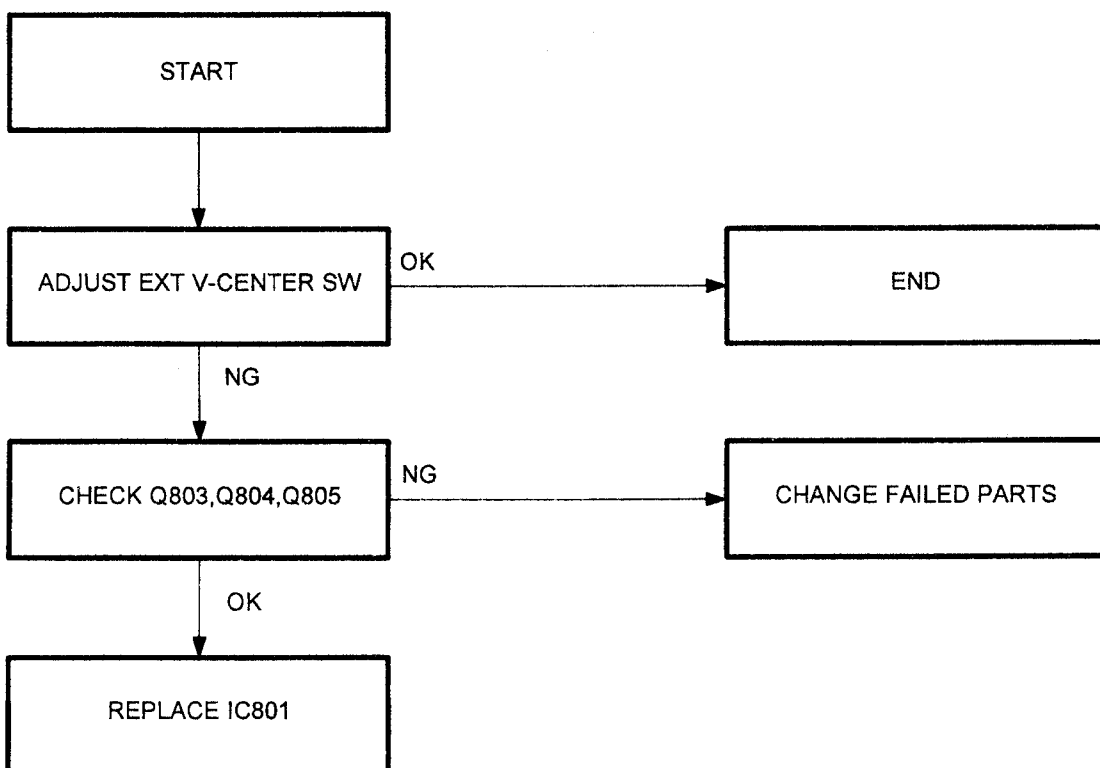
6.6.2 Vertical Deflection Circuit

No vertical scan

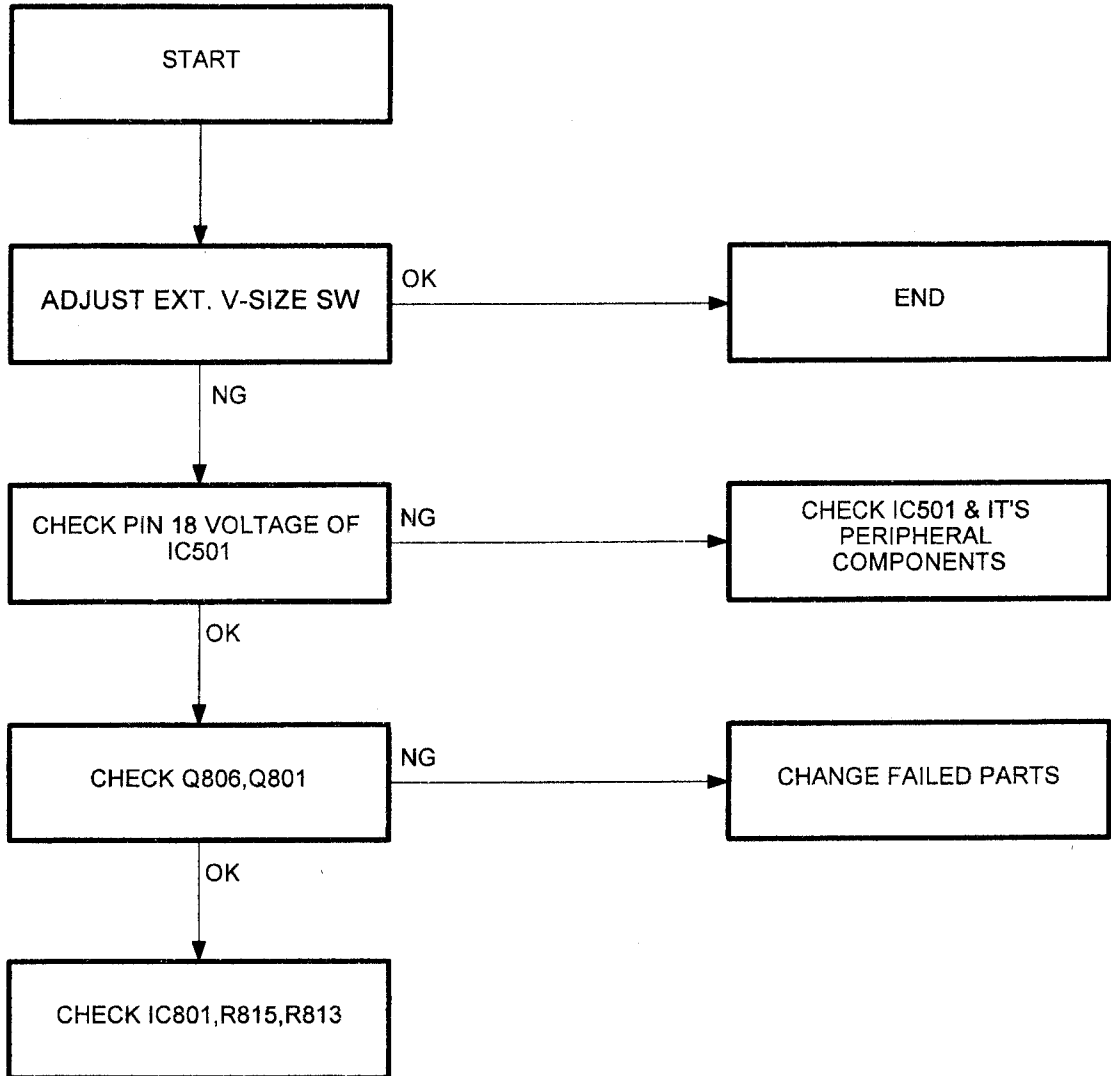


Side pin distortion



V-AsynchronousVertical position

Vertical Size



The following voltage records were measured with **full white square pattern**.

Transistor & Integration circuit

Unit:: volt

| TR      | Q601 (C3953) |       |       | Q602 (C3953) |       |       | Q603 (C3953) |       |       |
|---------|--------------|-------|-------|--------------|-------|-------|--------------|-------|-------|
| PIN     | B            | C     | E     | B            | C     | E     | B            | C     | E     |
| VGA-480 | 11.89        | 56.99 | 11.30 | 11.89        | 54.36 | 11.30 | 11.89        | 54.17 | 11.29 |

| TR      | Q604 (PH2369) |       |      | Q605 (PH2369) |       |      | Q606 (PH2369) |       |      |
|---------|---------------|-------|------|---------------|-------|------|---------------|-------|------|
| PIN     | B             | C     | E    | B             | C     | E    | B             | C     | E    |
| VGA-480 | 2.70          | 11.30 | 2.34 | 2.83          | 11.30 | 2.59 | 2.82          | 11.29 | 2.58 |

| IC      | IC601 (M51387) |       |      |      |      |       |      |      |      |       |
|---------|----------------|-------|------|------|------|-------|------|------|------|-------|
| PIN     | 1              | 2     | 3    | 4    | 5    | 6     | 7    | 8    | 9    | 10    |
| VGA-480 | NC             | 11.90 | 2.72 | 4.79 | 3.11 | 11.90 | 2.72 | 5.91 | 3.11 | 11.90 |

| IC      | IC601 (M51387) |      |      |      |      |      |     |     |      |      |
|---------|----------------|------|------|------|------|------|-----|-----|------|------|
| PIN     | 11             | 12   | 13   | 14   | 15   | 16   | 17  | 18  | 19   | 20   |
| VGA-480 | 2.72           | 5.06 | 3.11 | 6.99 | 0.40 | 3.25 | GND | GND | 4.41 | 4.37 |

| IC      | IC601 (M51387) |     |      |      |      |     |      |      |      |       |
|---------|----------------|-----|------|------|------|-----|------|------|------|-------|
| PIN     | 21             | 22  | 23   | 24   | 25   | 26  | 27   | 28   | 29   | 30    |
| VGA-480 | 2.85           | GND | 4.41 | 4.39 | 2.85 | GND | 4.29 | 4.36 | 2.73 | 11.90 |

| IC      | IC201 (LA7851) |      |      |       |      |      |      |      |      |       |
|---------|----------------|------|------|-------|------|------|------|------|------|-------|
| PIN     | 1              | 2    | 3    | 4     | 5    | 6    | 7    | 8    | 9    | 10    |
| 8514NI  | 7.46           | 7.47 | 7.46 | -0.06 | 3.77 | 3.11 | 5.63 | 5.77 | 5.52 | 11.54 |
| SVGA II | 7.47           | 7.48 | 7.50 | -0.08 | 4.01 | 3.36 | 5.66 | 5.81 | 5.61 | 11.57 |
| VGA-480 | 7.48           | 7.55 | 7.52 | -0.10 | 4.24 | 3.60 | 5.75 | 5.85 | 5.68 | 11.57 |

| IC      | IC201 (LA7851) |      |      |     |    |      |      |      |      |       |
|---------|----------------|------|------|-----|----|------|------|------|------|-------|
| PIN     | 11             | 12   | 13   | 14  | 15 | 16   | 17   | 18   | 19   | 20    |
| MODE    |                |      |      |     |    |      |      |      |      |       |
| 8514NI  | 6.12           | 4.40 | 0.01 | GND | NC | 6.16 | 0.22 | 2.56 | 5.43 | 11.54 |
| SVGA II | 6.18           | 4.45 | 0.01 | GND | NC | 6.18 | 0.23 | 2.55 | 5.48 | 11.57 |
| VGA-480 | 6.21           | 4.45 | 0.01 | GND | NC | 6.18 | 0.22 | 2.65 | 5.60 | 11.57 |

| IC      | IC401 (3843) |      |      |      |     |      |       |      |
|---------|--------------|------|------|------|-----|------|-------|------|
| PIN     | 1            | 2    | 3    | 4    | 5   | 6    | 7     | 8    |
| MODE    |              |      |      |      |     |      |       |      |
| 8514NI  | 2.47         | 2.48 | 0.10 | 1.42 | GND | 4.18 | 12.07 | 4.96 |
| SVGA II | 2.37         | 2.47 | 0.06 | 1.60 | GND | 2.94 | 12.07 | 4.96 |
| VGA-480 | 2.08         | 2.47 | 0.03 | 1.74 | GND | 1.86 | 12.07 | 4.96 |

| IC      | IC501 (UM6860B) |      |      |      |      |      |      |      |      |      |
|---------|-----------------|------|------|------|------|------|------|------|------|------|
| PIN     | 1               | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| MODE    |                 |      |      |      |      |      |      |      |      |      |
| 8514NI  | 4.92            | 4.92 | 4.92 | 4.92 | 4.92 | 4.92 | 4.90 | 4.90 | 4.92 | 4.92 |
| SVGA II | 4.92            | 4.92 | 4.92 | 4.92 | 4.92 | 4.92 | 4.90 | 4.90 | 4.92 | 4.92 |
| VGA-480 | 4.92            | 4.92 | 4.92 | 4.92 | 4.92 | 4.92 | 4.90 | 4.90 | 4.92 | 4.92 |

| IC      | IC501 (UM6860B) |      |      |     |     |     |      |      |      |      |
|---------|-----------------|------|------|-----|-----|-----|------|------|------|------|
| PIN     | 11              | 12   | 13   | 14  | 15  | 16  | 17   | 18   | 19   | 20   |
| MODE    |                 |      |      |     |     |     |      |      |      |      |
| 8514NI  | 4.92            | 4.93 | 4.90 | OSC | OSC | GND | 3.07 | 0.70 | 3.67 | 1.54 |
| SVGA II | 4.92            | 4.93 | 4.90 | OSC | OSC | GND | 2.26 | 0.74 | 1.33 | 1.57 |
| VGA-480 | 4.92            | 4.93 | 4.90 | OSC | OSC | GND | 3.06 | 0.91 | 2.11 | 1.59 |

| IC      | IC501 (UM6860B) |      |      |      |      |      |      |      |      |      |
|---------|-----------------|------|------|------|------|------|------|------|------|------|
| PIN     | 31              | 32   | 33   | 34   | 35   | 36   | 37   | 38   | 39   | 40   |
| MODE    |                 |      |      |      |      |      |      |      |      |      |
| 8514NI  | 0.15            | 4.92 | 4.93 | 4.40 | 4.40 | 0.14 | 0.16 | 0.58 | 0.28 | 0.39 |
| SVGA II | 0.15            | 4.92 | 4.92 | 4.40 | 4.40 | 0.15 | 0.17 | 0.75 | 4.90 | 4.22 |
| VGA-480 | 0.16            | 4.92 | 4.92 | 4.40 | 4.40 | 0.15 | 0.16 | 0.69 | 0.26 | 0.51 |

| IC          | IC502 (24C02) |   |      |   |      |      |   |      | IC701 (TL431) |     |      |
|-------------|---------------|---|------|---|------|------|---|------|---------------|-----|------|
| PIN<br>MODE | 1             | 2 | 3    | 4 | 5    | 6    | 7 | 8    | K             | A   | R    |
| 8514NI      | 4.93          | 0 | 4.93 | 0 | 4.92 | 4.92 | 0 | 4.93 | 6.09          | GND | 2.48 |
| SVGA II     | 4.93          | 0 | 4.93 | 0 | 4.92 | 4.92 | 0 | 4.93 | 5.27          | GND | 2.48 |
| VGA-480     | 4.93          | 0 | 3.93 | 0 | 4.92 | 4.92 | 0 | 4.93 | 5.48          | GND | 2.48 |

| IC          | IC801 (LA7838) |      |      |      |       |      |      |
|-------------|----------------|------|------|------|-------|------|------|
| PIN<br>MODE | 1              | 2    | 3    | 4    | 5     | 6    | 7    |
| 8514NI      | 11.79          | 6.18 | 5.88 | 6.07 | 11.21 | 5.74 | 5.75 |
| SVGA II     | 11.79          | 6.17 | 5.88 | 6.07 | 11.21 | 5.74 | 5.74 |
| VGA-480     | 11.79          | 6.18 | 5.88 | 6.06 | 11.21 | 5.77 | 5.72 |

| IC          | IC801 (LA7838) |      |      |     |       |       |
|-------------|----------------|------|------|-----|-------|-------|
| PIN<br>MODE | 8              | 9    | 10   | 11  | 12    | 13    |
| 8514NI      | 24.16          | 0.42 | 1.33 | GND | 13.84 | 23.83 |
| SVGA II     | 24.02          | 0.43 | 1.33 | GND | 13.85 | 23.70 |
| VGA-480     | 23.93          | 0.45 | 1.33 | GND | 13.81 | 23.62 |



The following voltage records were measured with **cross-hatch pattern**.

Transistor

Unit: volt

| TR      | Q201 (2SA733) |   |      | Q202 (2SC945) |      |   | Q203 (2SA733) |      |       |
|---------|---------------|---|------|---------------|------|---|---------------|------|-------|
| PIN     | B             | C | E    | B             | C    | E | B             | C    | E     |
| 8514NI  | 3.05          | 0 | 3.66 | 0.02          | 2.34 | 0 | 8.60          | 5.77 | 9.20  |
| SVGA II | 1.69          | 0 | 2.31 | 0.67          | 0.01 | 0 | 9.15          | 5.82 | 9.74  |
| VGA-480 | 2.13          | 0 | 2.76 | 0.68          | 0.01 | 0 | 9.48          | 5.85 | 10.07 |

| TR      | Q204 (2SC945) |       |      | Q205 (2SC945) |       |      | Q206 (2SC945) |       |      |
|---------|---------------|-------|------|---------------|-------|------|---------------|-------|------|
| PIN     | B             | C     | E    | B             | C     | E    | B             | C     | E    |
| 8514NI  | 0.16          | 12.06 | 0.03 | 3.69          | 11.57 | 3.05 | 3.05          | 11.54 | 2.95 |
| SVGA II | 0.16          | 12.06 | 0.02 | 2.31          | 11.57 | 1.68 | 3.08          | 11.57 | 2.99 |
| VGA-480 | 0.16          | 12.06 | 0.02 | 2.77          | 11.57 | 2.13 | 3.08          | 11.57 | 2.99 |

| TR      | Q207 (2SA733) |   |      | Q209 (2SC945) |      |      | Q401 (2SK890) |       |      |
|---------|---------------|---|------|---------------|------|------|---------------|-------|------|
| PIN     | B             | C | E    | B             | C    | E    | B             | C     | E    |
| 8514NI  | 3.05          | 0 | 2.95 | 3.78          | 8.95 | 3.13 | 4.18          | 58.63 | 0.01 |
| SVGA II | 3.08          | 0 | 2.99 | 3.78          | 8.96 | 3.13 | 2.92          | 59.79 | 0.06 |
| VGA-480 | 3.08          | 0 | 2.99 | 3.78          | 8.96 | 3.13 | 2.01          | 59.98 | 0.03 |

| TR      | Q402 (2SA733) |   |      | Q501 (2SA733) |   |      | Q502 (2SA733) |      |      |
|---------|---------------|---|------|---------------|---|------|---------------|------|------|
| PIN     | B             | C | E    | B             | C | E    | B             | C    | E    |
| 8514NI  | 4.95          | 0 | 2.48 | 7.07          | 0 | 4.93 | 4.23          | 4.90 | 4.93 |
| SVGA II | 4.91          | 0 | 2.38 | 7.07          | 0 | 4.93 | 4.23          | 4.90 | 4.93 |
| VGA-480 | 4.91          | 0 | 2.05 | 7.07          | 0 | 4.93 | 4.23          | 4.90 | 4.93 |

| TR      | Q503 (2SC945) |       |      | Q504 (2SA733) |      |       | Q508 (2SC945) |       |   |
|---------|---------------|-------|------|---------------|------|-------|---------------|-------|---|
| PIN     | B             | C     | E    | B             | C    | E     | B             | C     | E |
| 8514NI  | 2.91          | 10.64 | 2.30 | 10.64         | 2.05 | 11.25 | 0.74          | 0.04  | 0 |
| SVGA II | 2.83          | 10.65 | 2.21 | 10.65         | 2.01 | 11.25 | 0.06          | 11.37 | 0 |
| VGA-480 | 2.81          | 10.60 | 2.20 | 10.60         | 2.04 | 11.21 | 0.06          | 11.38 | 0 |

| TR      | Q510 (2SC945) |      |       | Q511 (2SC945) |      |      | Q512 (2SC945) |       |      |       |
|---------|---------------|------|-------|---------------|------|------|---------------|-------|------|-------|
| MODE    | PIN           | B    | C     | E             | B    | C    | E             | B     | C    | E     |
| 8514NI  |               | 0.74 | 0.04  | 0             | 0.58 | 4.93 | 0.40          | 11.97 | 4.17 | 12.11 |
| SVGA II |               | 0.74 | 0.04  | 0             | 0.74 | 4.93 | 0.54          | 11.95 | 3.70 | 12.06 |
| VGA-480 |               | 0.06 | 12.06 | 0             | 0.69 | 4.93 | 0.49          | 11.98 | 3.79 | 12.09 |

| TR      | Q513 (2SC945) |      |      | Q514 (2SC945) |      |      | Q515 (2SC945) |      |       |      |
|---------|---------------|------|------|---------------|------|------|---------------|------|-------|------|
| MODE    | PIN           | B    | C    | E             | B    | C    | E             | B    | C     | E    |
| 8514NI  |               | 0.72 | 0.03 | 0             | 0.62 | 0.39 | 0             | 0.87 | 12.06 | 1.68 |
| SVGA II |               | 0.01 | 4.89 | 0             | 0.06 | 4.23 | 0             | 4.87 | 12.06 | 5.49 |
| VGA-480 |               | 0.73 | 0.02 | 0             | 0.62 | 0.52 | 0             | 7.15 | 12.07 | 7.83 |

| TR      | Q516 (2SA733) |      |   | Q701 (2SC5250) |       |       | Q702 (2SC2688) |       |       |   |
|---------|---------------|------|---|----------------|-------|-------|----------------|-------|-------|---|
| MODE    | PIN           | B    | C | E              | B     | C     | E              | B     | C     | E |
| 8514NI  |               | 0.87 | 0 | 1.68           | -0.45 | 125.9 | 0              | -0.87 | 83.08 | 0 |
| SVGA II |               | 4.87 | 0 | 5.49           | -0.42 | 98.11 | 0              | -0.85 | 85.86 | 0 |
| VGA-480 |               | 7.15 | 0 | 7.83           | -0.44 | 77.61 | 0              | -0.86 | 85.44 | 0 |

| TR      | Q704 (IRF520) |       |       | Q706 (IRF520) |       |       | Q709 (2SK904) |       |       |   |
|---------|---------------|-------|-------|---------------|-------|-------|---------------|-------|-------|---|
| MODE    | PIN           | B     | C     | E             | B     | C     | E             | B     | C     | E |
| 8514NI  |               | 0.04  | 27.95 | 0             | 0.45  | 27.78 | 0             | 9.82  | 38.70 | 0 |
| SVGA II |               | 0.04  | 26.60 | 0             | 11.26 | 0     | 0             | 10.18 | 25.00 | 0 |
| VGA-480 |               | 11.94 | 0     | 0             | 11.26 | 0     | 0             | 10.52 | 22.10 | 0 |

| TR      | Q711 (2SA733) |       |       | Q712 (2SA733) |       |   | Q713 (2SC945) |       |       |       |
|---------|---------------|-------|-------|---------------|-------|---|---------------|-------|-------|-------|
| MODE    | PIN           | B     | C     | E             | B     | C | E             | B     | C     | E     |
| 8514NI  |               | 12.09 | 9.84  | 12.26         | 9.84  | 0 | 10.12         | 10.12 | 17.49 | 9.82  |
| SVGA II |               | 11.83 | 10.49 | 12.13         | 10.49 | 0 | 10.51         | 10.51 | 17.50 | 10.18 |
| VGA-480 |               | 11.89 | 10.81 | 12.24         | 10.81 | 0 | 10.87         | 10.87 | 17.58 | 10.52 |

| TR      | Q714 (2SA733) |       |   | Q715 (BF423) |      |      | Q716 (2SC945) |      |      |   |
|---------|---------------|-------|---|--------------|------|------|---------------|------|------|---|
| MODE    | PIN           | B     | C | E            | B    | C    | E             | B    | C    | E |
| 8514NI  |               | 10.12 | 0 | 9.82         | 1.99 | 1.99 | 2.57          | 0.75 | 0.07 | 0 |
| SVGA II |               | 10.51 | 0 | 10.18        | 1.93 | 1.93 | 2.51          | 0.75 | 0.07 | 0 |
| VGA-480 |               | 10.87 | 0 | 10.52        | 1.89 | 1.89 | 2.47          | 0.57 | 0.07 | 0 |

| TR      | Q719 (2SC945) |      |      | Q801 (2SC945) |      |      | Q802 (2SA733) |      |   |      |
|---------|---------------|------|------|---------------|------|------|---------------|------|---|------|
| MODE    | PIN           | B    | C    | E             | B    | C    | E             | B    | C | E    |
| 8514NI  |               | 0.11 | 0.75 | 0             | 2.93 | 6.06 | 2.45          | 5.73 | 0 | 5.74 |
| SVGA II |               | 0.11 | 0.75 | 0             | 2.97 | 6.06 | 2.48          | 5.74 | 0 | 5.74 |
| VGA-480 |               | 0.12 | 0.75 | 0             | 3.06 | 6.06 | 2.56          | 5.76 | 0 | 5.76 |

| TR      | Q803 (2SC945) |      |       | Q804 (2SC2001) |       |       | Q805 (2SA952) |       |   | Q806 (2SA733) |      |   |      |
|---------|---------------|------|-------|----------------|-------|-------|---------------|-------|---|---------------|------|---|------|
| MODE    | PIN           | B    | C     | E              | B     | C     | E             | B     | C | E             | B    | C | E    |
| 8514NI  |               | 1.23 | 11.79 | 0.64           | 12.30 | 24.15 | 12.26         | 11.74 | 0 | 12.36         | 2.28 | 0 | 2.93 |
| SVGA II |               | 1.24 | 11.55 | 0.65           | 12.06 | 24.03 | 12.14         | 11.52 | 0 | 12.14         | 2.32 | 0 | 2.97 |
| VGA-480 |               | 1.26 | 11.20 | 0.67           | 11.72 | 23.93 | 11.79         | 11.18 | 0 | 11.79         | 2.40 | 0 | 3.06 |

## VOLTAGE MEASURED RECORD

TEST CONDITIONA: TIMING:VGA-480

PATTERN: CROSS-HATCH

Transistor &amp; Integration circuit

Unit: volt

| TR   | Q101 (BT169D) |   |       | Q103 (2SC945) |   |   | Q104 (2SK1507) |       |      |
|------|---------------|---|-------|---------------|---|---|----------------|-------|------|
| PIN  | K             | G | A     | B             | C | E | G              | D     | S    |
| MODE |               |   |       |               |   |   |                |       |      |
| 110V | 0.09          | 0 | 141.8 | 0.72          | 0 | 0 | 2.74           | 146.8 | 0.06 |
| 220V | 0.52          | 0 | 302.0 | 0.72          | 0 | 0 | 1.09           | 310.0 | 0.03 |

| IC   | IC101 (3842) |      |      |      |     |      |       |      |
|------|--------------|------|------|------|-----|------|-------|------|
| PIN  | 1            | 2    | 3    | 4    | 5   | 6    | 7     | 8    |
| MODE |              |      |      |      |     |      |       |      |
| 110V | 3.03         | 2.48 | 0.19 | 0.46 | GND | 3.16 | 15.96 | 4.99 |
| 220V | 3.17         | 2.48 | 0.30 | 0.48 | GND | 1.47 | 15.94 | 4.99 |

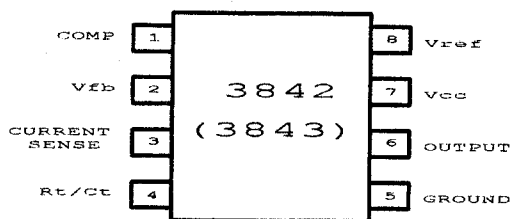
| TR      | Q102 (2SC945) |       |     | Q106 (2SB772) |       |       | Q107 (2SD882) |       |       |
|---------|---------------|-------|-----|---------------|-------|-------|---------------|-------|-------|
| PIN     | B             | C     | E   | B             | C     | E     | B             | C     | E     |
| MODE    |               |       |     |               |       |       |               |       |       |
| NORMAL  | 0.01          | 12.06 | GND | 23.29         | 23.94 | 24.01 | 12.74         | 14.32 | 12.07 |
| SUSPEND | 0             | 1.80  | GND | 25.97         | 2.69  | 26.09 | 2.41          | 13.44 | 1.81  |
| OFF     | 0             | 1.80  | GND | 25.47         | 2.68  | 25.59 | 2.47          | 14.65 | 1.80  |

| TR      | Q108 (2SC945) |       |     | Q109 (2SC945) |       |      | Q110 (2SB772) |      |      | Q111 (2SC945) |      |     |
|---------|---------------|-------|-----|---------------|-------|------|---------------|------|------|---------------|------|-----|
| PIN     | B             | C     | E   | B             | C     | E    | B             | C    | E    | B             | C    | E   |
| MODE    |               |       |     |               |       |      |               |      |      |               |      |     |
| NORMAL  | 0.69          | 0.07  | GND | 6.87          | 12.74 | 6.25 | 5.71          | 6.26 | 6.46 | 0.69          | 0.09 | GND |
| SUSPEND | 0.10          | 25.96 | GND | 1.03          | 2.42  | 1.81 | 4.42          | 4.96 | 5.16 | 0.69          | 0.07 | GND |
| OFF     | 0.10          | 25.46 | GND | 1.03          | 2.41  | 1.81 | 7.89          | 0    | 7.92 | 0.05          | 7.89 | GND |

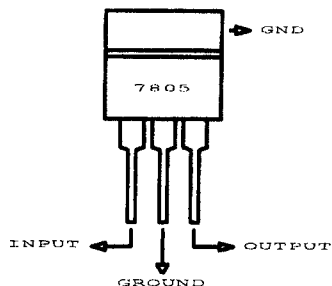
| TR/PLUG/IC | Q501 (2SA733) |      |      | P504 |     |      | IC501 |      |
|------------|---------------|------|------|------|-----|------|-------|------|
| PIN        | B             | C    | E    | 1    | 2   | 3    | 34    | 35   |
| MODE       |               |      |      |      |     |      | PS0   | PS1  |
| NORMAL     | 7.06          | 0.63 | 4.93 | 2.04 | GND | 0.63 | 4.41  | 4.41 |
| SUSPEND    | 4.21          | 4.84 | 4.93 | 1.72 | GND | 1.97 | 0.10  | 4.42 |
| OFF        | 4.21          | 4.84 | 4.93 | 1.72 | GND | 1.96 | 0.10  | 0.10 |

### 7.0 IC CONFIGURATION

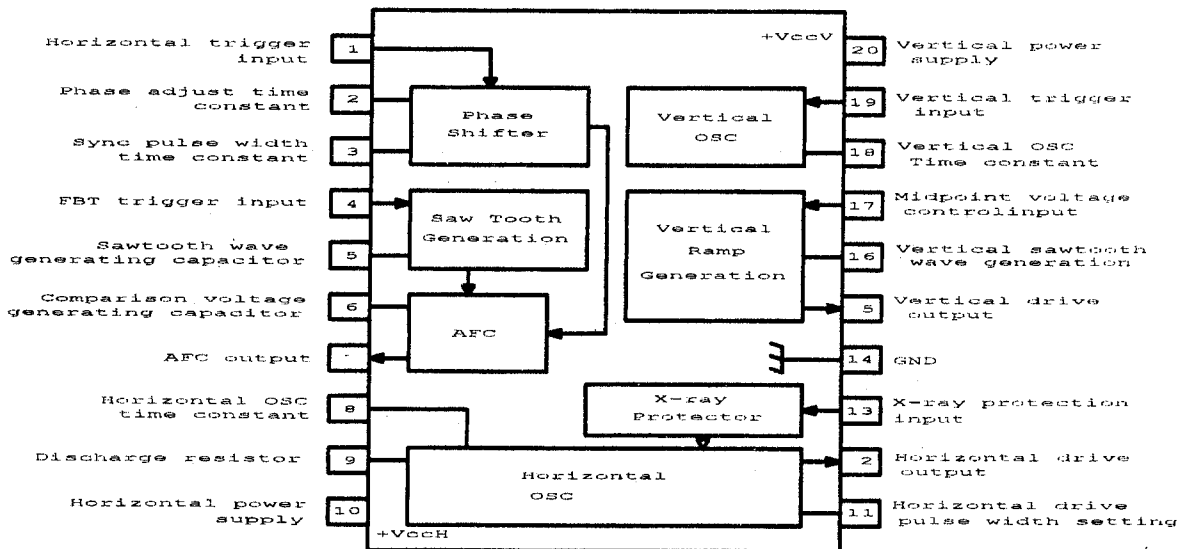
1. IC101, IC401 (3842, 3843)



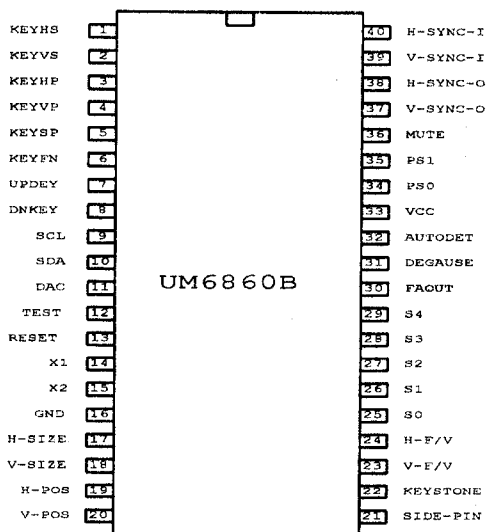
2. IC102 (7805)



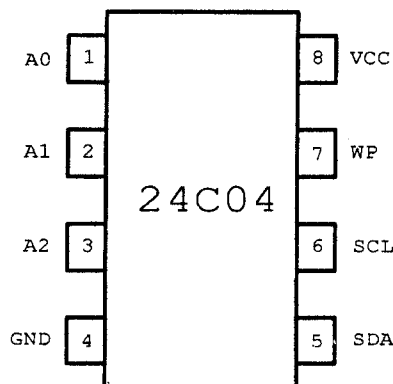
3. IC201 (LA7851)



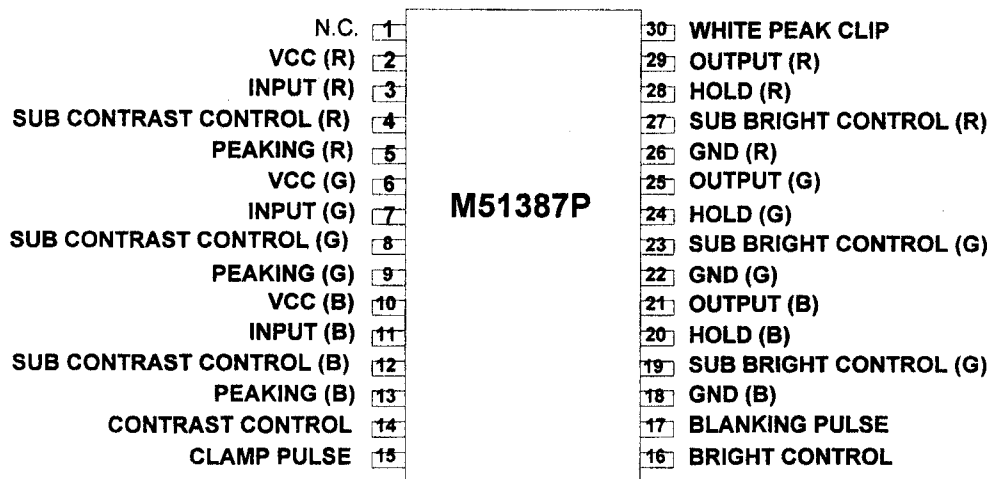
4. IC501 (UM6860B)



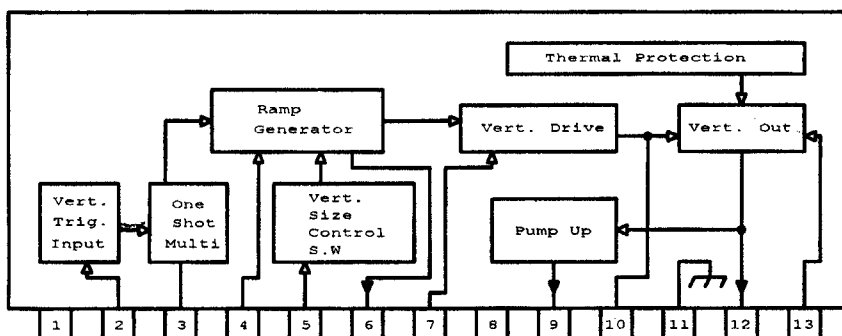
5. IC502 (24C04)



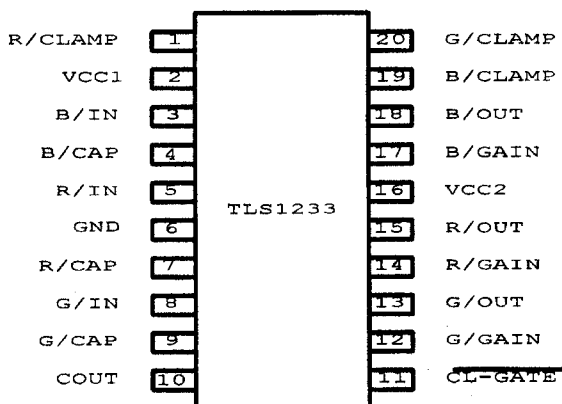
6. IC601 (M51387)



7. IC801 (LA7838)



1  
8. U601 (TLS1233)



## 8.0 RECOMMENDED SPARE PARTS LIST

| MAIN BOARD REV.A |          |           |            |                 |           |              |
|------------------|----------|-----------|------------|-----------------|-----------|--------------|
| ITEM             | PRIORITY | NEW PARTS | PART NO.   | DESCRIPTION     | LOCATION  | REMARK       |
| 1                | ●        |           | 17A06-150H | 3842            | IC101     |              |
| 2                |          |           | 17A07-040H | 7805            | IC102     |              |
| 3                |          |           | 17A06-140H | LA7851          | IC201     |              |
| 4                | ◎        |           | 17A06-190C | 3843            | IC401     |              |
| 5                | ◎        |           | 16P40-021W | UM6860B         | IC501     | (16P40-021F) |
| 6                | ◎        |           | 16M08-006R | 24L02           | IC502     |              |
| 7                |          |           | 17A07-031H | TL431           | IC701     |              |
| 8                | ◎        |           | 17A06-130H | LA7838          | IC801     |              |
| 9                |          |           | 14T92-011E | BT169D          | Q101      |              |
| 10               | ●        |           | 14K22-090S | 2SK1507         | Q104      | (1451D)      |
|                  |          |           | 14K22-270S | 2K265-01M       |           | (1451E)      |
| 11               | ◎        |           | 14K22-110W | 2SK890          | Q401      |              |
| 12               | ◎        |           | 14C3P-200P | 2SC5250         | Q701      |              |
| 13               |          |           | 14C26-040B | 2SC2688         | Q702      |              |
| 14               |          |           | 14K22-220Y | IRF520          | Q704      |              |
| 15               |          |           | 14K22-130P | 2SK791          | Q709      |              |
| 16               |          |           | 14C92-111B | 2SC945          | Q713,Q803 |              |
| 17               |          |           | 14A92-021B | 2SA733          | Q714,Q712 |              |
| 18               |          |           | 15D68-F000 | PBL406          | BD101     |              |
| 19               |          |           | 28ED7-1518 | 150UF 400V      | C104      |              |
| 20               |          |           | 15S47T201F | BYV26C          | D102,D101 |              |
| 21               |          |           | 15SST201F  | BYD33D          | D104      |              |
| 22               |          |           | 15S11M001F | 1N4148          | D105,D709 |              |
| 23               | ◎        |           | 15S47TK00F | BYM26C          | D407      |              |
| 24               | ●        |           | 49FB2-0A0B | FUSE 3.15A 250V | F101      |              |
| 25               |          |           | 22245-1041 | 100K            | R737      |              |
| 26               |          |           | 47F13-0630 | FBT             | T702      |              |
| 27               |          |           | 15Z33M1800 | ZENER DIODE 18V | ZD104     |              |

| CRT BOARD REV.A4 |          |           |            |             |                |         |
|------------------|----------|-----------|------------|-------------|----------------|---------|
| ITEM             | PRIORITY | NEW PARTS | PART NO.   | DESCRIPTION | LOCATION       | REMARK  |
| 1                | ●        |           | 17A04-020H | M51387P     | IC601          | (1451D) |
|                  |          |           | 17A04-140J | TLS1233N    |                | (1451E) |
| 2                |          |           | 14C92-031E | PH2369      | Q601,Q602,Q603 |         |
| 3                |          |           | 14A26-160C | 2SC3953     | Q604,Q605,Q606 |         |

※ Remark: ● : 1st priority , Recommended Q'ty = (Location Number) x3

◎ : 2nd priority , Recommended Q'ty = (Location Number) x2

9.0 PARTS LIST

1451E/D Parts List

Abbreviations : Capacitors ..... EL: Electrolytic Aluminum, TA: Tantalum, CE: Ceramic  
 PP: Polypropylene, PEI:Polyster (Inductive),  
 PEN:Polyster (Non-Inductive)PPS:Serial Poly Propylene,  
 MPE:Polyster Metalized, MPP:Polypropylene Metalized.  
 Resistors..... CF: Carbon Film, MF:Metal Film, VR: Variable Resistor.  
 MOF: Metal Oxide Film, POT:Potentiometer  
 Semiconductor... TR: Transistor, DI: Diode, ZD: Zener Diode, IC: IC.

Remark: ●: 1st priority , Recommended Q'ty = (Location Number x3)  
 ⊙: 2nd priority, Recommended Q'ty = (Location Number x2)  
 †: New parts

| Location   | Part No.   | Description            | Location | Part No.   | Description        |
|------------|------------|------------------------|----------|------------|--------------------|
| TRANSISTOR |            |                        | Q511     | 14C92-111B | TR NPN 2SC945P/Q   |
|            |            |                        | Q512     | 14A92-021B | TR PNP 2SA733P/Q   |
| Q101       | 14T92-011E | TR SCR BT169D          | Q513     | 14C92-111B | TR NPN 2SC945P/Q   |
| Q102       | 14C92-111B | TR NPN 2SC945P/Q       | Q514     | 14C92-111B | TR NPN 2SC945P/Q   |
| Q103       | 14C92-111B | TR NPN 2SC945P/Q       | Q515     | 14C92-111B | TR NPN 2SC945P/Q   |
| ●Q104      | 14K22-270S | TR MOS FET 2SK2645-01M | Q516     | 14A92-021B | TR PNP 2SA733P/Q   |
| Q106       | 14B26-030B | TR PNP 2SB772          | Q610     | 14C92-031E | TR NPN PH2369      |
| Q107       | 14D26-010B | TR NPN 2SD882P/Q       | Q611     | 14C26-100C | TR NPN 2SC3788E    |
| Q108       | 14C92-111B | TR NPN 2SC945P/Q       | Q630     | 14C92-031E | TR NPN PH2369      |
| Q109       | 14C92-111B | TR NPN 2SC945P/Q       | Q631     | 14C26-100C | TR NPN 2SC3788E    |
| Q110       | 14B26-030B | TR PNP 2SB772          | Q650     | 14C92-031E | TR NPN PH2369      |
| Q111       | 14C92-111B | TR NPN 2SC945P/Q       | Q651     | 14C26-100C | TR NPN 2SC3788E    |
| Q201       | 14A92-021B | TR PNP 2SA733P/Q       | Q660     | 14C92-111B | TR NPN 2SC945P/Q   |
| Q202       | 14C92-111B | TR NPN 2SC945P/Q       | ⊙Q701    | 14C3P-200P | TR NPN 2SC5250     |
| Q203       | 14A92-021B | TR PNP 2SA733P/Q       | Q702     | 14C26-040B | TR NPN 2SC2688K    |
| Q204       | 14C92-111B | TR NPN 2SC945P/Q       | Q704     | 14K22-110B | TR MOS FET 2SK2134 |
| Q205       | 14C92-111B | TR NPN 2SC945P/Q       | Q706     | 14K22-110B | TR MOS FET 2SK2134 |
| Q206       | 14C92-111B | TR NPN 2SC945P/Q       | Q709     | 14K22-130P | TR MOS FET 2SK791  |
| Q207       | 14A92-021B | TR PNP 2SA733P/Q       | Q711     | 14A92-021B | TR PNP 2SA733P/Q   |
| Q209       | 14C92-111B | TR NPN 2SC945P/Q       | Q712     | 14A92-021B | TR PNP 2SA733P/Q   |
| ⊙Q401      | 14K22-110W | TR MOS FET 630/890     | Q713     | 14C92-111B | TR NPN 2SC945P/Q   |
| Q402       | 14A92-021B | TR PNP 2SA733P/Q       | Q714     | 14A92-021B | TR PNP 2SA733P/Q   |
| Q501       | 14A92-021B | TR PNP 2SA733P/Q       | Q715     | 14A92-061E | TR PNP BF423       |
| Q502       | 14A92-021B | TR PNP 2SA733P/Q       | Q716     | 14C92-111B | TR NPN 2SC945P/Q   |
| Q503       | 14C92-111B | TR NPN 2SC945P/Q       | Q719     | 14C92-111B | TR NPN 2SC945P/Q   |
| Q504       | 14A92-021B | TR PNP 2SA733P/Q       | Q801     | 14C92-111B | TR NPN 2SC945P/Q   |
| Q508       | 14C92-111B | TR NPN 2SC945P/Q       | Q802     | 14A92-021B | TR PNP 2SA733P/Q   |
| Q510       | 14C92-111B | TR NPN 2SC945P/Q       | Q803     | 14C92-111B | TR NPN 2SC945P/Q   |



| Location | Part No.   | Description              | Location     | Part No.    | Description           |
|----------|------------|--------------------------|--------------|-------------|-----------------------|
| Q804     | 14C92-101B | TR NPN 2SC2001K          | D704         | 15S62M201F  | DI RECTIFIER 1A 100V  |
| Q805     | 14A92-071B | TR PNP 2SA952            | D706         | 15S62M201F  | DI RECTIFIER 1A 100V  |
| Q806     | 14A92-021B | TR PNP 2SA733P/Q         | D709         | 15S33T201F  | DI MD SW 1A 200V      |
| DIODES   |            |                          | D710         | 15S35T201F  | DI MD SW 1A 400V      |
| D101     | 15S47T201F | DI HI SW 1A 600V 30NS    | D712         | 15S11M001F  | DI SW 0.5A 50V 1N4148 |
| D102     | 15S47T201F | DI HI SW 1A 600V 30NS    | D716         | 15S11M001F  | DI SW 0.5A 50V 1N4148 |
| D103     | 15S11M001F | DI SW 0.5A 50V 1N4148    | D801         | 15S62M201F  | DI RECTIFIER 1A 100V  |
| D104     | 15S33T201F | DI MD SW 1A 200V         | D802         | 15S11M001F  | DI SW 0.5A 50V 1N4148 |
| D105     | 15S11M001F | DI SW 0.5A 50V 1N4148    | ZENER DIODES |             |                       |
| D107     | 15S11M001F | DI SW 0.5A 50V 1N4148    | ZD102        | 15Z33M6290  | ZD 6.2V 5% 0.5W       |
| D108     | 15S47T301F | DI HI SW 1.5A 600V 100NS | ZD103        | 15Z33M1800  | ZD 18V 5% 0.5W        |
| D109     | 15S47TK00F | DI HI SW 2.3A 600V 30NS  | ZD104        | 15Z33M1800  | ZD 18V 5% 0.5W        |
| D110     | 15S45T401T | DI HI SW 2A 400V 50NS    | ZD105        | 15Z33M1800  | ZD 18V 5% 0.5W        |
| D111     | 15S43T401T | DI HI SW 2A 200V 50NS    | ZD201        | 15Z33M8290  | ZD 8.2V 5% 0.5W       |
| D112     | 15S43T401T | DI HI SW 2A 200V 50NS    | ZD501        | 15Z33M3990  | ZD 3.9V 5% 0.5W       |
| D113     | 15S11M001F | DI SW 0.5A 50V 1N4148    | ZD502        | 15Z33M1200  | ZD 12V 5% 0.5W        |
| D114     | 15S11M001F | DI SW 0.5A 50V 1N4148    | ZD503        | 15Z33M6890  | ZD 6.8V 5% 0.5W       |
| D115     | 15S11M001F | DI SW 0.5A 50V 1N4148    | ZD601        | 15Z33M5190P | ZD 5.1V 5% 0.5W       |
| D201     | 15S11M001F | DI SW 0.5A 50V 1N4148    | ZD702        | 15Z33M1200  | ZD 12V 5% 0.5W        |
| D204     | 15S11M001F | DI SW 0.5A 50V 1N4148    | ZD704        | 15Z33M4390  | ZD 4.3V 5% 0.5W       |
| D207     | 15S33T201F | DI MD SW 1A 200V         | RESISTORS    |             |                       |
| D401     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R101         | 22245-4741  | CF 470K 5% 1/2W       |
| D402     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R102         | 23755-3634  | MOF 36K 5% 2W         |
| D403     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R103         | 23765-303B  | MOF 30K 5% 3W         |
| D404     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R104         | 23765-102B  | MOF 1K 5% 3W          |
| D405     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R106         | 22215-152M  | CF 1K5 5% 1/8W        |
| D406     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R107         | 23755-8204  | MOF 82R 5% 2W         |
| ⊙D407    | 15S47TK00F | DI HI SW 2.3A 600V 30NS  | R109         | 22215-472M  | CF 4K7 5% 1/8W        |
| D408     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R110         | 22215-682M  | CF 6K8 5% 1/8W        |
| D409     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R111         | 22215-433M  | CF 43K 5% 1/8W        |
| D503     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R113         | 22225-564M  | CF 560K 5% 1/4W       |
| D504     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R114         | 22225-363M  | CF 36K 5% 1/4W        |
| D506     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R115         | 22215-154M  | CF 150K 5% 1/8W       |
| D612     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R116         | 22225-470M  | CF 47R 5% 1/4W        |
| D613     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R117         | 22215-101M  | CF 100R 5% 1/8W       |
| D614     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R118         | 22215-473M  | CF 47K 5% 1/8W        |
| D632     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R119         | 22225-472M  | CF 4K7 5% 1/4W        |
| D633     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R120         | 22215-560M  | CF 56R 1/8W           |
| D634     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R121         | 22225-271M  | CF 270R 5% 1/4W       |
| D652     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R122         | 22215-101M  | CF 100R 5% 1/8W       |
| D653     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R125         | 22225-102M  | CF 1K 5% 1/4W         |
| D654     | 15S11M001F | DI SW 0.5A 50V 1N4148    | R126         | 23755-2284  | MOF 0.22R 5% 2W       |
| D661     | 15S11M001F | DI SW 0.5A 50V 1N4148    |              |             |                       |
| D701     | 15S11M001F | DI SW 0.5A 50V 1N4148    |              |             |                       |

| Location | Part No.   | Description     | Location | Part No.   | Description     |
|----------|------------|-----------------|----------|------------|-----------------|
| R127     | 22215-473M | CF 47K 5% 1/8W  | R228     | 22225-512M | CF 5K1 5% 1/4W  |
| R128     | 22225-302M | CF 3K 5% 1/4W   | R229     | 22215-102M | CF 1K 5% 1/8W   |
| R129     | 22215-681M | CF 680R 5% 1/8W | R230     | 23A11S029M | MF 17K4 1% 1/8W |
| R130     | 22215-102M | CF 1K 5% 1/8W   | R231     | 22215-203M | CF 20K 5% 1/8W  |
| R131     | 22215-242M | CF 2K4 5% 1/8W  | R232     | 22215-394M | CF 390K 5% 1/8W |
| R132     | 22215-272M | CF 2K7 5% 1/8W  | R233     | 22215-682M | CF 6K8 5% 1/8W  |
| R133     | 22215-473M | CF 47K 5% 1/8W  | R234     | 23A21-103M | MF 10K 1% 1/4W  |
| R134     | 22215-751M | CF 750R 5% 1/8W | R235     | 23A11S013M | MF 24K9 1% 1/8W |
| R135     | 22215-223M | CF 22K 5% 1/8W  | R236     | 22215-622M | CF 6K2 5% 1/8W  |
| R136     | 22215-223M | CF 22K 5% 1/8W  | R237     | 22215-272M | CF 2K7 5% 1/8W  |
| R138     | 22225-223M | CF 22K 5% 1/4W  | R239     | 22215-124M | CF 120K 5% 1/8W |
| R139     | 22215-472M | CF 4K7 5% 1/8W  | R240     | 22215-102M | CF 1K 5% 1/8W   |
| R140     | 22225-101M | CF 100R 5% 1/4W | R241     | 22215-102M | CF 1K 5% 1/8W   |
| R141     | 22215-472M | CF 4K7 5% 1/8W  | R242     | 22215-103M | CF 10K 5% 1/8W  |
| R142     | 23755-1004 | MOF 10R 5% 2W   | R243     | 22225-472M | CF 4K7 5% 1/4W  |
| R143     | 22245-4741 | CF 470K 5% 1/2W | R245     | 22215-302M | CF 3K 5% 1/8W   |
| R144     | 22225-363M | CF 36K 5% 1/4W  | R250     | 22215-122M | CF 1K2 5% 1/8W  |
| R146     | 22215-222M | CF 2K2 5% 1/8W  | R251     | 23A21-152M | MF 1K5 1% 1/4W  |
| R147     | 22225-564M | CF 560K 5% 1/4W | R401     | 23A11-202M | MF 2K 1% 1/8W   |
| R148     | 22215-222M | CF 2K2 5% 1/8W  | R402     | 23A11S025M | MF 6K19 1% 1/8W |
| R149     | 22215-203M | CF 20K 5% 1/8W  | R403     | 22225-512M | CF 5K1 5% 1/4W  |
| R201     | 22215-223M | CF 22K 5% 1/8W  | R404     | 22215-225M | CF 2M2 5% 1/8W  |
| R202     | 22215-202M | CF 2K 5% 1/8W   | R405     | 23A11-102M | MF 1K 1% 1/8W   |
| R203     | 22215-183M | CF 18K 5% 1/8W  | R406     | 23755-2284 | MOF 0.22R 5% 2W |
| R204     | 22215-102M | CF 1K 5% 1/8W   | R407     | 23755-2284 | MOF 0.22R 5% 2W |
| R205     | 22225-123M | CF 12K 5% 1/4W  | R408     | 22215-272M | CF 2K7 5% 1/8W  |
| R208     | 22215-273M | CF 27K 5% 1/8W  | R409     | 22215-104M | CF 100K 5% 1/8W |
| R209     | 22215-473M | CF 47K 5% 1/8W  | R410     | 22215-225M | CF 2M2 5% 1/8W  |
| R210     | 22215-203M | CF 20K 5% 1/8W  | R411     | 23A11-474M | MF 470K 1% 1/8W |
| R211     | 22215-202M | CF 2K 5% 1/8W   | R412     | 23A21-564M | MF 560K 1% 1/4W |
| R212     | 22215-562M | CF 5K6 5% 1/8W  | R414     | 22215-151M | CF 150R 5% 1/8W |
| R213     | 22225-272M | CF 2K7 5% 1/4W  | R416     | 22215-102M | CF 1K 5% 1/8W   |
| R214     | 22215-333M | CF 33K 5% 1/8W  | R417     | 23755-3984 | MOF 0.39R 5% 2W |
| R215     | 22215-471M | CF 470R 5% 1/8W | R418     | 22215-470M | CF 47R 5% 1/8W  |
| R216     | 23A21-512M | MF 5K1 1% 1/4W  | R419     | 22215-471M | CF 470R 5% 1/8W |
| R217     | 22215-102M | CF 1K 5% 1/8W   | R420     | 23755-4714 | MOF 470R 5% 2W  |
| R218     | 22215-822M | CF 8K2 5% 1/8W  | R501     | 22215-512M | CF 5K1 5% 1/8W  |
| R220     | 23A11-512M | MF 5K1 1% 1/8W  | R502     | 22215-222M | CF 2K2 5% 1/8W  |
| R220     | 23A11-752M | MF 7K5 1% 1/8W  | R503     | 22225-102M | CF 1K 5% 1/4W   |
| R221     | 22215-563M | CF 56K 5% 1/8W  | R504     | 22225-301M | CF 300R 5% 1/4W |
| R222     | 22225-221M | CF 220R 5% 1/4W | R505     | 22215-102M | CF 1K 5% 1/8W   |
| R223     | 22215-123M | CF 12K 5% 1/8W  | R506     | 22215-102M | CF 1K 5% 1/8W   |
| R224     | 23A21-334M | MF 330K 1% 1/4W | R507     | 22225-102M | CF 1K 5% 1/4W   |
| R225     | 23A21S007M | MF 80K6 1% 1/4W | R508     | 22215-272M | CF 2K7 5% 1/8W  |
| R226     | 22225-332M | CF 3K3 5% 1/4W  | R509     | 22215-222M | CF 2K2 5% 1/8W  |
| R227     | 22215-103M | CF 10K 5% 1/8W  | R510     | 22225-243M | CF 24K 5% 1/4W  |

| Location | Part No.   | Description     | Location | Part No.   | Description     |
|----------|------------|-----------------|----------|------------|-----------------|
| R511     | 22215-472M | CF 4K7 5% 1/8W  | R574     | 22215-472M | CF 4K7 5% 1/8W  |
| R512     | 22215-472M | CF 4K7 5% 1/8W  | R601     | 23A11-750M | MF 75R 1% 1/8W  |
| R513     | 22215-222M | CF 2K2 5% 1/8W  | R602     | 22215-102M | CF 1K 5% 1/8W   |
| R514     | 22215-202M | CF 2K 5% 1/8W   | R605     | 22215-472M | CF 4K7 5% 1/8W  |
| R515     | 22215-563M | CF 56K 5% 1/8W  | R607     | 22225-391M | CF 390R 5% 1/4W |
| R516     | 22225-392M | CF 3K9 5% 1/4W  | R608     | 22225-151M | CF 150R 5% 1/4W |
| R517     | 22215-102M | CF 1K 5% 1/8W   | R609     | 22215-224M | CF 220K 5% 1/8W |
| R519     | 22215-472M | CF 4K7 5% 1/8W  | R611     | 22225-131M | CF 130R 5% 1/4W |
| R520     | 22215-103M | CF 10K 5% 1/8W  | R612     | 22215-390M | CF 39R 5% 1/8W  |
| R521     | 22215-472M | CF 4K7 5% 1/8W  | R613     | 23885-1220 | MOF 1K2 5% 5W   |
| R522     | 22215-391M | CF 390R 5% 1/8W | R614     | 22215-103M | CF 10K 5% 1/8W  |
| R525     | 22215-202M | CF 2K 5% 1/8W   | R617     | 22245-4701 | CF 47R 5% 1/2W  |
| R526     | 22215-222M | CF 2K2 5% 1/8W  | R618     | 22225-221M | CF 220R 5% 1/4W |
| R527     | 22215-222M | CF 2K2 5% 1/8W  | R621     | 23A11-750M | MF 75R 1% 1/8W  |
| R528     | 22215-103M | CF 10K 5% 1/8W  | R622     | 22215-102M | CF 1K 5% 1/8W   |
| R529     | 22215-683M | CF 68K 5% 1/8W  | R625     | 22215-472M | CF 4K7 5% 1/8W  |
| R530     | 22215-223M | CF 22K 5% 1/8W  | R627     | 22225-391M | CF 390R 5% 1/4W |
| R534     | 22215-472M | CF 4K7 5% 1/8W  | R628     | 22225-151M | CF 150R 5% 1/4W |
| R535     | 22215-472M | CF 4K7 5% 1/8W  | R629     | 22215-224M | CF 220K 5% 1/8W |
| R536     | 22215-302M | CF 3K 5% 1/8W   | R631     | 22225-131M | CF 130R 5% 1/4W |
| R537     | 22215-302M | CF 3K 5% 1/8W   | R632     | 22215-390M | CF 39R 5% 1/8W  |
| R538     | 22215-302M | CF 3K 5% 1/8W   | R633     | 23885-1220 | MOF 1K2 5% 5W   |
| R539     | 22215-302M | CF 3K 5% 1/8W   | R637     | 22245-4701 | CF 47R 5% 1/2W  |
| R541     | 22215-222M | CF 2K2 5% 1/8W  | R638     | 22225-221M | CF 220R 5% 1/4W |
| R542     | 22225-302M | CF 3K 5% 1/4W   | R641     | 23A11-750M | MF 75R 1% 1/8W  |
| R547     | 22215-302M | CF 3K 5% 1/8W   | R642     | 22215-102M | CF 1K 5% 1/8W   |
| R548     | 22215-302M | CF 3K 5% 1/8W   | R645     | 22215-472M | CF 4K7 5% 1/8W  |
| R549     | 22225-472M | CF 4K7 5% 1/4W  | R647     | 22225-391M | CF 390R 5% 1/4W |
| R553     | 22215-302M | CF 3K 5% 1/8W   | R648     | 22225-151M | CF 150R 5% 1/4W |
| R554     | 22215-302M | CF 3K 5% 1/8W   | R649     | 22215-224M | CF 220K 5% 1/8W |
| R555     | 22225-472M | CF 4K7 5% 1/4W  | R651     | 22225-131M | CF 130R 5% 1/4W |
| R556     | 22215-222M | CF 2K2 5% 1/8W  | R652     | 22215-330M | CF 33R 5% 1/8W  |
| R557     | 22215-221M | CF 220R 5% 1/8W | R653     | 23885-1220 | MOF 1K2 5% 5W   |
| R558     | 22215-472M | CF 4K7 5% 1/8W  | R657     | 22245-4701 | CF 47R 5% 1/2W  |
| R560     | 22225-271M | CF 270R 5% 1/4W | R658     | 22225-221M | CF 220R 5% 1/4W |
| R561     | 22215-202M | CF 2K 5% 1/8W   | R661     | 22215-103M | CF 10K 5% 1/8W  |
| R562     | 22215-472M | CF 4K7 5% 1/8W  | R662     | 22215-242M | CF 2K4 5% 1/8W  |
| R563     | 22215-103M | CF 10K 5% 1/8W  | R663     | 22225-102M | CF 1K 5% 1/4W   |
| R564     | 22215-681M | CF 680R 5% 1/8W | R680     | 22215-473M | CF 47K 5% 1/8W  |
| R565     | 22215-222M | CF 2K2 5% 1/8W  | R682     | 22245-1011 | CF 100R 5% 1/2W |
| R567     | 22425-152M | CF 1K5 5% 1/4W  | R683     | 22245-3331 | CF 33K 5% 1/2W  |
| R568     | 22215-562M | CF 5K6 5% 1/8W  | R685     | 22215-473M | CF 47K 5% 1/8W  |
| R570     | 22215-102M | CF 1K 5% 1/8W   | R686     | 22215-682M | CF 6K8 5% 1/8W  |
| R571     | 22215-331M | CF 330R 5% 1/8W | R687     | 22215-682M | CF 6K8 5% 1/8W  |
| R572     | 22215-472M | CF 4K7 5% 1/8W  | R688     | 22215-682M | CF 6K8 5% 1/8W  |
| R573     | 22215-472M | CF 4K7 5% 1/8W  | R697     | 22215-103M | CF 10K 5% 1/8W  |

| Location | Part No.   | Description     | Location          | Part No.   | Description             |
|----------|------------|-----------------|-------------------|------------|-------------------------|
| R698     | 22225-101M | CF 100R 5% 1/4W | R807              | 22215-114M | CF 110K 5% 1/8W         |
| R699     | 23755-1234 | MOF 12K 5% 2W   | R808              | 23A31-1191 | MOF 1R1 1% 1/2W         |
| R701     | 23245-3934 | MOF 39K 5% 1W   | R809              | 22215-102M | CF 1K 5% 1/8W           |
| R702     | 22215-222M | CF 2K2 5% 1/8W  | R810              | 22215-331M | CF 330R 5% 1/8W         |
| R703     | 22225-479M | CF 4R7 5% 1/4W  | R811              | 22215-472M | CF 4K7 5% 1/8W          |
| R705     | 22225-220M | CF 22R 5% 1/4W  | R812              | 22215-472M | CF 4K7 5% 1/8W          |
| R707     | 23755-820B | MOF 82R 5% 2W   | R813              | 22245-4791 | CF 4R7 5% 1/2W          |
| R709     | 22225-470M | CF 47R 5% 1/4W  | R814              | 22215-182M | CF 1K8 5% 1/8W          |
| R710     | 22215-164M | CF 160K 5% 1/8W | R815              | 22245-3311 | CF 330R 5% 1/2W         |
| R711     | 22215-302M | CF 3K 5% 1/8W   | R816              | 22215-152M | CF 1K5 5% 1/8W          |
| R712     | 22215-333M | CF 33K 5% 1/8W  | R817              | 22215-272M | CF 2K7 5% 1/8W          |
| R713     | 22215-513M | CF 51K 5% 1/8W  | R818              | 22215-203M | CF 20K 5% 1/8W          |
| R714     | 22215-682M | CF 6K8 5% 1/8W  | R819              | 23755-1214 | MOF 120R 5% 2W          |
| R715     | 22225-472M | CF 4K7 5% 1/4W  | R820              | 22215-122M | CF 1K2 5% 1/8W          |
| R716     | 23A21-302M | MF 3K 1% 1/4W   | R821              | 22215-101M | CF 100R 5% 1/8W         |
| R717     | 23A11-512M | MF 5K1 1% 1/8W  | R856              | 22215-104M | CF 100K 5% 1/8W         |
| R718     | 22225-102M | CF 1K 5% 1/4W   | R857              | 22215-102M | CF 1K 5% 1/8W           |
| R719     | 22225-152M | CF 1K5 5% 1/4W  | R858              | 22215-470M | CF 47R 5% 1/8W          |
| R720     | 22225-152M | CF 1K5 5% 1/4W  | VARIABLE RESISTOR |            |                         |
| R721     | 22225-471M | CF 470R 5% 1/4W | VR101             | 25B20-202B | POT 2KB 0.1W            |
| R722     | 22225-821M | CF 820R 5% 1/4W | VR102             | 25B20-102B | POT 1KB 0.1W            |
| R723     | 22225-222M | CF 2K2 5% 1/4W  | VR201             | 25AA0-202B | POT 2KB 0.1W            |
| R724     | 22245-2021 | CF 2K 5% 1/2W   | VR202             | 25AA0-102B | POT 1KB 0.1W            |
| R725     | 22225-104M | CF 100K 5% 1/4W | VR204             | 25AA0-104B | POT 100KB 0.1W          |
| R727     | 22225-104M | CF 100K 5% 1/4W | VR401             | 25B20-102B | POT 1KB 0.1W            |
| R732     | 22215-470M | CF 47R 5% 1/8W  | VR601             | 25AA0-203B | POT 20KB 0.1W           |
| R733     | 22225-151M | CF 150R 5% 1/4W | VR602             | 25AA0-203B | POT 20KB 0.1W           |
| R734     | 22215-203M | CF 20K 5% 1/8W  | VR603             | 25AA0-203B | POT 20KB 0.1W           |
| R736     | 22225-563M | CF 56K 5% 1/4W  | VR611             | 25AA0-203B | POT 20KB 0.1W           |
| R737     | 22445-104A | CF 100K 5% 1/2W | VR612             | 25AA0-203B | POT 20KB 0.1W           |
| R738     | 22215-332M | CF 3K3 5% 1/8W  | VR613             | 25AA0-203B | POT 20KB 0.1W           |
| R739     | 22215-332M | CF 3K3 5% 1/8W  | VR701             | 25Q0E-203B | VR 20KB 0.05W (CENTER)  |
| R740     | 22215-272M | CF 2K7 5% 1/8W  | VR702             | 25B20-203B | POT 20KB 0.1W           |
| R741     | 22215-562M | CF 5K6 5% 1/8W  | VR703             | 25Q0E-203B | VR 20KB 0.05W (CENTER)  |
| R742     | 22245-2211 | CF 220R 5% 1/2W | VR801             | 25AA0-202B | POT 2KB 0.1W            |
| R743     | 22225-225M | CF 2M2 5% 1/4W  | CAPACITOR         |            |                         |
| R745     | 23755-4714 | MOF 470R 5% 2W  | C101              | 42A77-224A | SAFETY 0.22U 20% AC250V |
| R746     | 22215-473M | CF 47K 5% 1/8W  | C102              | 42D77-2224 | SAFETY 2200P 20%        |
| R747     | 22215-153M | CF 15K 5% 1/8W  | C103              | 42D77-2224 | SAFETY 2200P 20%        |
| R755     | 22215-331M | CF 330R 5% 1/8W | C104              | 28ED7-1518 | EL 150U 20% 400V        |
| R757     | 22215-331M | CF 330R 5% 1/8W | C105              | 39446-1038 | CE 0.01U 10% 500V       |
| R801     | 22215-243M | CF 24K 5% 1/8W  | C106              | 39446-1038 | CE 0.01U 10% 500V       |
| R802     | 22215-622M | CF 6K2 5% 1/8W  |                   |            |                         |
| R804     | 22225-472M | CF 4K7 5% 1/4W  |                   |            |                         |
| R805     | 22215-123M | CF 12K 5% 1/8W  |                   |            |                         |
| R806     | 22215-473M | CF 47K 5% 1/8W  |                   |            |                         |

| Location | Part No.   | Description       | Location | Part No.   | Description       |
|----------|------------|-------------------|----------|------------|-------------------|
| C107     | 39446-221R | CE 220P 10% 500V  | C223     | 39B56E103R | ML 0.01U 10% 50V  |
| C108     | 42D77-2224 | SAFETY 2200P 20%  | C224     | 28467-109R | EL 1U 20% 50V     |
| C109     | 28H37-470R | EL 47U 20% 16V    | C225     | 28H67-100R | EL 10U 20% 50V    |
| C110     | 31115-104R | PEI 0.1U 5% 50V   | C401     | 28H67-109R | EL 1U 20% 50V     |
| C111     | 28H47-101R | EL 100U 20% 25V   | C402     | 28H67-109R | EL 1U 20% 50V     |
| C113     | 39B87C104R | ML 0.1U 20% 50V   | C403     | 31115-104R | PEI 0.1U 5% 50V   |
| C114     | 31115-222R | PEI 2200P 5% 50V  | C404     | 39146-102R | CE 1000P 10% 50V  |
| C116     | 31115-222R | PEI 2200P 5% 50V  | C406     | 28H67-109R | EL 1U 20% 50V     |
| C118     | 31115-102R | PEI 1000P 5% 50V  | C407     | 39146-222R | CE 2200P 10% 50V  |
| C119     | 28H07-4701 | EL 47U 20% 160V   | C408     | 39146-471R | CE 470P 10% 50V   |
| C120     | 28AA7-6801 | EL 68U 20% 200V   | C409     | 39B87C104R | ML 0.1U 20% 50V   |
| C121     | 28H97-2211 | EL 220U 20% 100V  | C410     | 28H37-101R | EL 100U 20% 16V   |
| C122     | 39446-221R | CE 220P 10% 500V  | C411     | 39146-152R | CE 1500P 10% 50V  |
| C123     | 28H57-4711 | EL 470U 20% 35V   | C413     | 28H47-220R | EL 22U 20% 25V    |
| C124     | 28A47-6811 | EL 680U 20% 25V   | C414     | 28H47-220R | EL 22U 20% 25V    |
| C125     | 28H47-4711 | EL 470U 20% 25V   | C415     | 28H67-109R | EL 1U 20% 50V     |
| C127     | 28H37-101R | EL 100U 20% 16V   | C416     | 39446-471R | CE 470P 10% 500V  |
| C128     | 28H37-331R | EL 330U 20% 16V   | C501     | 28H67-100R | EL 10U 20% 50V    |
| C129     | 28H37-331R | EL 330U 20% 16V   | C502     | 28H37-470R | EL 47U 20% 16V    |
| C130     | 28H27-221R | EL 220U 20% 10V   | C503     | 39B87C104R | ML 0.1U 20% 50V   |
| C131     | 39446-272R | CE 2700P 10% 500V | C504     | 39B87C104R | ML 0.1U 20% 50V   |
| C133     | 42D77-2224 | SAFETY 2200P 20%  | C505     | 28H27-221R | EL 220U 20% 10V   |
| C135     | 39B56E103R | ML 0.01U 10% 50V  | C509     | 39B87C104R | ML 0.1U 20% 50V   |
| C151     | 28H37-470R | EL 47U 20% 16V    | C510     | 28H37-101R | EL 100U 20% 16V   |
| C201     | 38115-470R | CE 47P 5% 50V NPO | C513     | 39B56E103R | ML 0.01U 10% 50V  |
| C202     | 28H67-479R | EL 4U7 20% 50V    | C516     | 28H27-221R | EL 220U 20% 10V   |
| C203     | 31115-102R | PEI 1000P 5% 50V  | C517     | 39B87C104R | ML 0.1U 20% 50V   |
| C204     | 31115-102R | PEI 1000P 5% 50V  | C519     | 39146-102R | CE 1000P 10% 50V  |
| C205     | 31115-272R | PEI 2700P 5% 50V  | C522     | 39146-331R | CE 330P 10% 50V   |
| C206     | 31115-182R | PEI 1800P 5% 50V  | C523     | 39146-102R | CE 1000P 10% 50V  |
| C207     | 28H67-109R | EL 1U 20% 50V     | C524     | 39146-101R | CE 100P 10% 50V   |
| C208     | 31115-103R | PEI 0.01U 5% 50V  | C525     | 39146-102R | CE 1000P 10% 50V  |
| C209     | 33322-222R | PPI 2200P 2% 100V | C526     | 39146-102R | CE 1000P 10% 50V  |
| C210     | 28H67-109R | EL 1U 20% 50V     | C527     | 28H67-479R | EL 4U7 20% 50V    |
| C211     | 39B87C104R | ML 0.1U 20% 50V   | C528     | 39146-222R | CE 2200P 10% 50V  |
| C212     | 28H37-471R | EL 470U 20% 16V   | C529     | 39B87C333R | ML 0.033U 20% 50V |
| C213     | 28H67-109R | EL 1U 20% 50V     | C530     | 28H37-101R | EL 100U 20% 16V   |
| C214     | 31115-104R | PEI 0.1U 5% 50V   | C601     | 39B87C104R | ML 0.1U 20% 50V   |
| C215     | 39B56E103R | ML 0.01U 10% 50V  | C602     | 28H67-100R | EL 10U 20% 50V    |
| C216     | 31115-103R | PEI 0.01U 5% 50V  | C603     | 39B87C104R | ML 0.1U 20% 50V   |
| C217     | 28H37-470R | EL 47U 20% 16V    | C604     | 39B87C104R | ML 0.1U 20% 50V   |
| C218     | 28H37-1021 | EL 1000U 20% 16V  | C611     | 39146-121R | CE 120P 10% 50V   |
| C219     | 28H67-479R | EL 4U7 20% 50V    | C612     | 28H07-109R | EL 1U 20% 160V    |
| C220     | 28H67-109R | EL 1U 20% 50V     | C613     | 28H07-109R | EL 1U 20% 160V    |
| C221     | 38BA5-391R | ML 390P 5% 50V    | C614     | 28H07-109R | EL 1U 20% 160V    |
| C222     | 28H67-100R | EL 10U 20% 50V    | C622     | 28H67-100R | EL 10U 20% 50V    |

| Location | Part No.   | Description        | Location     | Part No.   | Description                          |
|----------|------------|--------------------|--------------|------------|--------------------------------------|
| C623     | 39B87C104R | ML 0.1U 20% 50V    | C727         | 39146-102R | CE 1000P 10% 50V                     |
| C624     | 39B87C104R | ML 0.1U 20% 50V    | C729         | 35145-3347 | MPP 0.33U 5% 250V                    |
| C631     | 38196-820R | CE 82P 10% 50V     | C730         | 39B87C104R | ML 0.1U 20% 50V                      |
| C632     | 28H07-109R | EL 1U 20% 160V     | C731         | 39446-221R | CE 220P 10% 500V                     |
| C633     | 28H07-109R | EL 1U 20% 160V     | C736         | 39B56E103R | ML 0.01U 10% 50V                     |
| C634     | 28H07-109R | EL 1U 20% 160V     | C737         | 28HB7-109R | EL 1U 20% 250V                       |
| C642     | 28H67-100R | EL 10U 20% 50V     | C738         | 39446-331R | CE 330P 10% 500V                     |
| C643     | 39B87C104R | ML 0.1U 20% 50V    | C740         | 39446-222R | CE 2200P 10% 500V                    |
| C644     | 39B87C104R | ML 0.1U 20% 50V    | C745         | 28H37-470R | EL 47U 20% 16V                       |
| C651     | 39146-121R | CE 120P 10% 50V    | C801         | 28H37-331R | EL 330U 20% 16V                      |
| C652     | 28H07-109R | EL 1U 20% 160V     | C802         | 39146-102R | CE 1000P 10% 50V                     |
| C653     | 28H07-109R | EL 1U 20% 160V     | C803         | 39146-102R | CE 1000P 10% 50V                     |
| C654     | 28H07-109R | EL 1U 20% 160V     | C804         | 28H67-100R | EL 10U 20% 50V                       |
| C660     | 28H97-4701 | EL 47U 20% 100V    | C805         | 346B5-334R | MPE 0.33U 5% 63V                     |
| C661     | 28H37-101R | EL 100U 20% 16V    | C806         | 28H57-101R | EL 100U 20% 35V                      |
| C662     | 28H37-101R | EL 100U 20% 16V    | C807         | 28H57-1021 | EL 1000U 20% 35V                     |
| C663     | 28H37-101R | EL 100U 20% 16V    | C808         | 39B87C104R | ML 0.1U 20% 50V                      |
| C664     | 39B87C104R | ML 0.1U 20% 50V    | C809         | 28H67-220R | EL 22U 20% 50V                       |
| C665     | 39B87C104R | ML 0.1U 20% 50V    | C810         | 28H47-2225 | EL 2200U 20% 25V                     |
| C680     | 28H37-101R | EL 100U 20% 16V    | C811         | 28H67-100R | EL 10U 20% 50V                       |
| C681     | 39446-561R | CE 560P 10% 500V   | C820         | 28H57-221R | EL 220U 20% 35V                      |
| C682     | 39646-1028 | CE 1000P 10% 2KV   | COILS        |            |                                      |
| C683     | 39B87C104R | ML 0.1U 20% 50V    | L101         | 46R00-0490 | CORE RF BEAD 6*10                    |
| C686     | 28H67-100R | EL 10U 20% 50V     | L102         | 47E00-0110 | XFMR EMI UU-10.5                     |
| C687     | 28H67-100R | EL 10U 20% 50V     | L103         | 47E00-0110 | XFMR EMI UU-10.5                     |
| C688     | 39B87C104R | ML 0.1U 20% 50V    | L104         | 45M1K-1214 | COIL CHOKE 120U 10%                  |
| C690     | 39146-101R | CE 100P 10% 50V    | L106         | 45M1K-1214 | COIL CHOKE 120U 10%                  |
| C691     | 28H37-101R | EL 100U 20% 16V    | L401         | 46N00-0460 | COIL LINE CHOKE 400uH                |
| C701     | 39B87C104R | ML 0.1U 20% 50V    | L501         | 45B0K-102T | COIL PEAKING 1000U                   |
| C702     | 28A57-221R | EL 220U 20% 35V    | L611         | 45B0K-689T | COIL PEAKING 6U8                     |
| C703     | 375A5-6827 | PPS 6800P 5% 1.6KV | L631         | 45B0K-689T | COIL PEAKING 6U8                     |
| C704     | 375A5-3327 | PPS 3300P 5% 1.6KV | L651         | 45B0K-689T | COIL PEAKING 6U8                     |
| C708     | 35145-2246 | MPP 0.22U 5% 250V  | L662         | 45B0K-100T | COIL PEAKING 10U                     |
| C709     | 39B56E103R | ML 0.01U 10% 50V   | L663         | 45B0K-100T | COIL PEAKING 10U                     |
| C712     | 35145-1846 | MPP 0.18U 5% 250V  | L701         | 46L00-0670 | COIL LINEAR 11uH 0.6 311/2T          |
| C713     | 39B56E103R | ML 0.01U 10% 50V   | L702         | 46N00-0430 | COIL LINE CHOKE 1mH                  |
| C716     | 35155H3647 | MPP 0.36U 5% 400V  | L706         | 46N00-0330 | COIL LINE CHOKE 820uH                |
| C717     | 28H67-479R | EL 4U7 20% 50V     | TRANSFORMERS |            |                                      |
| C718     | 28H07-109R | EL 1U 20% 160V     | T101         | 47S00-0780 | XFMR SPS ERL-35                      |
| C719     | 28H67-479R | EL 4U7 20% 50V     | T701         | 47D10-0330 | XFMR DRIVE EI-19                     |
| C720     | 28J67-478R | EL 0.47U 20% 50V   | T702         | 47F13-0630 | XFMR FBT W/FOCUS/<br>SCREEN/CR BLOCK |
| C721     | 28H67-109R | EL 1U 20% 50V      |              |            |                                      |
| C722     | 39B87C334R | ML 0.33U 20% 50V   |              |            |                                      |
| C723     | 39B87C104R | ML 0.1U 20% 50V    |              |            |                                      |
| C724     | 28H57-1021 | EL 1000U 20% 35V   |              |            |                                      |
| C725     | 28HB7-479R | EL 4U7 20% 250V    |              |            |                                      |

| Location                   | Part No.    | Description                              |
|----------------------------|-------------|--|
| INTEGRATED CIRCUITS        |             |  |
| ●IC101                     | 17A06-150H  | IC LINEAR DEFLECTION 3842/17384 8P       |
| IC102                      | 17A07-040H  | IC LINEAR VOLTAGE REGULATOR 7805 3P      |
| IC201                      | 17A06-140H  | IC LINEAR DEFLECTION 7851 20P            |
| ◎IC401                     | 17A06-190G  | IC LINEAR 8P DEFLECTIONUC3843B           |
| ◎IC501                     | 16P40-021F  | IC MICRO-PROCESSOR 40P UM6860 MASK ROM   |
| ◎IC502                     | 16M08-006R  | IC EEPROM AT24C02-10PC(BLANK)PROTECT 8P  |
| IC701                      | 17A07-031H  | IC LINEAR VOLTAGE REGULATOR 431 3P       |
| ◎IC801                     | 17A06-130H  | IC LINEAR DEFLECTION 7838 13P            |
| MISCELLANEOUS              |             |  |
|                            | 20H14-026A  | CRT C-.28 NG M34KDD50X01(SD)             |
|                            | 56Q67-1803  | POWER CORD IBMPC VDE 1M8-B 250V10A       |
|                            | 65S10-1751J | CABLE SIGNAL 15D-11H 3+6 175CM BLACK W/C |
|                            | 11S31-060A  | PCB MAIN-S 1451D 283*247*1.6MM           |
|                            | 11S33-035A  | PCB CRT-S 123*118*1.6MM1451E             |
|                            | 11S39-037A  | PCB LED-S 19.1*14*1.6MM1451D2            |
|                            | 11S3D-014A  | PCB DISPLAY-S 1451D2 156*20.3*1.6MM      |
|                            | 65W31321T0  | CONN H WIRE 1007#24 3P 2.5 21L-T W/TUBE  |
|                            | 65W35290D0  | CONN H WIRE 1015#18 3P-1 7.5 90L SHORT   |
|                            | 19D0A-0010  | DIODE LED BICOLOR W-DIFFUSED (L-119YGW)  |
|                            | 46G00-0087  | COIL DEGAUSSING (100T)                   |
|                            | 54B11-6831  | WIRE BRAID 68CM                          |
|                            | 54B12-1805  | WIRE BRAID 18CM                          |
| BD101                      | 15D68-F000  | DI BRIDGE 4A 800V                        |
| C-C'                       | 54N23B0700  | WIRE LEAD 1015#18 7L BK                  |
| F-F                        | 54N16B0880  | WIRE LEAD 1007#24 8L GREY                |
| F101                       | 68A00-0030  | CLIP FUSE                                |
| ●F101                      | 49FB2-0A0B  | FUSE SLOW 3.15A 250V (NORDIC)            |
| FD101                      | 46R00-0010  | CORE RF BEAD RHW 3.5*6*1.0 TP            |
| FD501                      | 46R00-0010  | CORE RF BEAD RHW 3.5*6*1.0 TP            |
| FD602                      | 46R00-0010  | CORE RF BEAD RHW 3.5*6*1.0 TP            |
| FD603                      | 46R00-0010  | CORE RF BEAD RHW 3.5*6*1.0 TP            |
| FD604                      | 46R00-0010  | CORE RF BEAD RHW 3.5*6*1.0 TP            |
| FD618                      | 46R00-0010  | CORE RF BEAD RHW 3.5*6*1.0 TP            |
| FD622                      | 46R00-0010  | CORE RF BEAD RHW 3.5*6*1.0 TP            |
| FD701                      | 46R00-0010  | CORE RF BEAD RHW 3.5*6*1.0 TP            |
| GND (IC501 PIN16-C525 GND) | 54L23B070P  | WIRE LEAD 1015#18 7L BK3/3               |
| J617                       | 46R00-0010  | CORE RF BEAD RHW 3.5*6*1.0 TP            |
| J78                        | 22215-102M  | CF 1K 5% 1/8W                            |
| L-L'                       | 54A35B34BR  | WIRE LEAD 1617#22 2P 34L-T BU+BR         |
| N-N'                       | 54A35B34BR  | WIRE LEAD 1617#22 2P 34L-T BU+BR         |
| NTC101                     | 26B00-0081  | NTCR 8R 15% 3A P=7.5MM                   |
| P1                         | 65W81325D0  | CONN H/T WIRE 1007#24 8P 2.5 25L         |

| Location                | Part No.    | Description                          |
|-------------------------|-------------|--------------------------------------|
| P101                    | 64P20-1010  | SOCKET POWER                         |
| P503                    | 65W51336D1  | CONN H/T WIRE 1007#24 5P 2.5 36L-T   |
| P705                    | 65W71333D1  | CONN H/T WIRE 1007#24 7P-1 2.5 33L-T |
| P706                    | 65W2520640  | CONN H/T WIRE 1007#24 2P 7.5 6L      |
| PTC101                  | 26A00-0080  | PTCR 9R 20% 2P                       |
| RL101                   | 53R001-008M | RELAY COIL DC12V 5A/250V (2-A)       |
| SG610                   | 42S00-0201  | SPARK GAP DSP-201M 200V20%           |
| SG630                   | 42S00-0201  | SPARK GAP DSP-201M 200V20%           |
| SG650                   | 42S00-0201  | SPARK GAP DSP-201M 200V20%           |
| SG660                   | 42S00-0301  | SPARK GAP DSP-301N 300V30%           |
| SW1                     | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW10                    | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW101                   | 52P12-0030  | SWITCH POWER 1P2T 5A250V             |
| SW11                    | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW2                     | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW3                     | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW4                     | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW5                     | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW6                     | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW7                     | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW8                     | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| SW9                     | 52P11-0050  | SWITCH PRESS W/O LOCK H=9.5MM        |
| U601                    | 17A04-140J  | IC LINEAR 20P VIDEO TLS1233N         |
| U603                    | 16M08-007S  | IC EEPROM 24LC21 (BLANK) 8P          |
| CRT                     | 54L23B290N  | WIRE LEAD 1015#18 29L BLACK 15/15    |
| CRT GND-FBT H/S*1       | 54C23B1900  | WIRE TERMINAL 1015#18 19L BLACK      |
| CRT GND-M/B 'B'         | 54M23B3400  | WIRE LEAD 1015#18 34L BLACK          |
| CRT GND-M/B GND         | 54C23B2700  | WIRE TERMINAL 1015#18 27L BK         |
| CRT GROUND-M/B 'D'      | 65W1352510  | CONN H WIRE 1015#18 1P 25L           |
| CRT SHILE               | 54C23B1900  | WIRE TERMINAL 1015#18 19L BLACK      |
| D COVER-FBT H/S*1       | 54C23B1900  | WIRE TERMINAL 1015#18 19L BLACK      |
| WIRE BRAID-SHIELD COVER | 54L23B290N  | WIRE LEAD 1015#18 29L BLACK 15/15    |
| XL501                   | 60C00-0030  | XTAL 8MHZ                            |
| GND-CRT SHIELD COVER    | 54L23B290N  | WIRE LEAD 1015#18 29L BLACK 15/15    |



## 10.0 CRT CONTRAST LIST

THE 1451E/D SERIES MONITOR HAVE SEVERAL KINDS OF CRTs AS BELOW.  
THE DIFFERENT PARTS BETWEEN THEM IS SHOWN IN BELOW TABLE.

1451E

Rev. A

| CRT VENDOR<br>PART NO.<br>PART NAME | HITACHI<br>20H14-026A<br>M34KDD50X01 (SD) | TOSHIBA<br>20H14-156B<br>M34KLP23XX02 |
|-------------------------------------|---|---------------------------------------|
| L701                                | 46L00-0670                                | 46L00-0650                            |
| R745                                | 470 $\Omega$ 2W 5%<br>23755-4714          | 220 $\Omega$ 2W 5%<br>23755-2214      |
| R412                                | 560K 1/4W 1%<br>23A21-564M                | 430K 1/4W 1%<br>23A21-434M            |
| CRT SPACER                          | 5mm<br>7416498340                         | 4mm<br>7410012300                     |

1451E

Rev. D

| CRT VENDOR<br>PART NO.<br>PART NAME | TOSHIBA<br>20H14-156B<br>M34KLP23XX02 | HITACHI<br>20H14-026A<br>M34KDD50X01 (SD) | SAMSUNG<br>20H14-276A<br>M34KUN35X15 |
|-------------------------------------|---------------------------------------|---|--------------------------------------|
| L701                                | 46L00-0650                            | 46L00-0670                                | 46L00-0660                           |
| R745                                | 220 $\Omega$ 2W<br>23755-2214         | 470 $\Omega$ 2W<br>23755-4714             | 220 $\Omega$ 2W<br>23755-2214        |
| R412                                | 430K 1/4W 1%<br>23A21-434M            | 560K 1/4W 1%<br>23A21-564M                | 560K 1/4W 1%<br>23A21-564M           |
| R710                                | 120K 1/4W 5%<br>22425-124M            | 120K 1/4W 5%<br>22425-124M                | 100K 1/4W 5%<br>22425-104M           |
| CRT SPACER                          | 4mm<br>7410012300                     | 5mm<br>7416498340                         | 5mm<br>7416498340                    |

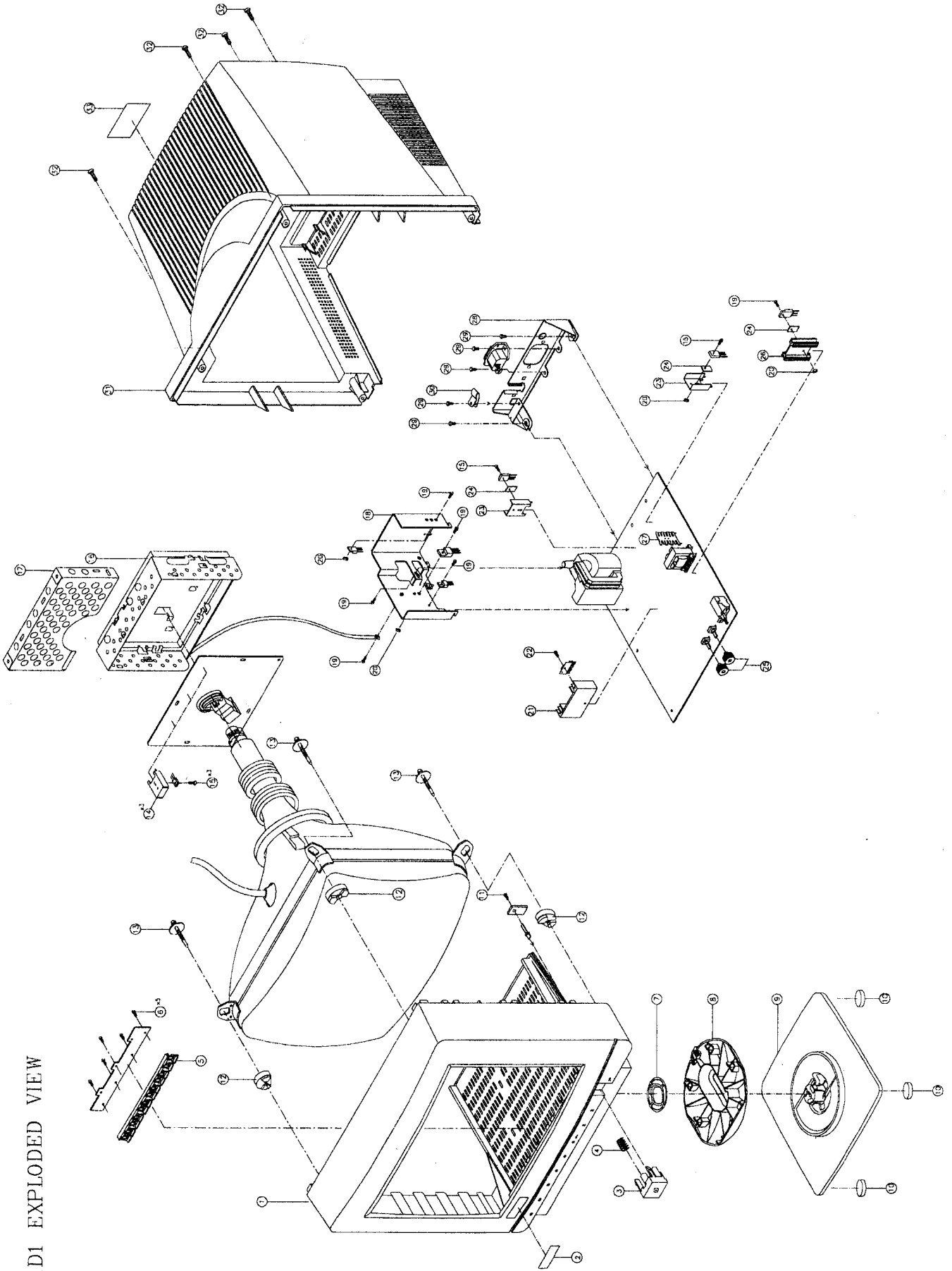
# 1451D1 EXPLODED VIEW PARTS LIST

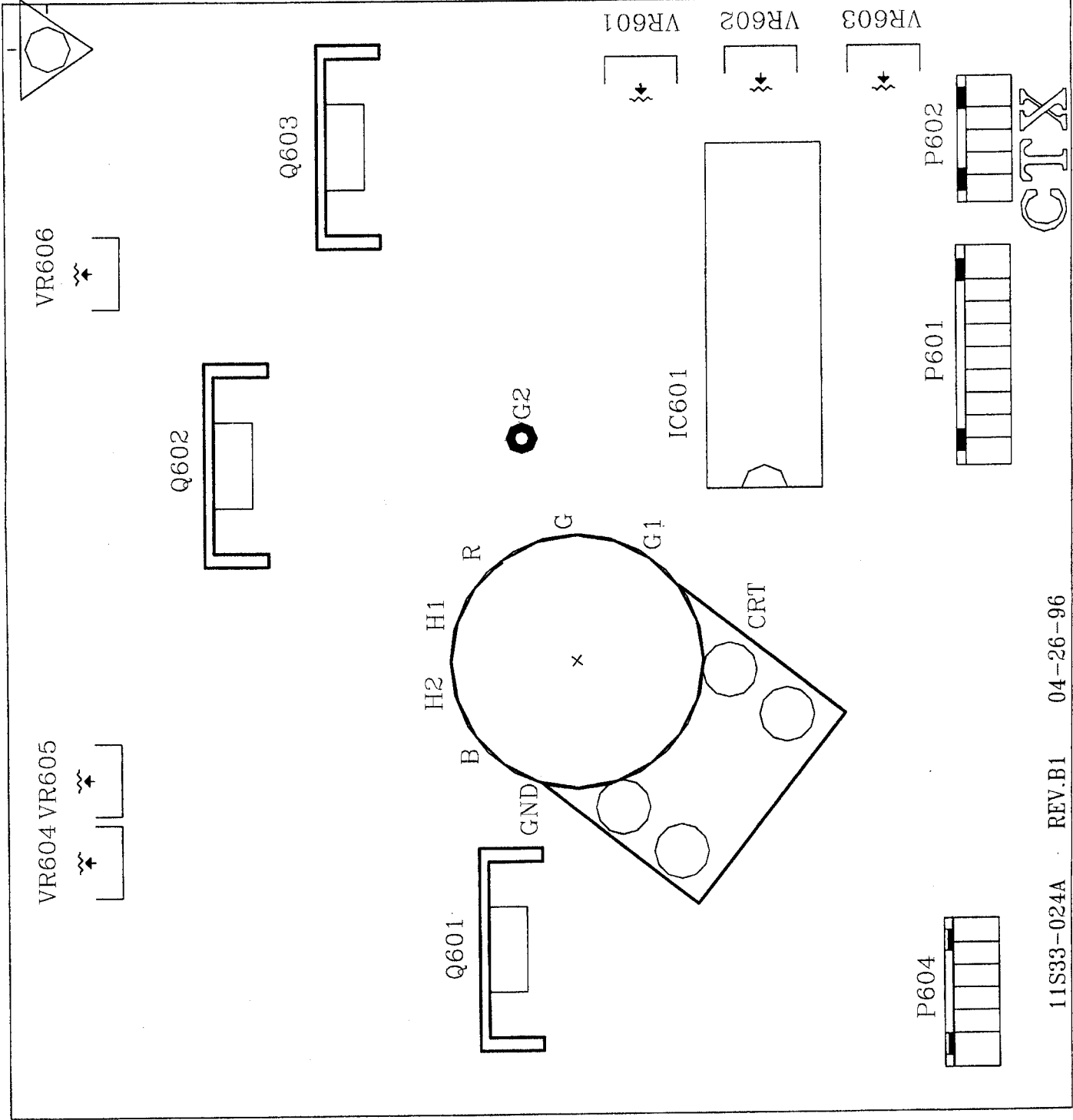
| NO. PARTS NO. | DESCRIPTION                 | QTY |
|---------------|-----------------------------|-----|
| 1             | 0820007000 FRONT CABINET    | 1   |
| 2             | 7146687400 NAME PLATE       | 1   |
| 3             | 71137530A0 POWER KNOB       | 1   |
| 4             | 7306147110 SPRING           | 1   |
| 5             | 7110014000 FUNCTION KEY     | 1   |
| 6             | 6724430080 SCREW T3x8       | 5   |
| 7             | 0813611350 DISK             | 1   |
| 8             | 08113283A0 SWIVEL BALL      | 1   |
| 9             | 08313293A0 SWIVEL BASE      | 1   |
| 10            | 7416345420 SUBBER FOOT      | 4   |
| 11            | 6724430080 SCREW T3x8       | 1   |
| 12            | 7416498340 CRT SPACER       | 4   |
| 13            | 6776214140 SCREW TPI 4x36   | 4   |
| 14            | 7516785650 HEAT SINK        | 3   |
| 15            | 6724426060 SCREW T2.6x6     | 4   |
| 16            | 7502143600 SHIELD COVER(B)  | 1   |
| 17            | 7503840000 SHIELD COVER(T)  | 1   |
| 18            | 7510004200 FBT HEAT SINK    | 1   |
| 19            | 6724430080 SCREW T3x8       | 6   |
| 20            | 6740030240 NUT              | 4   |
| 21            | 7516636230 HEAT SINK        | 1   |
| 22            | 7414452000 INSULATING SHEET | 3   |
| 23            | 7516673650 HEAT SINK        | 2   |
| 24            | 7414452000 INSULATING SHEET | 3   |
| 25            | 71166800A0 VR KNOB          | 2   |
| 26            | 7514615230 HEAT SINK        | 1   |
| 27            | 7516674540 HEAT SINK        | 1   |
| 28            | 7622137140 POWER BRACKET    | 1   |
| 29            | 6724F30100 SCREW T3x10      | 3   |
| 30            | 7635988440 CABLE CLAMP      | 1   |
| 31            | 08013330A0 REAR CABINET     | 1   |
| 32            | 6776040160 SCREW PT4x16     | 4   |
| 33            |                             | 1   |
| 34            |                             |     |
| 35            |                             |     |
| 36            |                             |     |

| NO. PARTS NO. | DESCRIPTION | QTY |
|---------------|-------------|-----|
| 37            |             |     |
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| NO. PARTS NO. | DESCRIPTION | QTY |
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| 73            |             |     |
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| 97            |             |     |
| 98            |             |     |
| 99            |             |     |
| 100           |             |     |

1451D1 EXPLODED VIEW





CTX

VR601 VR602

VR603

Q611

Q631

Q651

H2 H1 R G2

GND G G1

IC601

VR611

VR612

VR613

P603

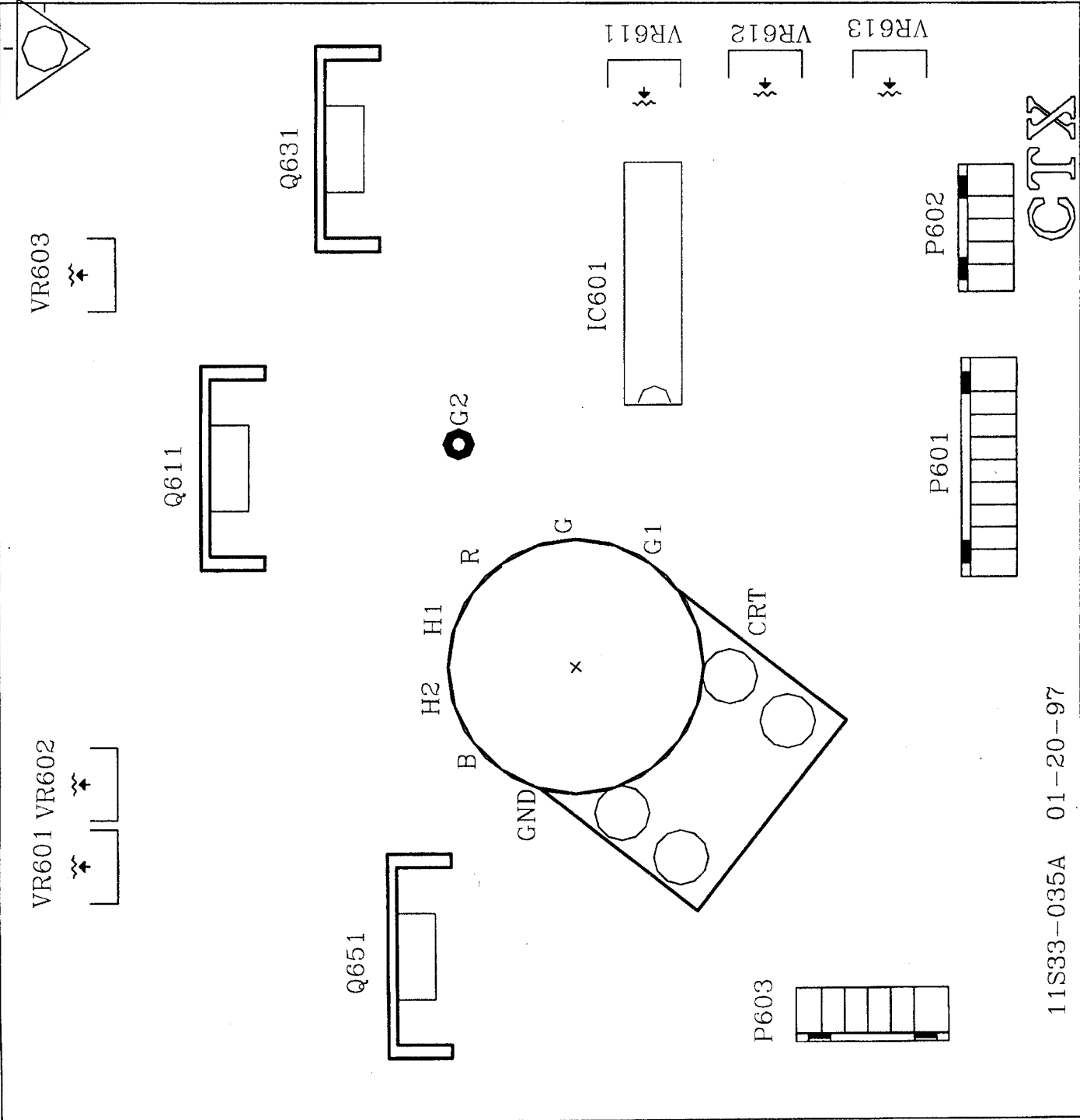
P601

P602

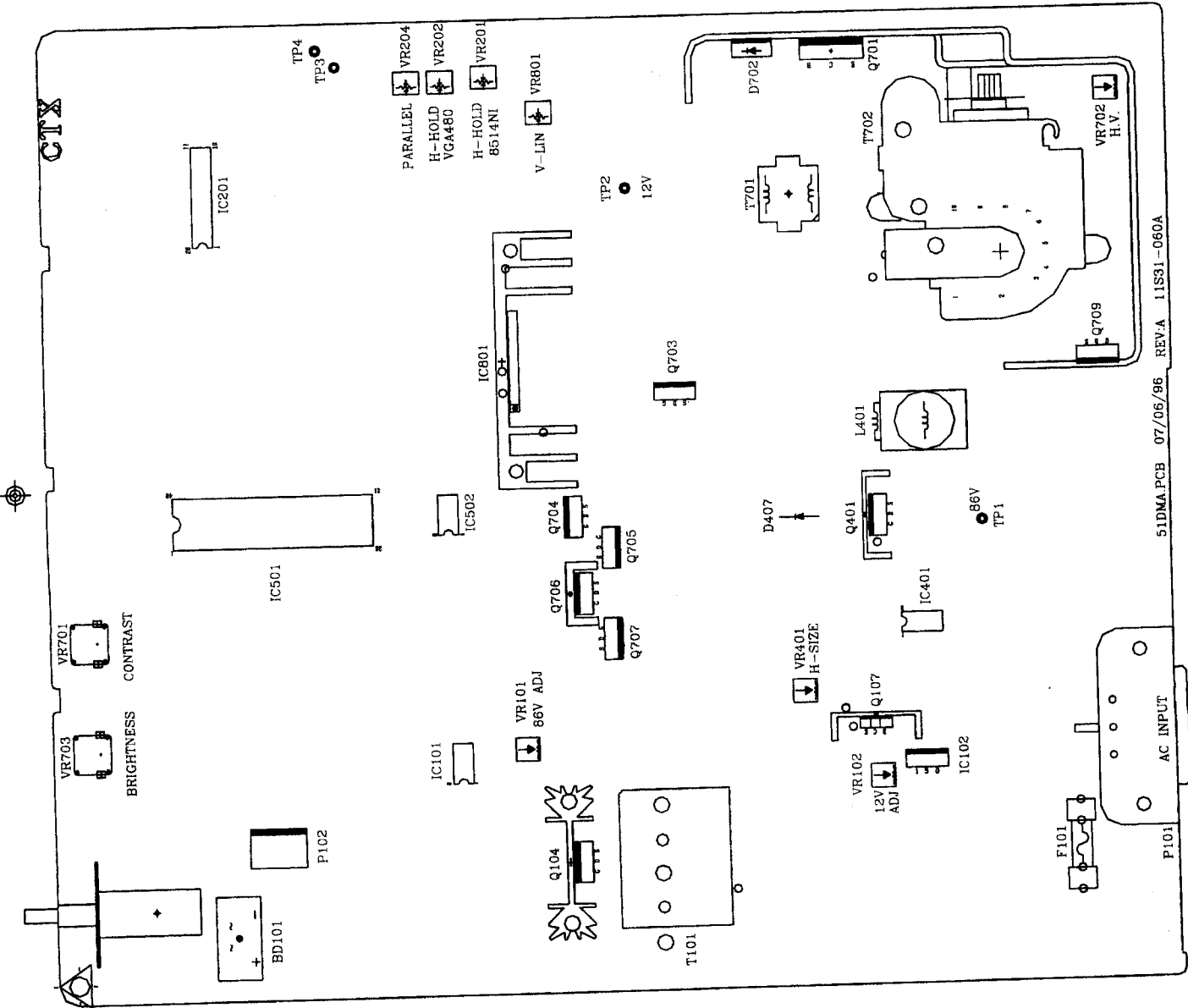
CRT

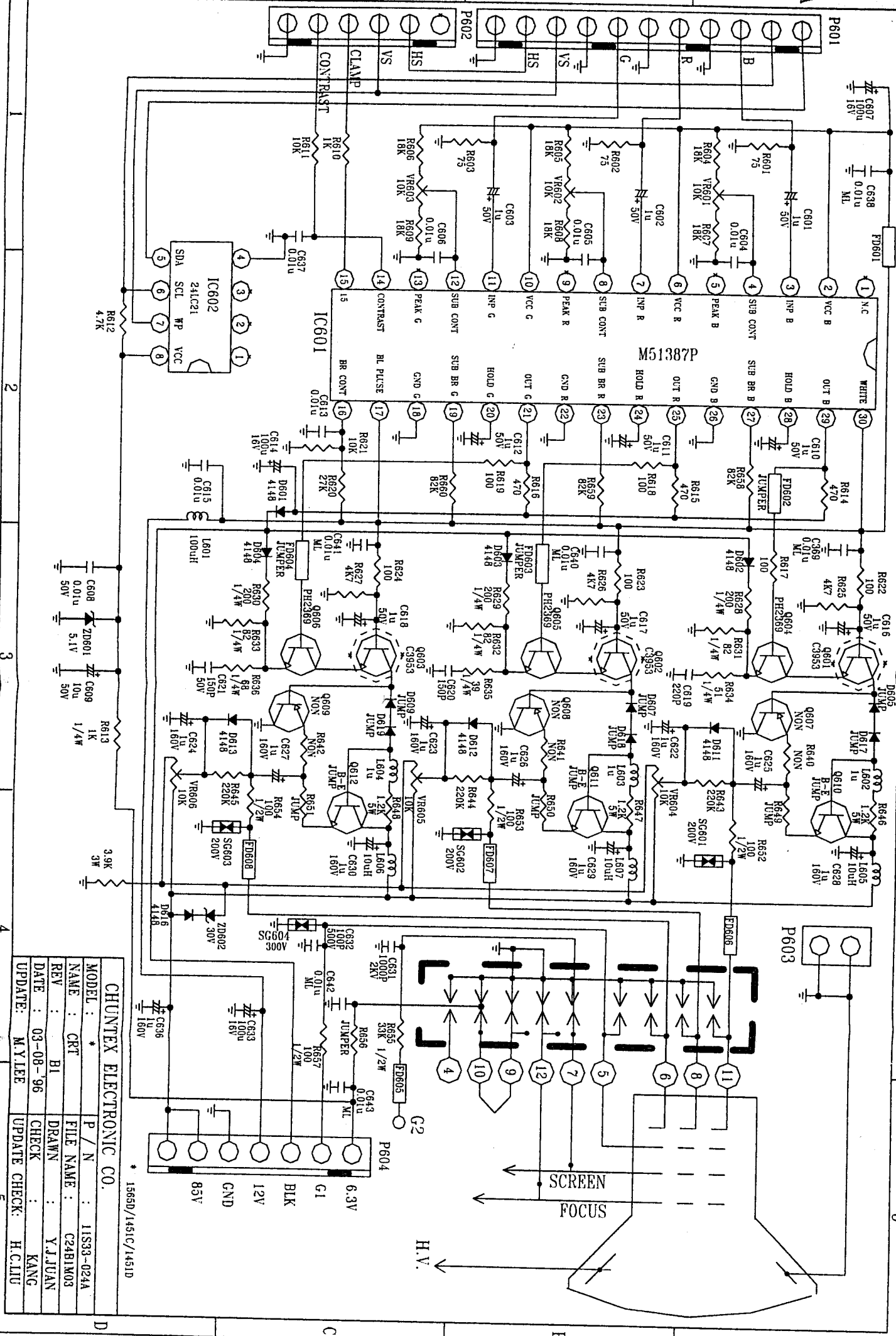
CTX

11S33-035A 01-20-97



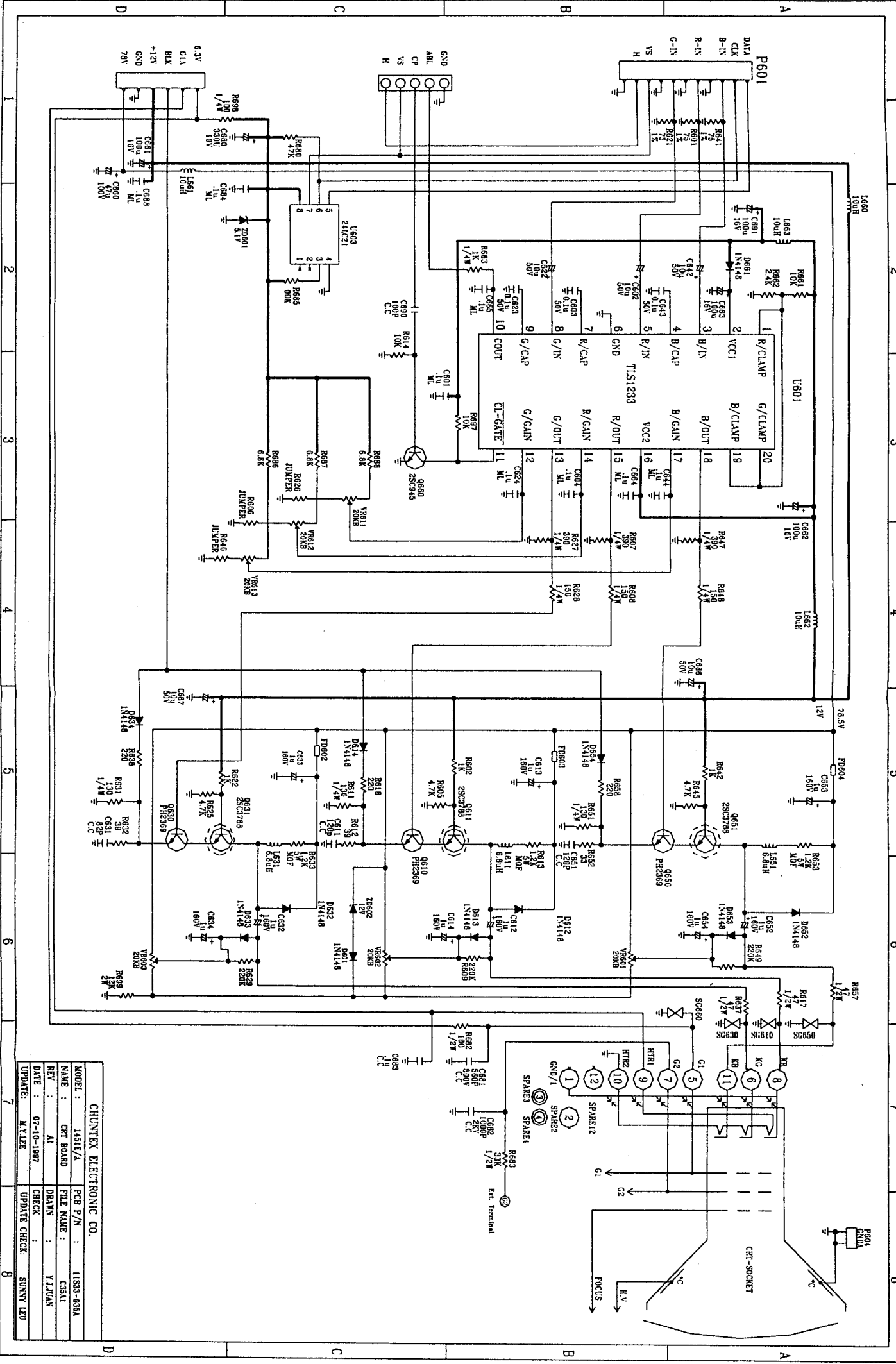
CTX





CHUNTEX ELECTRONIC CO. \* 1565D/1451C/1451D

|          |          |                |            |
|----------|----------|----------------|------------|
| MODEL :  | *        | P / N :        | 11S33-024A |
| NAME :   | CRT      | FILE NAME :    | C24B1M03   |
| REV :    | B1       | DRAWN :        | Y.J.JUAN   |
| DATE :   | 03-08-96 | CHECK :        | KANG       |
| UPDATE : | M.Y.LEE  | UPDATE CHECK : | H.C.LIU    |



CHUNTEX ELECTRONIC CO.

|          |            |                |            |
|----------|------------|----------------|------------|
| MODEL :  | 1451E/A    | PCB P/N :      | 11503-005A |
| NAME :   | CRT BOARD  | FILE NAME :    | CS3A1      |
| REV :    | A1         | DESIGN :       | YJ10JAN    |
| DATE :   | 07-10-1987 | CHECK :        |            |
| UPDATE : | M.Y.LEE    | UPDATE CHECK : | SUNNY LEO  |