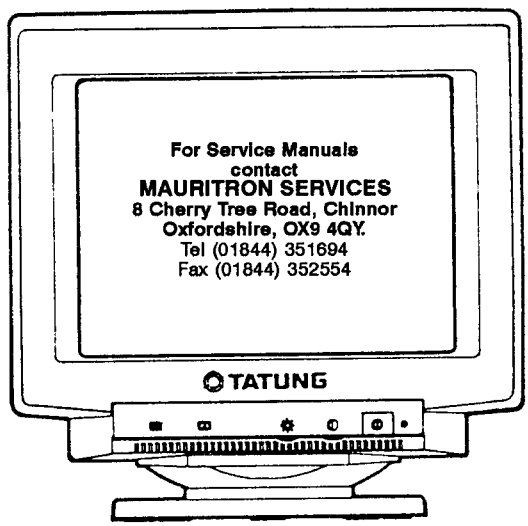
Service Manual

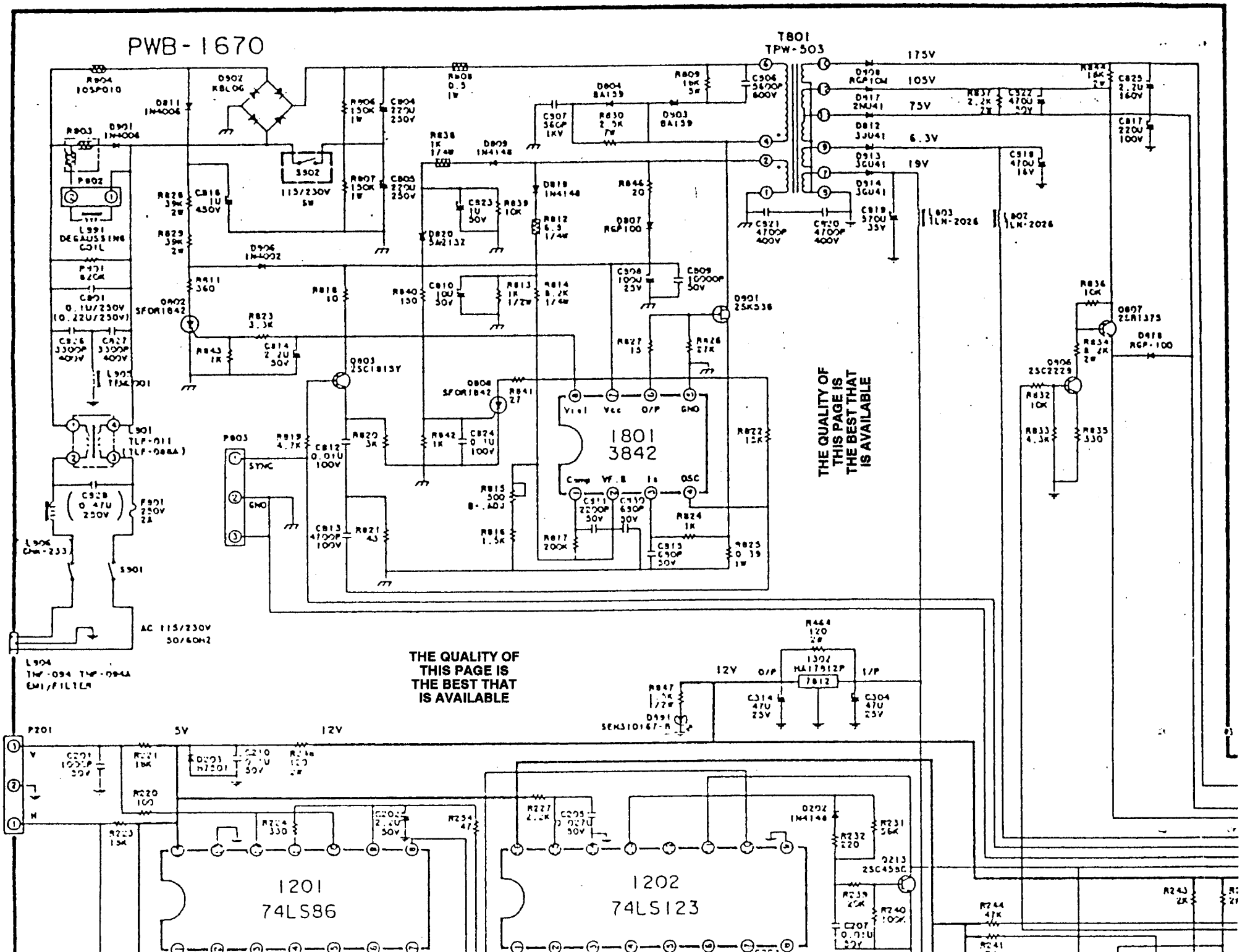
14" ULTRA SUPER VGA

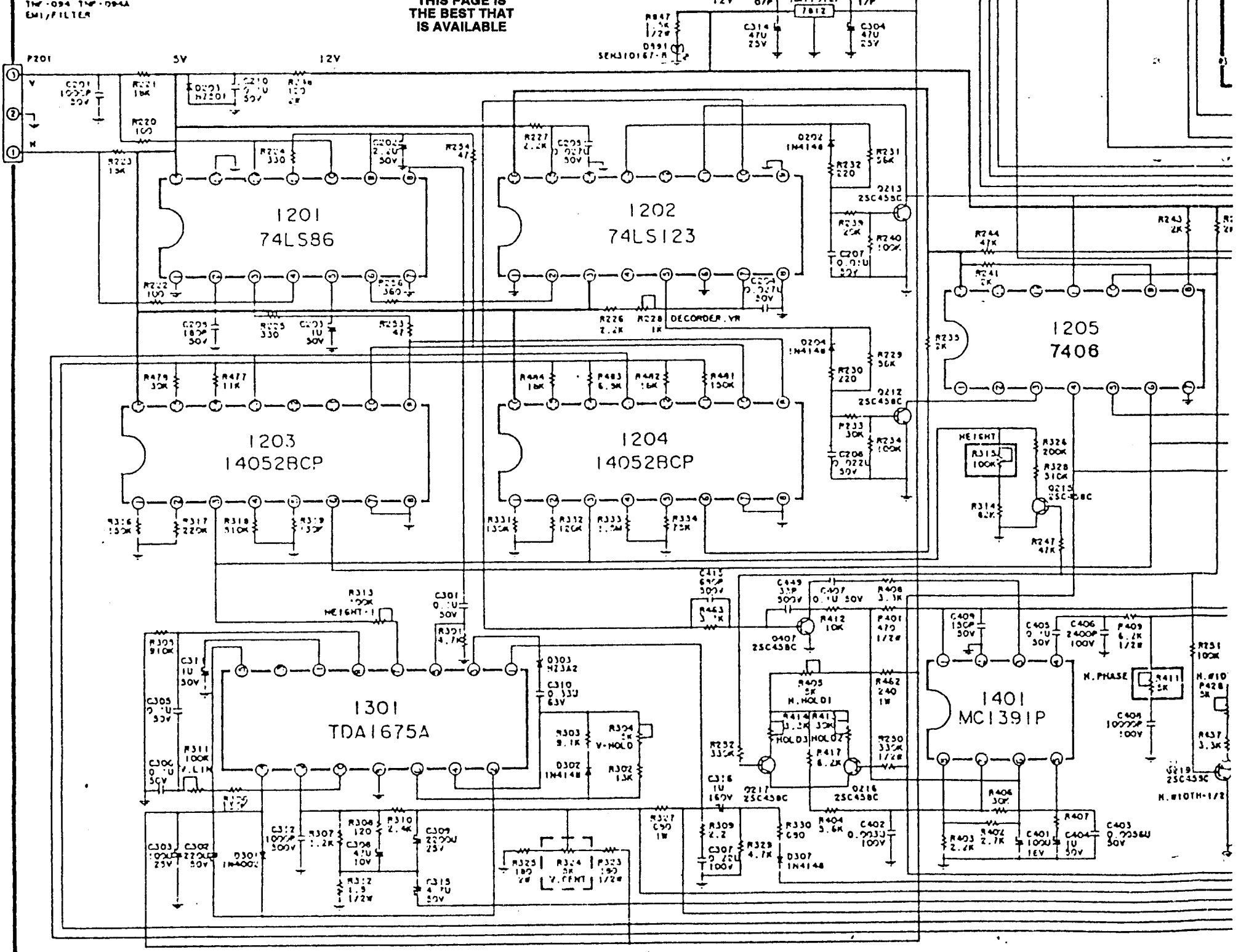
COLOR MONITOR

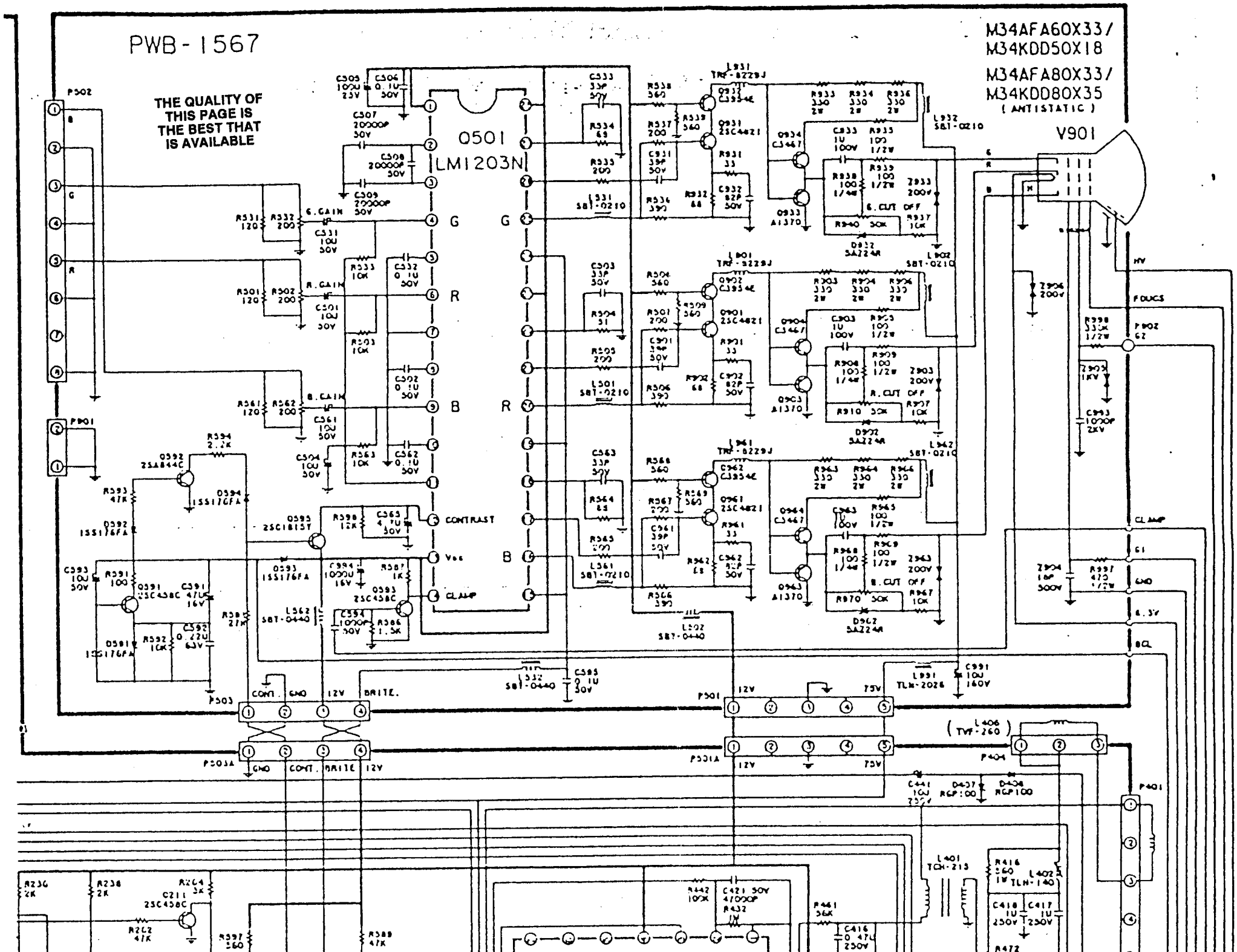
MODEL: CM14UAS/14UAE/14UAR

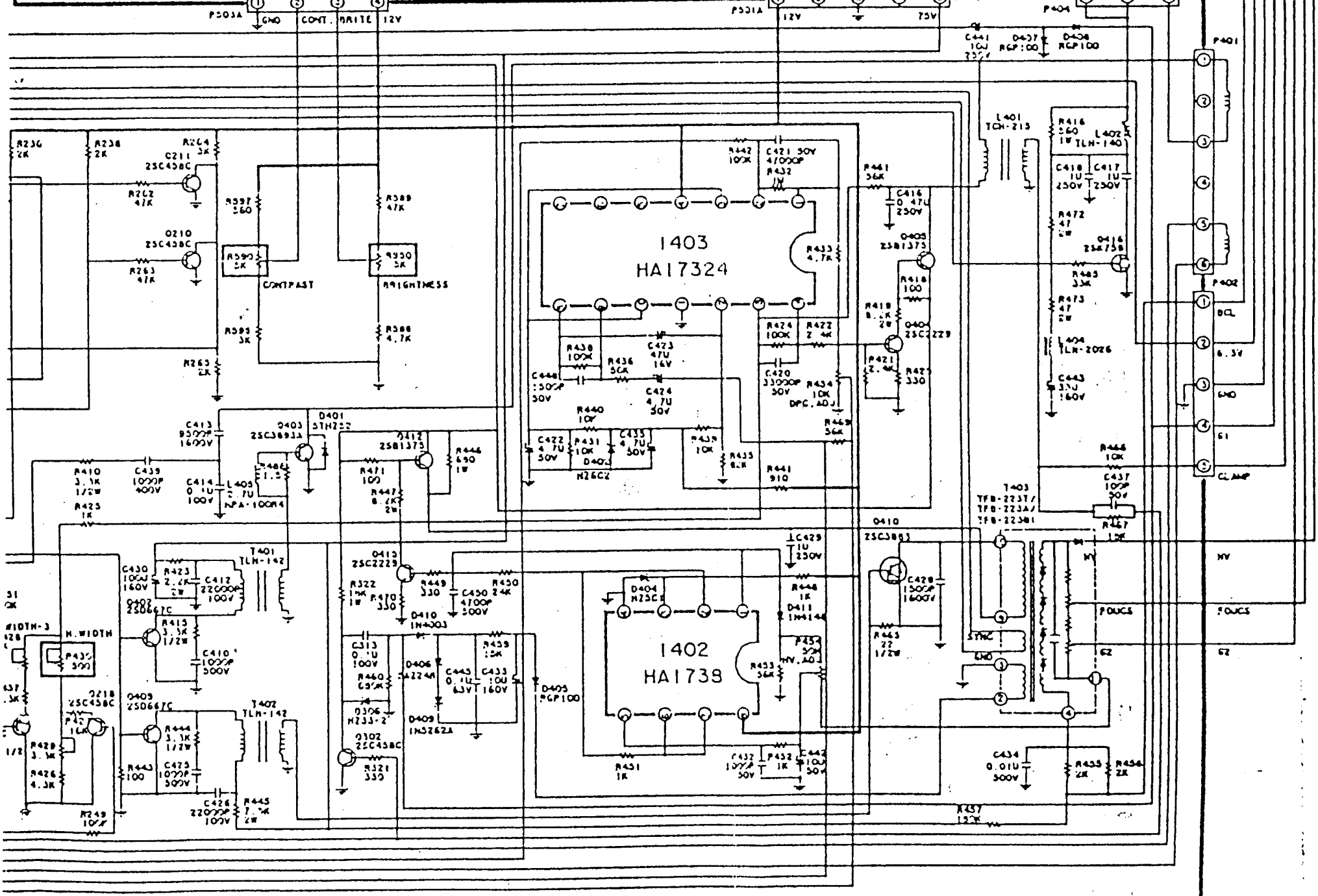


TATUNG


PWB-1670
T801
TPW-503
175V
105V
75V
6.3V
19V
1801
3842
1201
74LS86
1202
74LS123
THE QUALITY OF THIS PAGE IS THE BEST THAT IS AVAILABLE
THE QUALITY OF THIS PAGE IS THE BEST THAT IS AVAILABLE
AC 115/230V 50/60HZ
L904 TNF-094 TNF-094A EMI/FILTER
DEGAUSSING COIL
P201
5V
12V

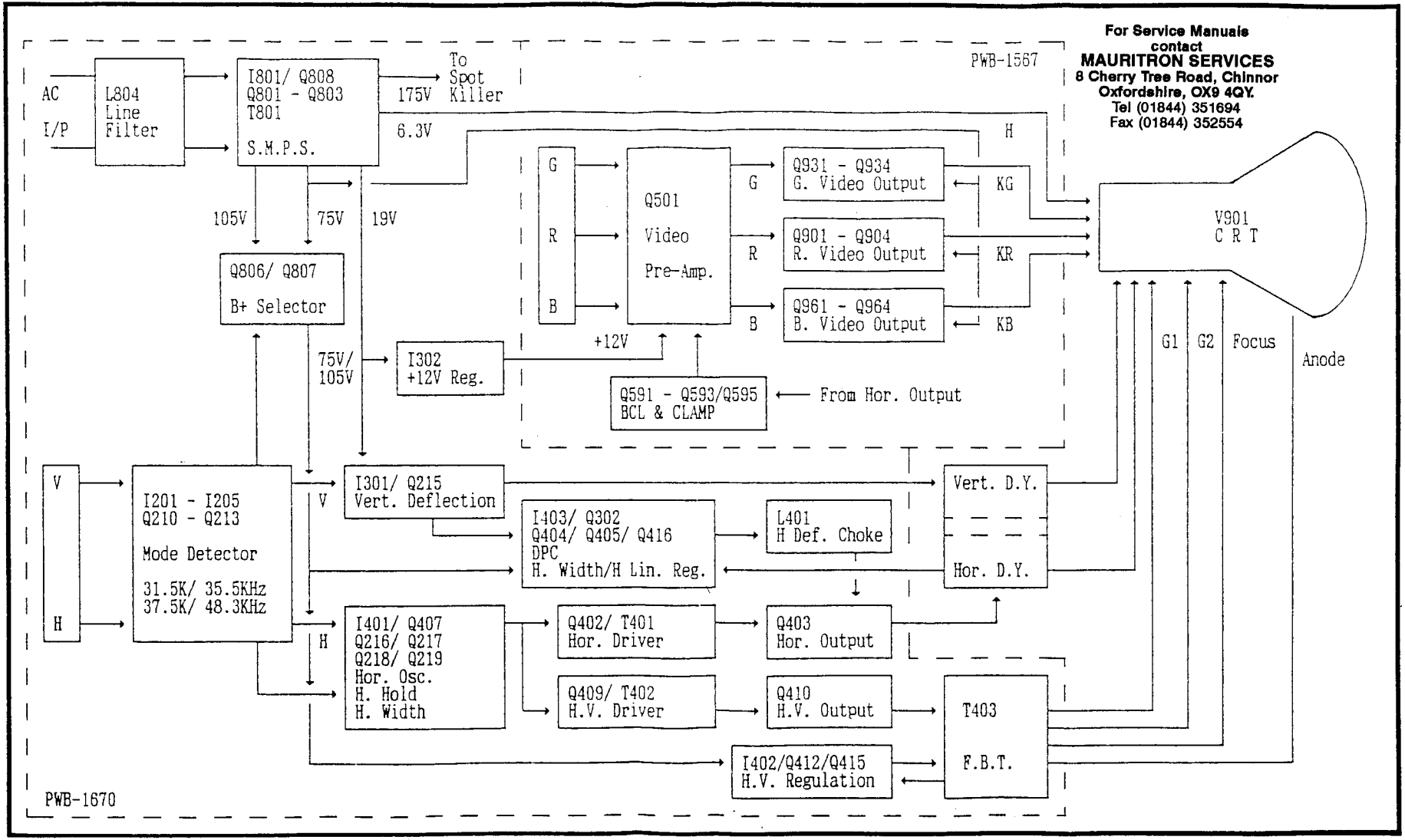



PWB - 1567
M34AFA60X33/
M34KDD50X18
M34AFA80X33/
M34KDD80X35
(ANTISTATIC)
THE QUALITY OF THIS PAGE IS THE BEST THAT IS AVAILABLE
0501
LM1203N
V901
CONTRAST
Vcc
CLAMP
G
R
B
CONT.
GND
12V
BRITE.
75V
FOCUS
HV
CL
BCL
6.3V
G.CUT OFF
R.CUT OFF
B.CUT OFF
TNF-8229J
SBT-0210
SBT-0440
TLN-2026
TLN-215
TLN-140
TNF-260



THE QUALITY OF THIS PAGE IS THE BEST THAT IS AVAILABLE

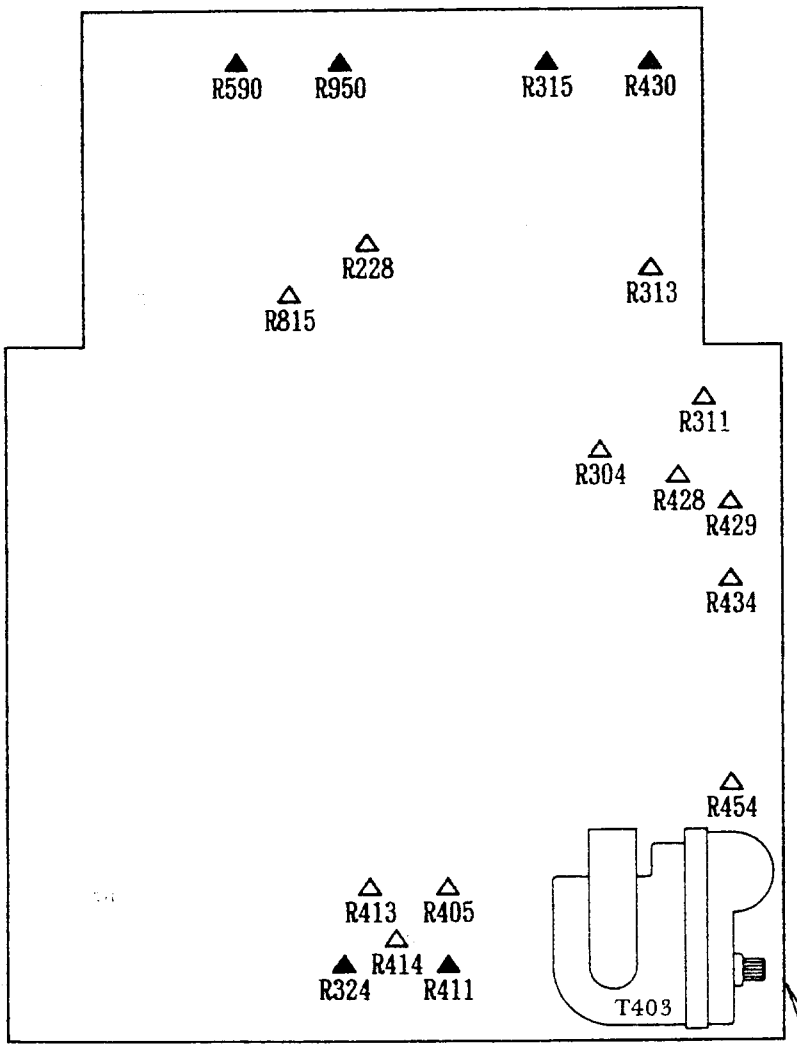
BLOCK DIAGRAM



7. ADJUSTMENT

Service Adjustment Control Locations

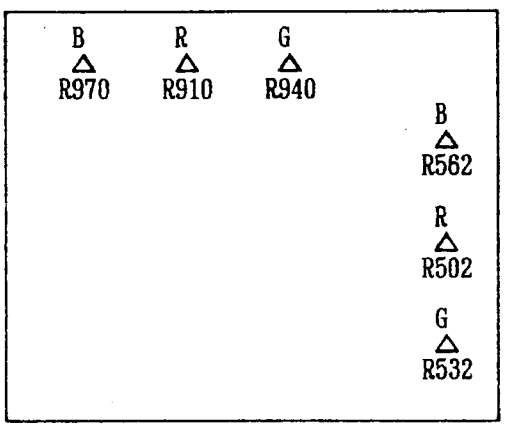
MAIN BOARD (PARTS SIDE VIEW) PWB-1670



▲R590 – Contrast Control
▲R950 – Brightness Control
▲R315 – V-Height
▲R430 – H-Width
▲R324 – V-Center
▲R411 – H-Phase
ΔR228 – Decoder
ΔR815 – B⁺ Adj.
ΔR313 – V-Height
ΔR311 – V-Line
ΔR304 – V-Hold (Fv=49.6Hz)
ΔR428 – H-Width 3 (Fh=45~50KHz)
ΔR429 – H-Width 1 (Fh=31.5KHz)
ΔR434 – DPC Adj.
ΔR454 – H.V. Adj.
ΔR413 – H-Hold 2 (Fh=35~38KHz)
ΔR405 – H-Hold 1 (Fh=31.5KHz)
ΔR414 – H-Hold 3 (Fh=45~50KHz)

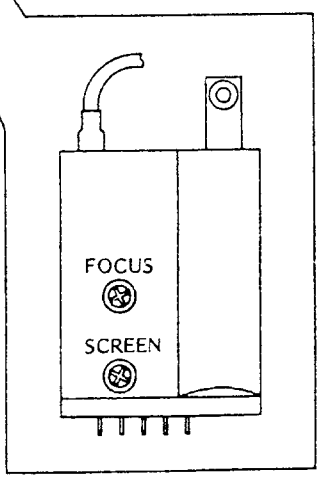
▲ : External Adj.
Δ : Internal Adj.

CRT DRIVE BOARD (PARTS SIDE VIEW) PWB-1567



ΔR970 – B. Cut-Off
ΔR910 – R. Cut-Off
ΔR940 – G. Cut-Off
ΔR562 – B. Drive
ΔR502 – R. Drive
ΔR532 – G. Drive

(Fig. 7-2)



(Fig. 7-1)

Note: The adjustment data with tolerance is only for optimum performance setting.

7-1 B^+ Output Voltage Adjustment

a) Apply a VGA signal with full-white pattern to the unit.
b) Turn BRIGHTNESS control to center detent, and turn CONTRAST control fully clockwise.
c) Adjust B^+ ADJ. (R815) for the voltage across C817 to be 75 ± 1V.
d) Verify that the voltage across C822 is 104 ± 2V.
e) Verify that the voltage across C819 is 19 ± 2V.
f) Verify that the voltage across C818 is 6.2 ± 0.3V.

7-2 H. Hold Adjustment

a) Cut-off the horizontal sync input by connecting a jump lead from the collector of Q407 to ground.
b) H. Hold 1 (Fh = 31.5 KHz) Adjustment
   (1) Apply a VGA signal with Fh = 31.5 KHz crosshatch pattern to the unit.
   (2) Adjust H. Hold 1 (R405) to obtain a stable picture.
c) H. Hold 2 (Fh = 35.2~35.5 KHz) Adjustment
   (1) Apply a VGA signal with Fh = 35.2~35.5 KHz crosshatch pattern to the unit.
   (2) Adjust H. Hold 2 (R413) to obtain a stable picture.
d) H. Hold 3 (Fh = 48 KHz) Adjustment
   (1) Apply a VGA signal with Fh = 48 KHz crosshatch pattern to the unit.
   (2) Adjust H. Hold 3 (R414) to obtain a stable picture.
e) Disconnect the jump lead from the collector of Q407.

7-3 H. Phase Adjustment

a) Apply a VGA signal with crosshatch pattern to the unit.
b) Adjust H. PHASE (R411) to set the picture on the horizontal center of the screen.

7-4 High Voltage Adjustment

a) Apply a VGA signal with full white pattern to the unit.
b) Turn BRIGHTNESS control to center detent, and turn CONTRAST control fully clockwise.
c) Adjust H.V. ADJ. (R454) for the high voltage to be 23.5 ± 1 KV.

7-5 Decoder Adjustment

a) Apply a VGA signal with full-white pattern to the unit.
b) Connect an oscilloscope probe between D204 cathode and ground.
c) Adjust DECODER (R228) to obtain a pulse width of Tp = 2.0~2.5 μS.

7-6 H. Width Adjustment

a) H. Width 1 (Fh = 31.5 KHz) Adjustment
   (1) Apply a VGA signal with Fh = 31.5 KHz crosshatch pattern to the unit.
   (2) Turn H. WIDTH control (R430) to center detent.
   (3) Adjust H. WIDTH 1 control (R429) for horizontal width to be 246 mm.
b) H. Width 3 (Fh = 48 KHz) Adjustment
   (1) Apply a VGA signal with Fh = 48 KHz crosshatch pattern to the unit.
   (2) Turn H. WIDTH control (R430) to center detent.
   (3) Adjust H. WIDTH 3 control (R428) for horizontal width to be 246 mm.

7-7 V. Hold Adjustment

a) Apply a VGA signal with Fv = 49.6 Hz pattern to the unit.
b) Adjust V. HOLD control (R304) to obtain a stable picture.

7-8 V. Linearity Adjustment

a) Apply a VGA signal with crosshatch pattern to the unit.
b) Adjust V. LINE. control (R311) to equalize the length of center to top edge and that of center to bottom edge.

7-9 V. Center Adjustment

a) Apply a VGA signal with crosshatch pattern to the unit.
b) Adjust V. CENTER control (R324) to set the picture on the vertical center of the screen.

7-10 V. Height Adjustment

a) Apply a VGA signal with crosshatch pattern to the unit.
b) Turn V. HEIGHT control (R315) to center detent.
c) Adjust V. HEIGHT-1 control (R313) for vertical height to be 185 mm.

7-11 Dynamic Pincushion Correction Adjustment

a) Apply a VGA signal with crosshatch pattern to the unit.
b) Adjust DPC ADJ. (R434) to correct the side pincushion for minimum geometric distortion.

7-12 Focus Adjustment

a) Apply a VGA signal with crosshatch pattern to the unit.
b) Adjust FOCUS ADJ. (on T403) to get the best overall focus.

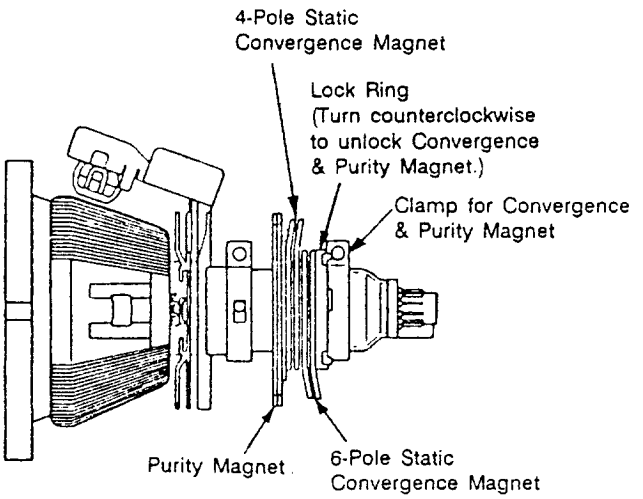
7-13 White Balance Adjustment

a) Apply a test pattern with video signal cut-off to the unit.
b) Turn BRIGHTNESS control to fully clockwise.
c) Preset R. CUT OFF (R910), G. CUT OFF (R940) and B. CUT OFF (R970) to the position of approximately 15 degrees clockwise.
d) Use a Photo meter to set the screen center brightness to 1.5 FL (5.2 cd/m^2) by adjusting the SCREEN ADJ. (on T403).
e) Use a Color analyzer to set the color coordinate to X = 0.281, Y = 0.311 (for American area) or X = 0.313, Y = 0.329 (for European area) by adjusting the R. CUT OFF (R910) and G. CUT OFF (R940).
f) Apply a VGA signal with 50mm × 50mm green square pattern to the unit.
g) Turn BRIGHTNESS control to center detent, and turn CONTRAST control fully clockwise.
h) Use a Photo meter to set the screen center brightness up to 35 FL (120 cd/m^2) by adjusting the G. DRIVE (R532).
i) Apply a VGA signal with 50mm × 50mm white square pattern to the unit.
j) Use a Photo meter to set the screen center brightness up to 15 FL (51.4 cd/m^2) by adjusting the CONTRAST control.
k) Use a Color analyzer to set the color coordinate up to X = 0.281, Y = 0.311 (for American area) or X = 0.313, Y = 0.329 (for European area) by adjusting the B. DRIVE (R562) and R. DRIVE (R502).

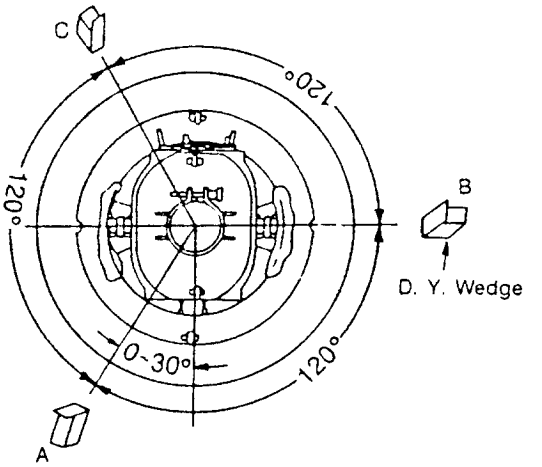
7-14 Convergence Adjustment

NOTE 1: For a unit with new ITC, adjustment for convergence may not be necessary.
2: Prior to adjusting for convergence, the above alignment procedures must be completed.

a) Apply a VGA signal with full-white pattern to the unit.
b) Turn BRIGHTNESS control to center detent.
c) Use a Photo meter to set the screen center brightness up to 20 FL (68.5 cd/m^2) by adjusting the CONTRAST control.
d) Apply a VGA signal with crosshatch pattern to the unit.
e) Loosen the convergence magnet lock ring with a screw driver.
f) Converge the red and blue lines at the center of the screen by rotating the two tabs of the 4-pole static convergence magnet.
g) Align the converged red/blue lines with the green lines at the center of the screen by rotating the two tabs of the 6-pole static convergence magnet.
h) Tighten the convergence magnet lock ring with a screw driver.



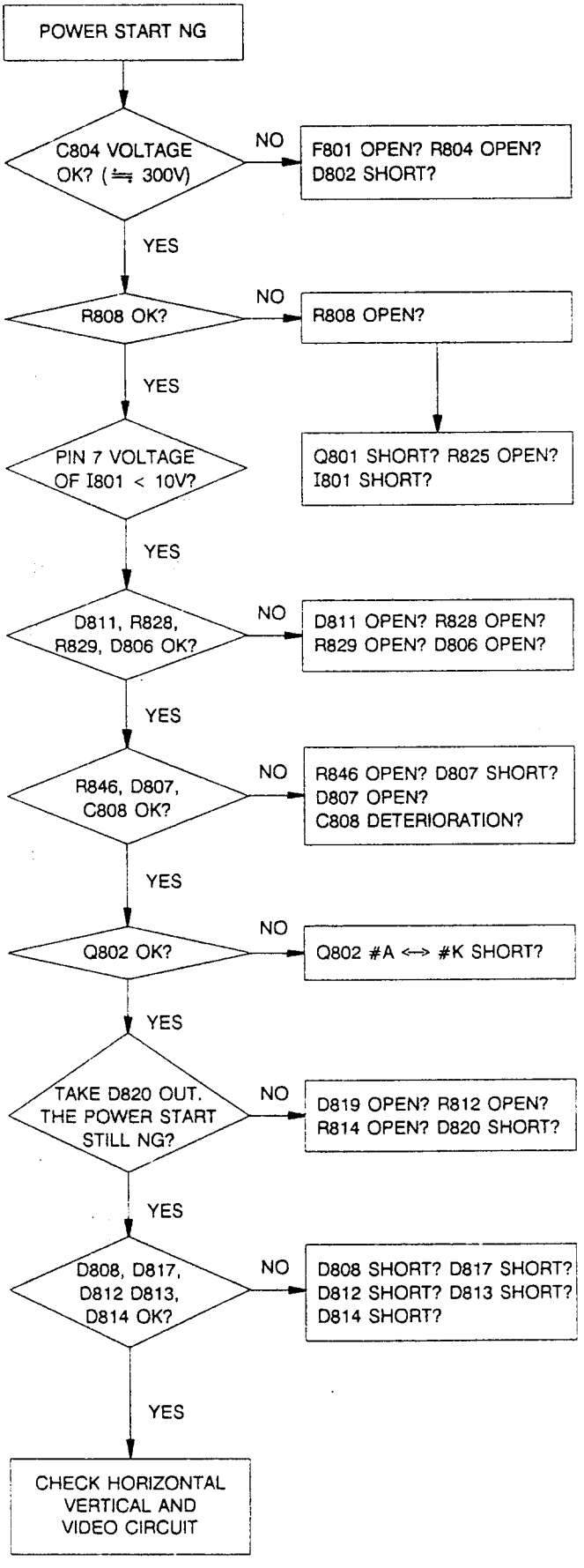
(Fig. 7-3)



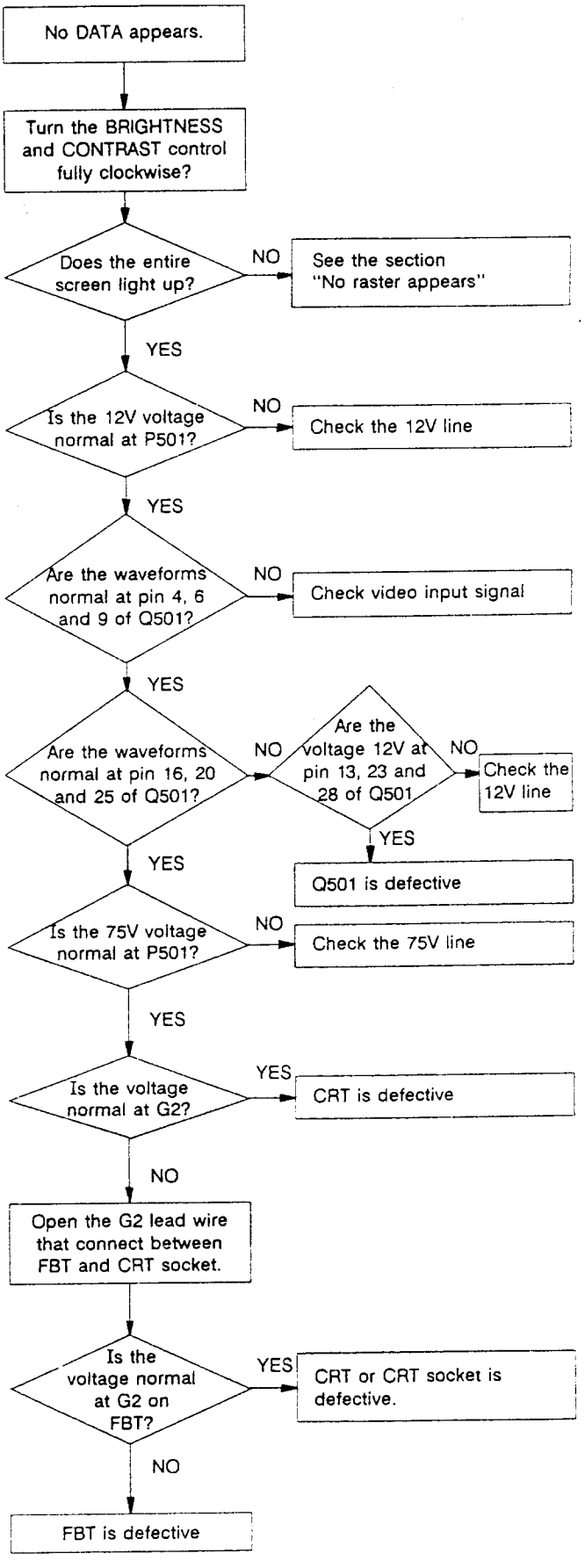
(Fig. 7-4)

8. TROUBLESHOOTING FLOW CHART

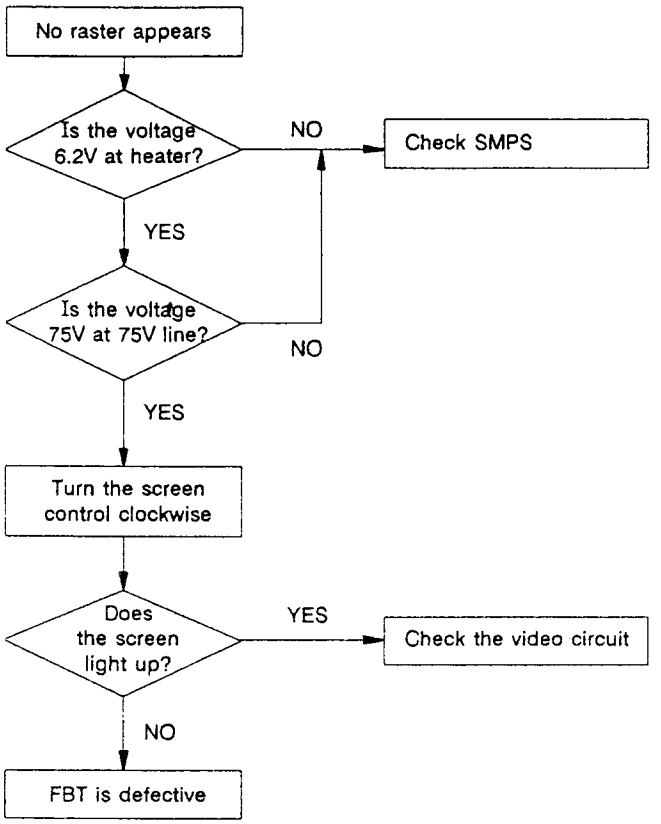
(1)



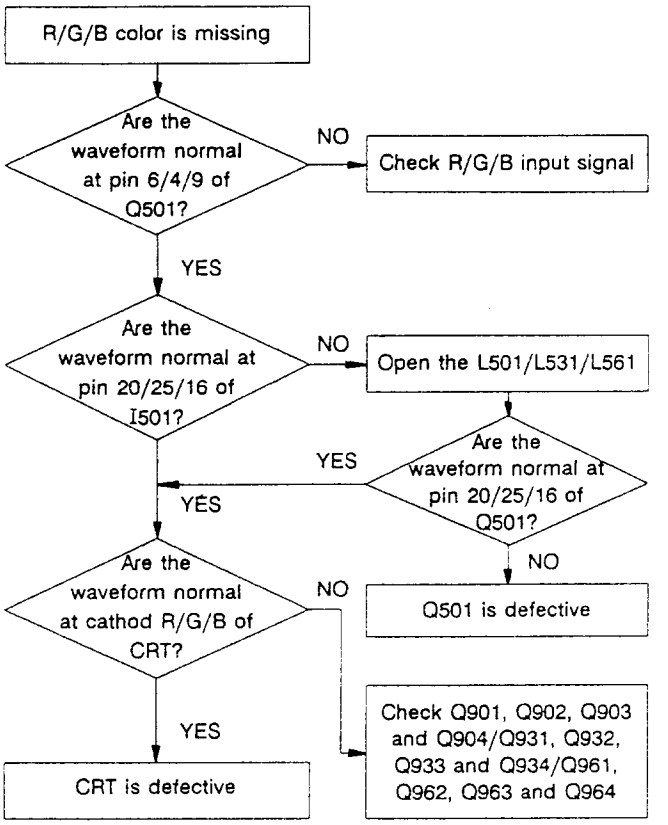
(2)



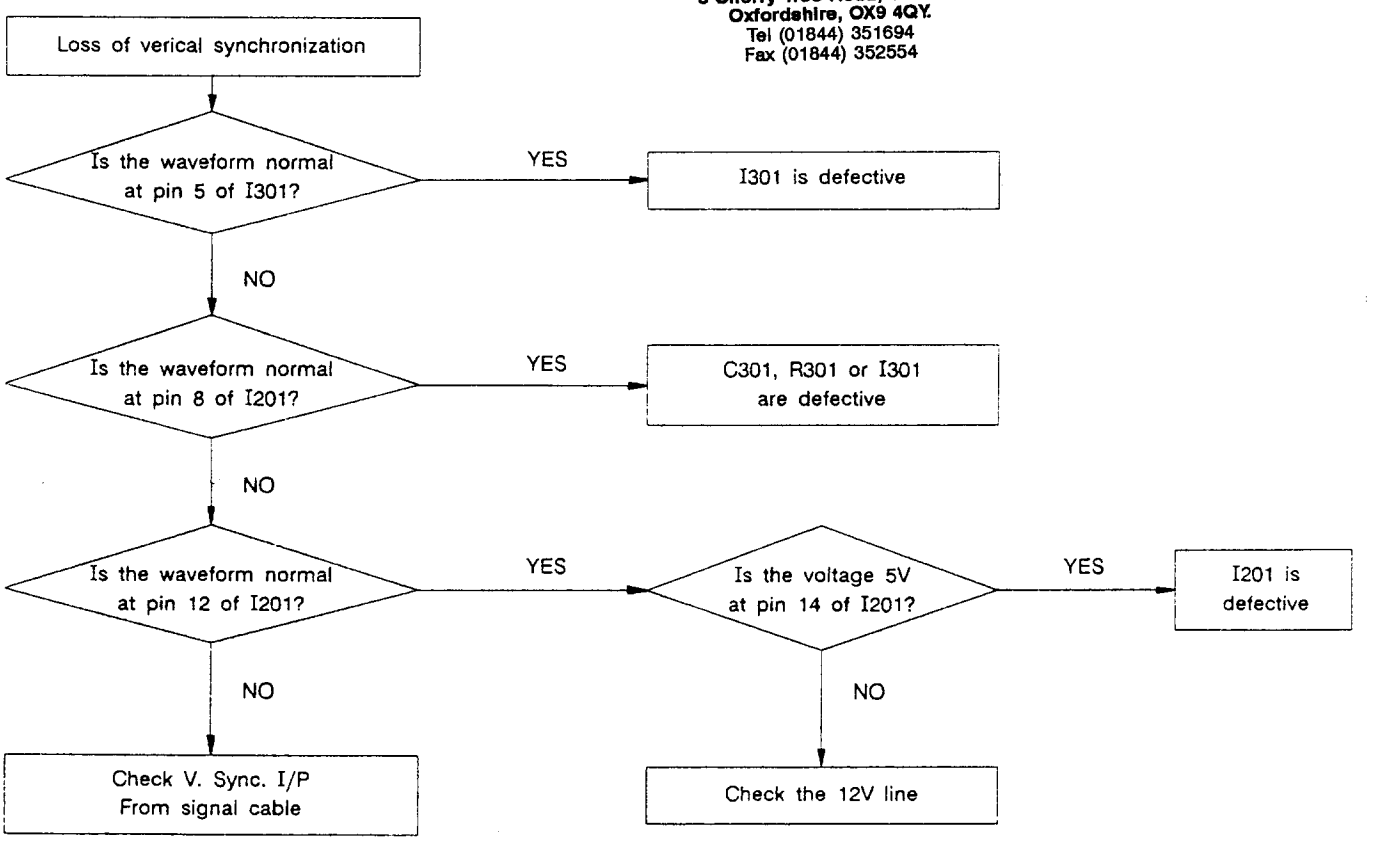
(3)



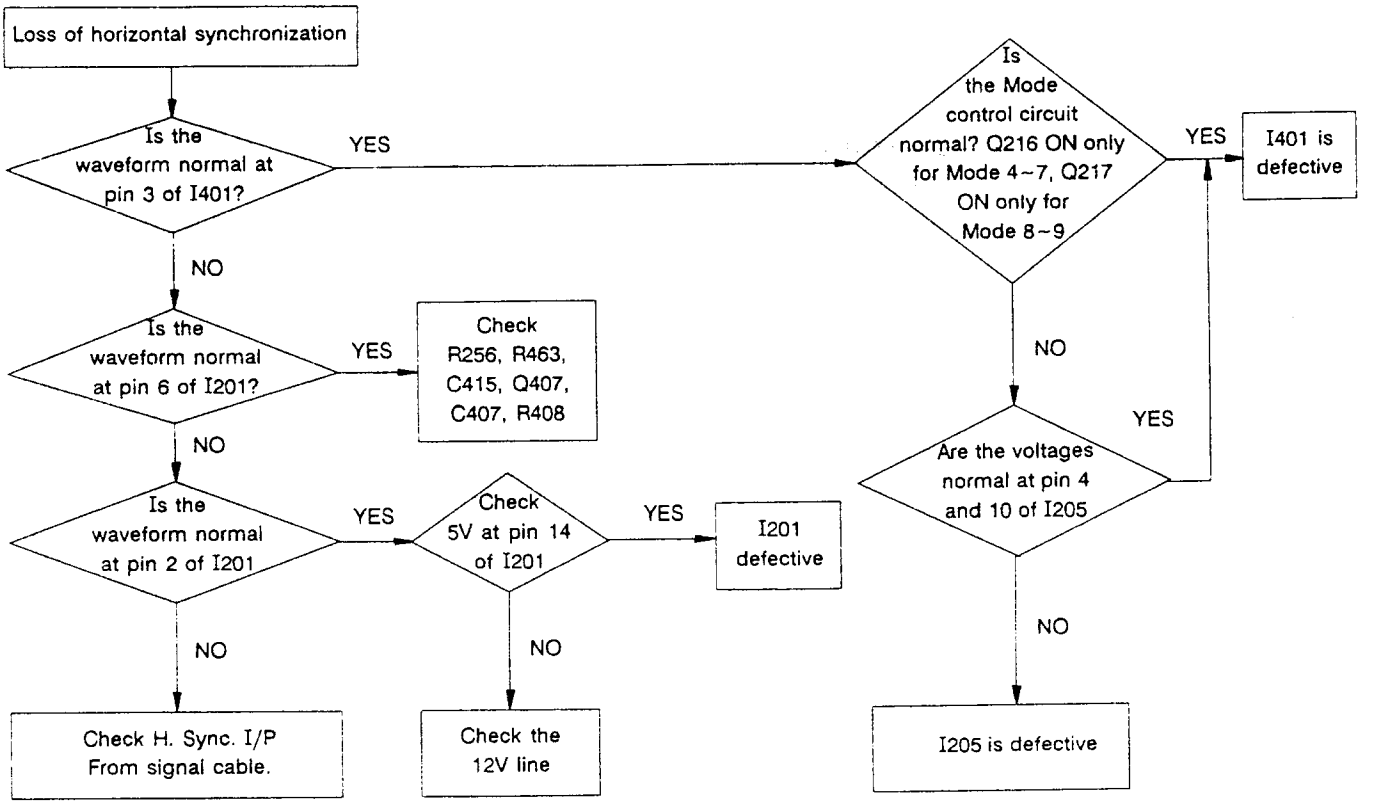
(4)



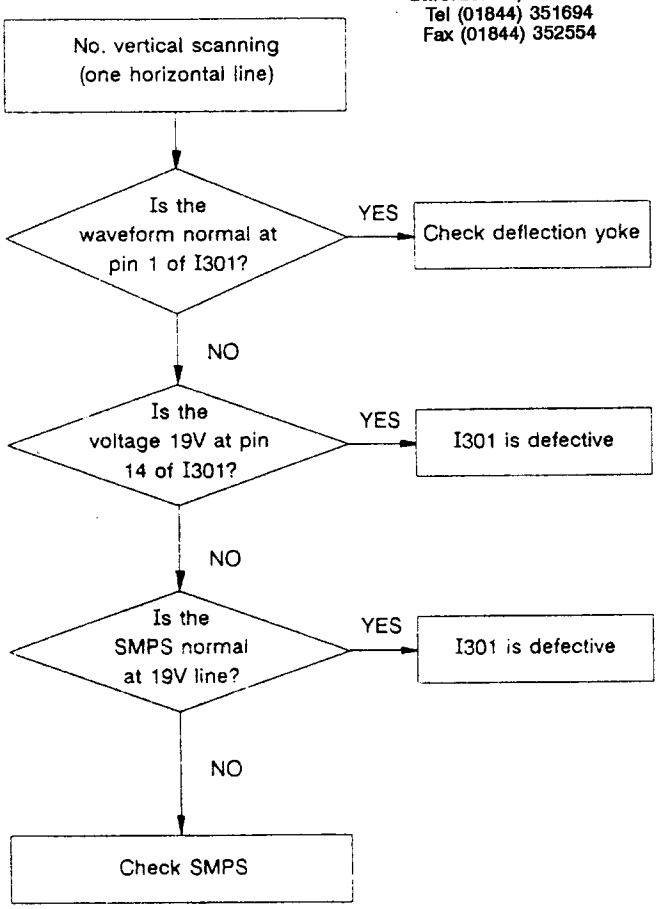
(5)



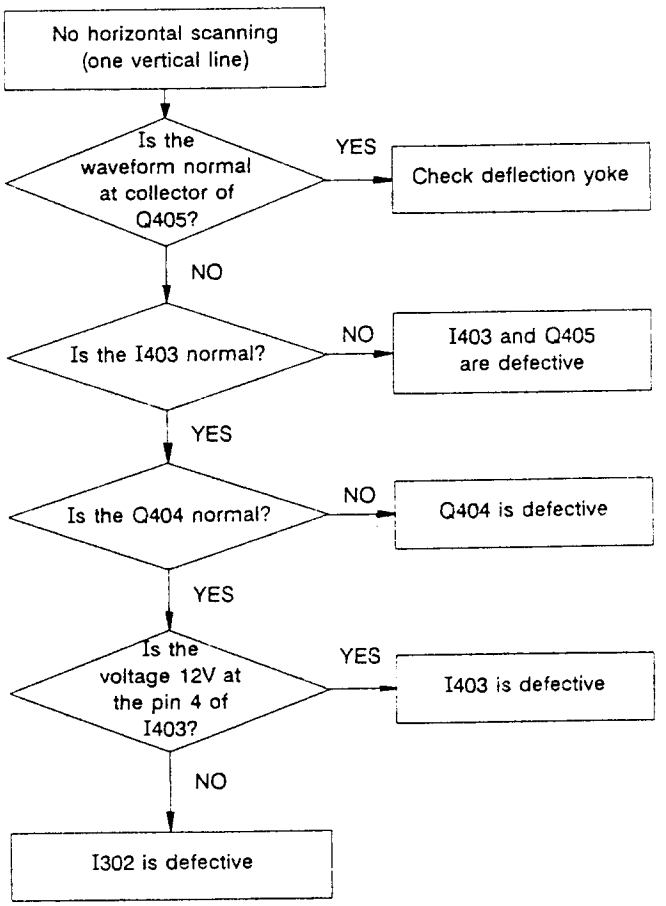
(6)



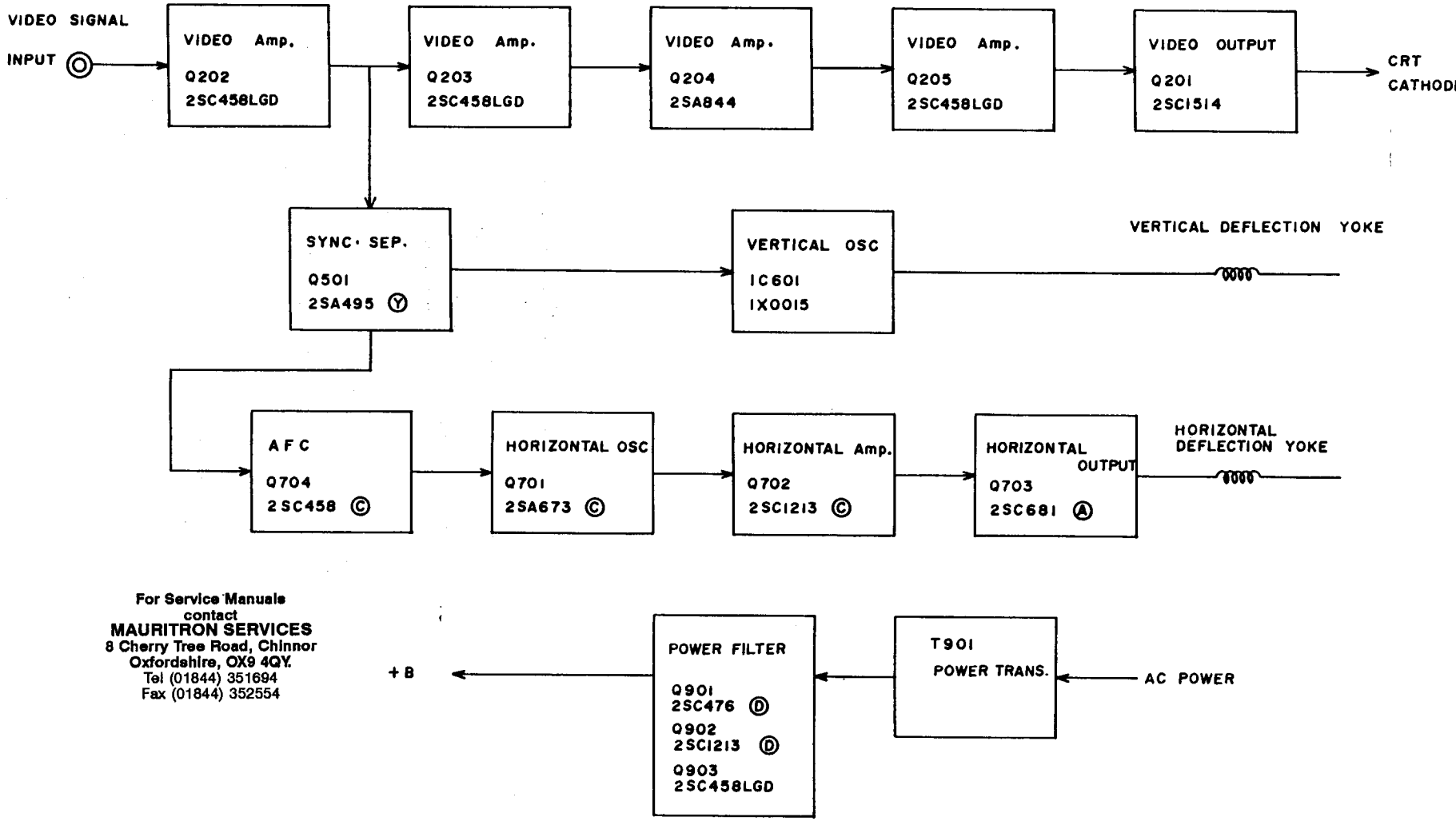
(7)



(8)



BLOCK DIAGRAM (MONITOR)



For Service Manuals
contact
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554