

LG

COLOR MONITOR

SERVICE MANUAL

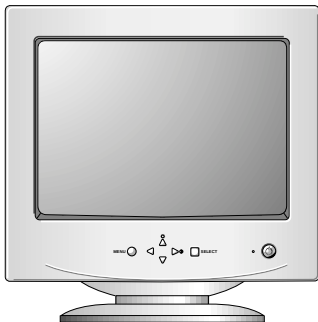
CHASSIS NO. : CA-111

FACTORY MODEL: EB990G

MODEL: StudioWorks E900B (EB990G-EL)
StudioWorks E900B (EB990G-ES)
FLATRON E900B (EB990G-EL)

CAUTION

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



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SPECIFICATIONS

1. PICTURE TUBE

Size	: 19 inch (Flat Slot Mask)
Deflection Angle	: 90°
Neck Diameter	: 29.1 mm
Phosphor	: P22
Slot Pitch	: 0.25 mm
Face Treatment	: Anti-Glare

2. SIGNAL

2-1. Horizontal & Vertical Sync

- 1) Input Voltage Level : Low= $\leq 0.8V$, High= $\geq 2.1V$
- 2) Sync Polarity : Positive or Negative

2-2. Video Input Signal

- 1) Voltage Level : 0~0.7 Vp-p
 - a) Color 0, 0 : 0 Vp-p
 - b) Color 7, 0 : 0.467 Vp-p
 - c) Color 15, 0 : 0.7 Vp-p
- 2) Input Impedance : 75 Ω
- 3) Video Color : R, G, B Analog
- 4) Signal Format : Refer to the Timing Chart

2-3. Signal Connector

15 Pin D-Sub Connector

2-4. Scanning Frequency

Horizontal	: 30~96 kHz
Vertical	: 50~160 Hz

3. POWER SUPPLY

AC 100~240V, 50/60HZ, 2.5A Max
AC 200~240V, 50Hz, 1.5A Max.(PFC version)

3-2. Power Consumption

MODE	H/V SYNC	POWER CONSUMPTION	LED COLOR
MAX		less than 120W	GREEN
NORMAL (ON)	ON/ON	less than 79W	GREEN
STAND-BY	OFF/ON	less than 8W	ORANGE
SUSPEND	ON/OFF	less than 8W	
OFF	OFF/OFF	less than 3W	ORANGE

4. DISPLAY AREA

4-1. Active Video Area :

- Max Image Size - 365.8 x 274.3mm (12.91" x 9.61")
- Preset Image Size - 350 x 262 mm (12.20" x 9.06")

4-2. Display Color : Full Colors

4-3. Display Resolution : 1600 Dots x 1200Lines

4-4. Video Bandwidth : 203MHz

5. ENVIRONMENT

5-1. Operating Temperature: 0°C ~ 40°C (32°F ~ 103°F) (Ambient)

5-2. Relative Humidity : 8% ~ 80% (Non-condensing)

5-3. Altitude : 10,000 ft

6. DIMENSIONS (with TILT/SWIVEL)

Width	: 448 mm (17.64")
Depth	: 474 mm (18.66")
Height	: 453 mm (17.83")

7. WEIGHT (with TILT/SWIVEL)

Net Weight	: 21.7 kg (47.84 lbs)
Gross Weight	: 25.2 kg (55.56 lbs)

SAFETY PRECAUTIONS

SAFETY-RELATED COMPONENT WARNING!

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

CAUTION: No modification of any circuit should be attempted.

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

SAFETY CHECK

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

FIRE & SHOCK HAZARD

An isolation transformer must be inserted between the color monitor and AC power line before servicing the chassis.

- In servicing, attention must be paid to the original lead dress specially in the high voltage circuit. If a short circuit is found, replace all parts which have been overheated as a result of the short circuit.
- All the protective devices must be reinstalled per the original design.
- Soldering must be inspected for the cold solder joints, frayed leads, damaged insulation, solder splashes, or the sharp points. Be sure to remove all foreign materials.

IMPLOSION PROTECTION

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

X-RADIATION

The only potential source of X-radiation is the picture tube. However, when the high voltage circuitry is operating properly there is no possibility of an X-radiation problem. The basic precaution which must be exercised is keep the high voltage at the factory recommended level; the normal high voltage is about 27kV. The following steps describe how to measure the high voltage and how to prevent X-radiation.

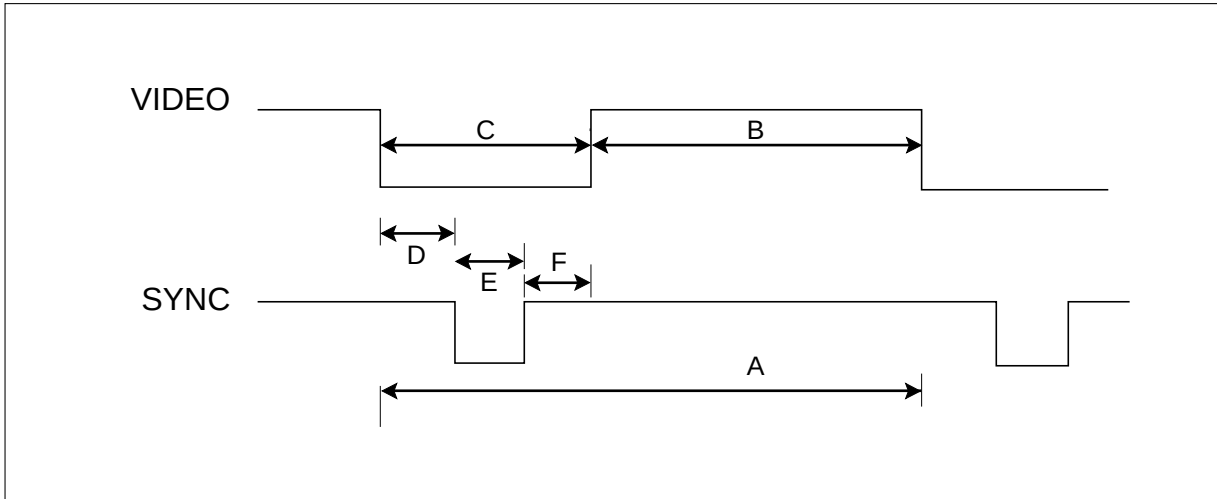
Note : It is important to use an accurate high voltage meter calibrated periodically.

- To measure the high voltage, use a high impedance high voltage meter, connect (–) to chassis and (+) to the CDT anode cap.
- Set the brightness control to maximum point at full white pattern.
- Measure the high voltage. The high voltage meter should be indicated at the factory recommended level.
- If the meter indication exceeds the maximum level, immediate service is required to prevent the possibility of premature component failure.
- To prevent X-radiation possibility, it is essential to use the specified picture tube.

CAUTION:

Please use only a plastic screwdriver to protect yourself from shock hazard during service operation.

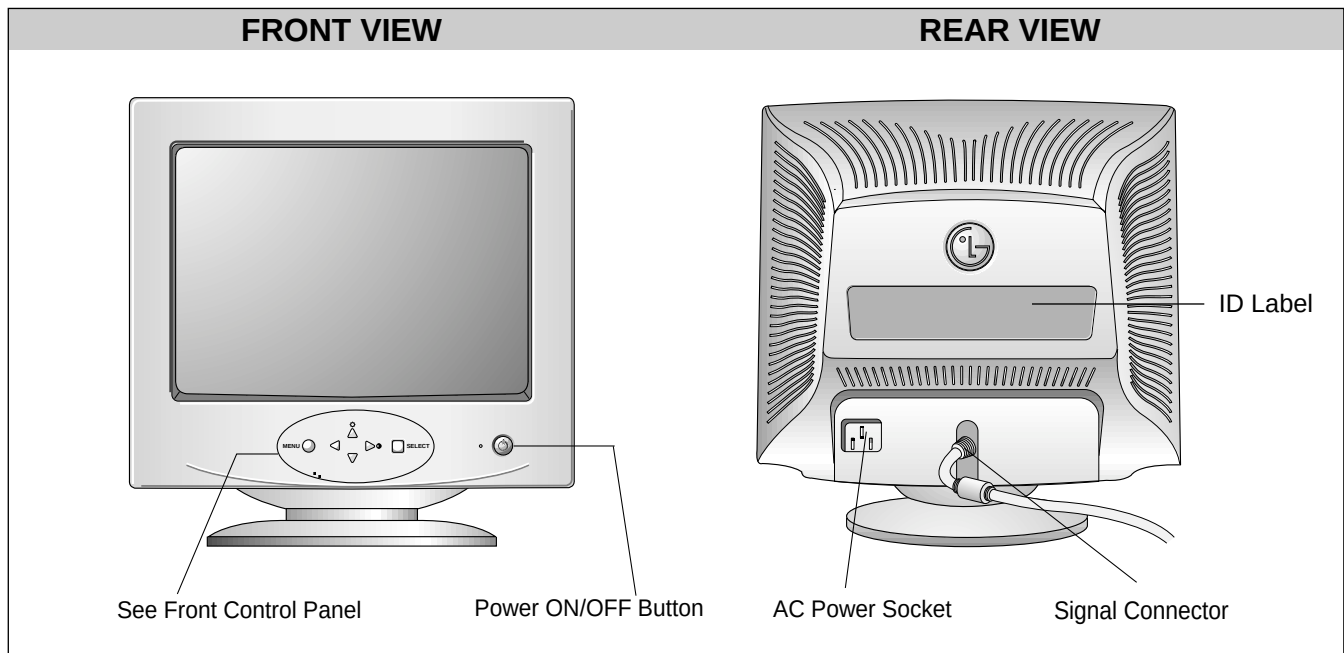
TIMING CHART



MODE			FACTORY PRESET MODE					
			MARK	MODE 1	MODE 2	MODE 3	MODE 4	MODE 5
				VESA				
H O R I Z O N T A L	Sync Polarity			—	+	+	+	+
	Frequency	kHz		43.269	53.674	68.677	91.146	93.750
	Total Period	μs	A	23.112	18.631	14.561	10.971	10.666
	Video Active Time	μs	B	17.778	14.222	10.836	8.127	7.901
	Blanking Time	μs	C	5.334	4.409	3.725	2.844	2.765
	Front Porch	μs	D	1.556	0.569	0.508	0.406	0.316
	Sync Duration	μs	E	1.556	1.138	1.016	1.016	0.948
	Back Porch	μs	F	2.222	2.702	2.201	1.422	1.501
V E R T I C A L	Sync Polarity			—	+	+	+	+
	Frequency	Hz		85.008	85.061	84.997	85.024	75.000
	Total Period	ms	A	11.763	11.756	11.765	11.762	13.333
	Video Active Time	ms	B	11.093	11.178	11.183	11.235	12.800
	Blanking Time	ms	C	0.670	0.578	0.582	0.527	0.533
	Front Porch	ms	D	0.023	0.019	0.015	0.011	0.011
	Sync Duration	ms	E	0.069	0.056	0.044	0.033	0.032
	Back Porch	ms	F	0.578	0.503	0.523	0.483	0.490
Resolution				640 X 480 85Hz	800 X 600 85Hz	1024 X 768 85Hz	1280 X 1024 85Hz	1600 X 1200 75Hz
Recall				Yes	Yes	Yes	Yes	

* Mode 5 is not preset mode but TCO check resolution!

OPERATING INSTRUCTIONS



Front Control Panel

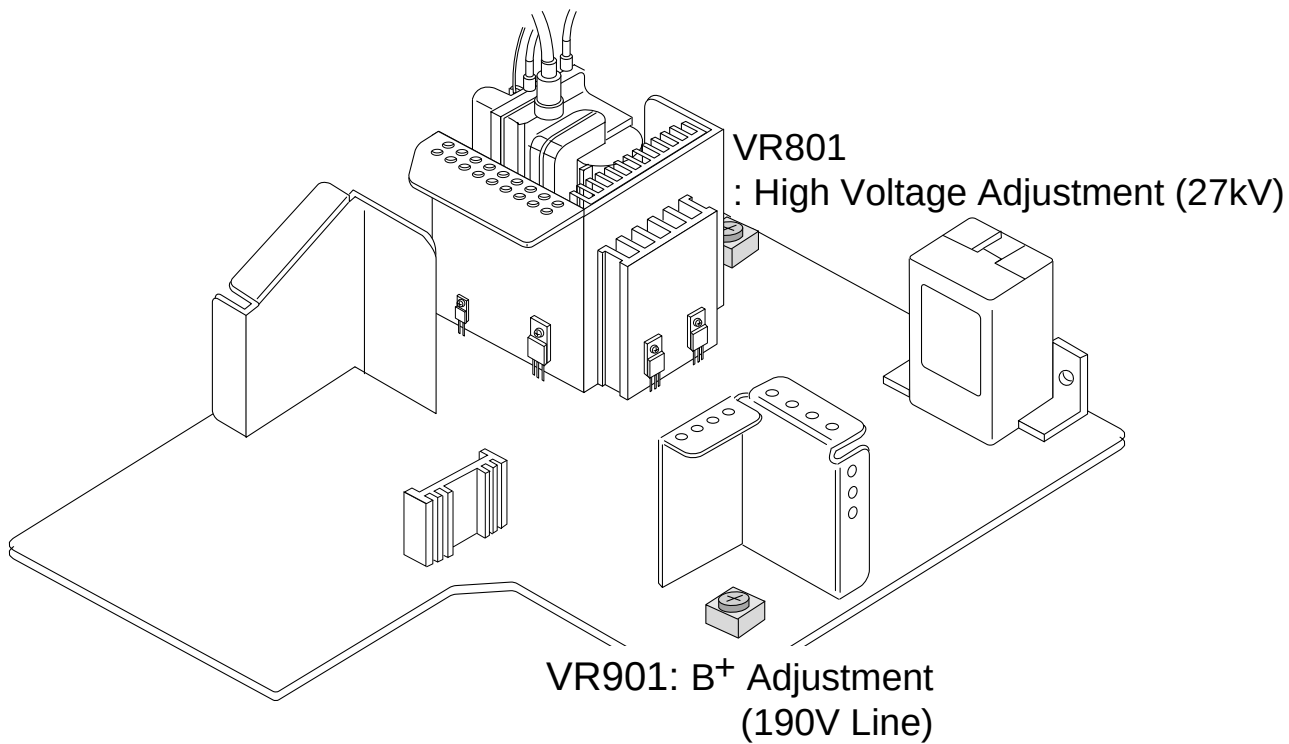
The diagram shows the front control panel with the following components labeled:

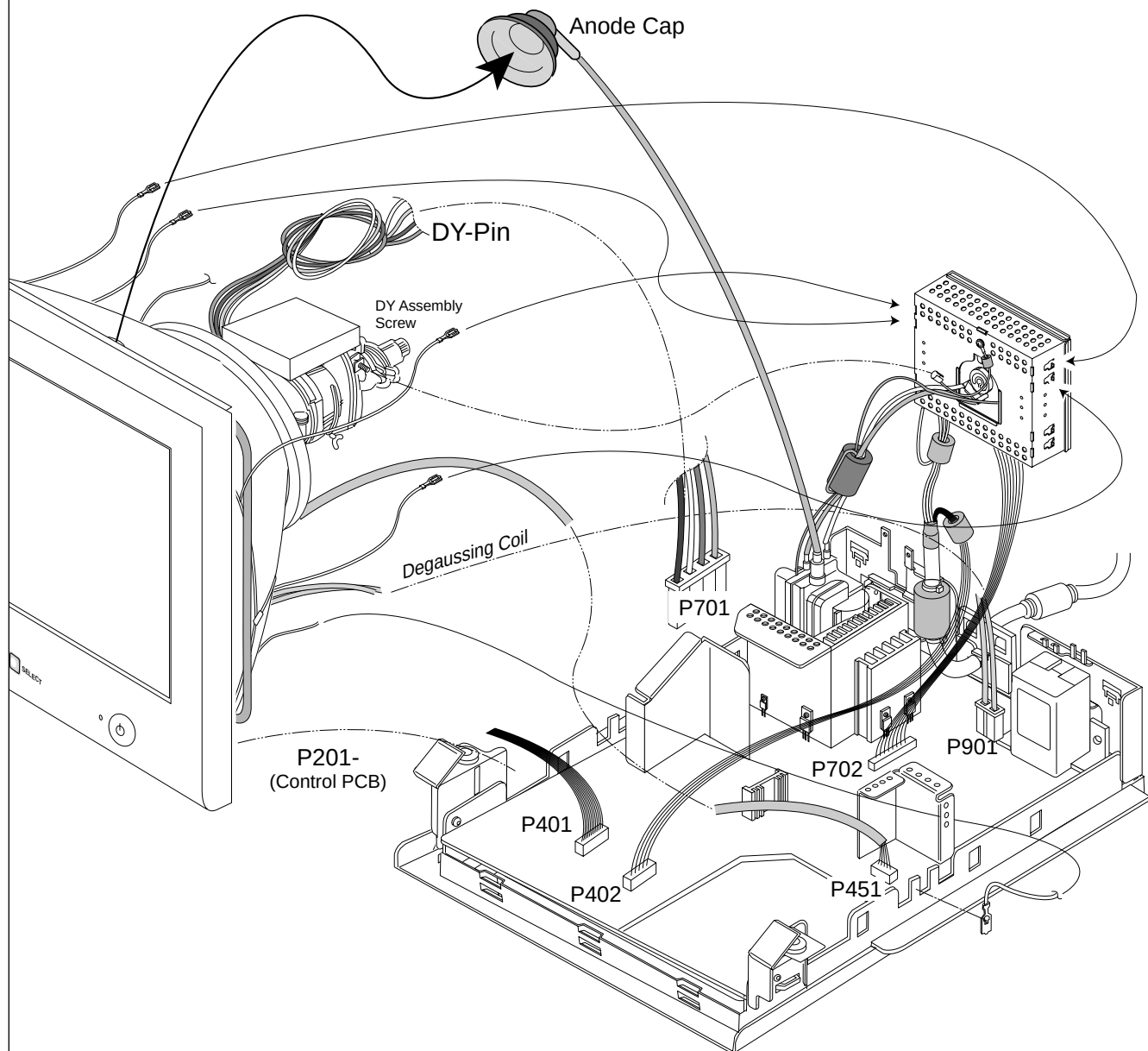
- MENU Button**: A circular button with a left-pointing arrow.
- SELECT Button**: A square button with a right-pointing arrow.
- Power (DPMS) Indicator**: A small circular light.
- MENU**: A circular button with a left-pointing arrow.
- SELECT**: A square button with a right-pointing arrow.
- Power Button**: A circular button with a power symbol.
- Buttons**: A group of four directional buttons (up, down, left, right) arranged in a circle.

- Power ON/OFF Button**
 Use this button to turn the monitor ON or OFF.
- Power Indicator**
 This indicator lights up green when the monitor operates normally; in DPMS (Energy Saving) mode, - stand-by, suspend, or power off mode - its color changes to orange, and if abnormal or damaging circuit turns out orange blink.
- Select Button**
 Use this button to enter a selection in the on screen display.
- Buttons**
 Use these buttons to choose or adjust items in the on screen display.

<Shortcut Keys>

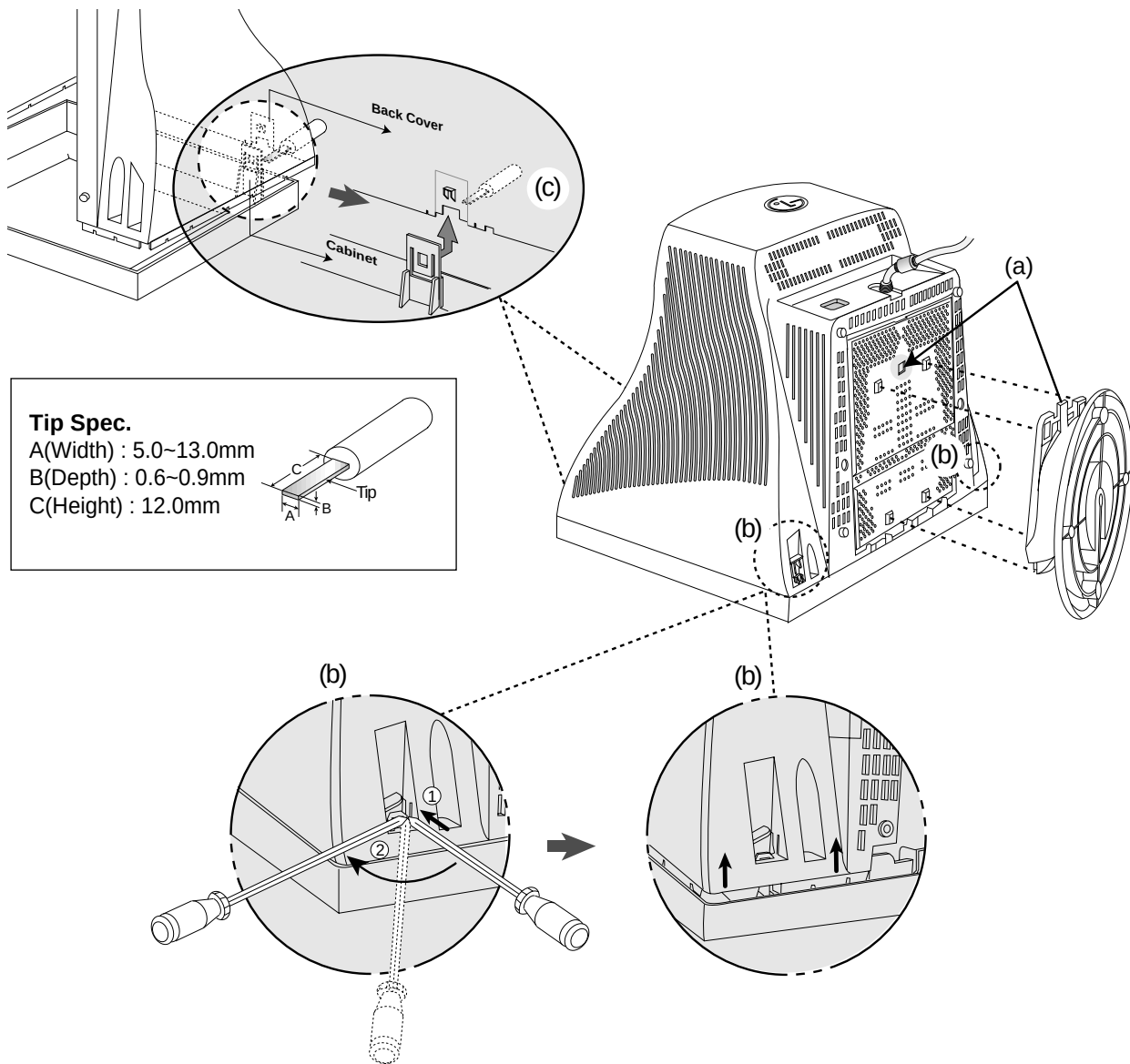
 - Brightness and Contrast can be adjusted directly without entering the On Screen Display (OSD) system. Press the $\Delta/\triangleright$ buttons to adjust the settings and then the **MENU button** to save all changes. The Brightness and Contrast functions are also available in the On Screen Display (OSD) menu.
- MENU Button**
 Use this button to enter or exit the on screen display.





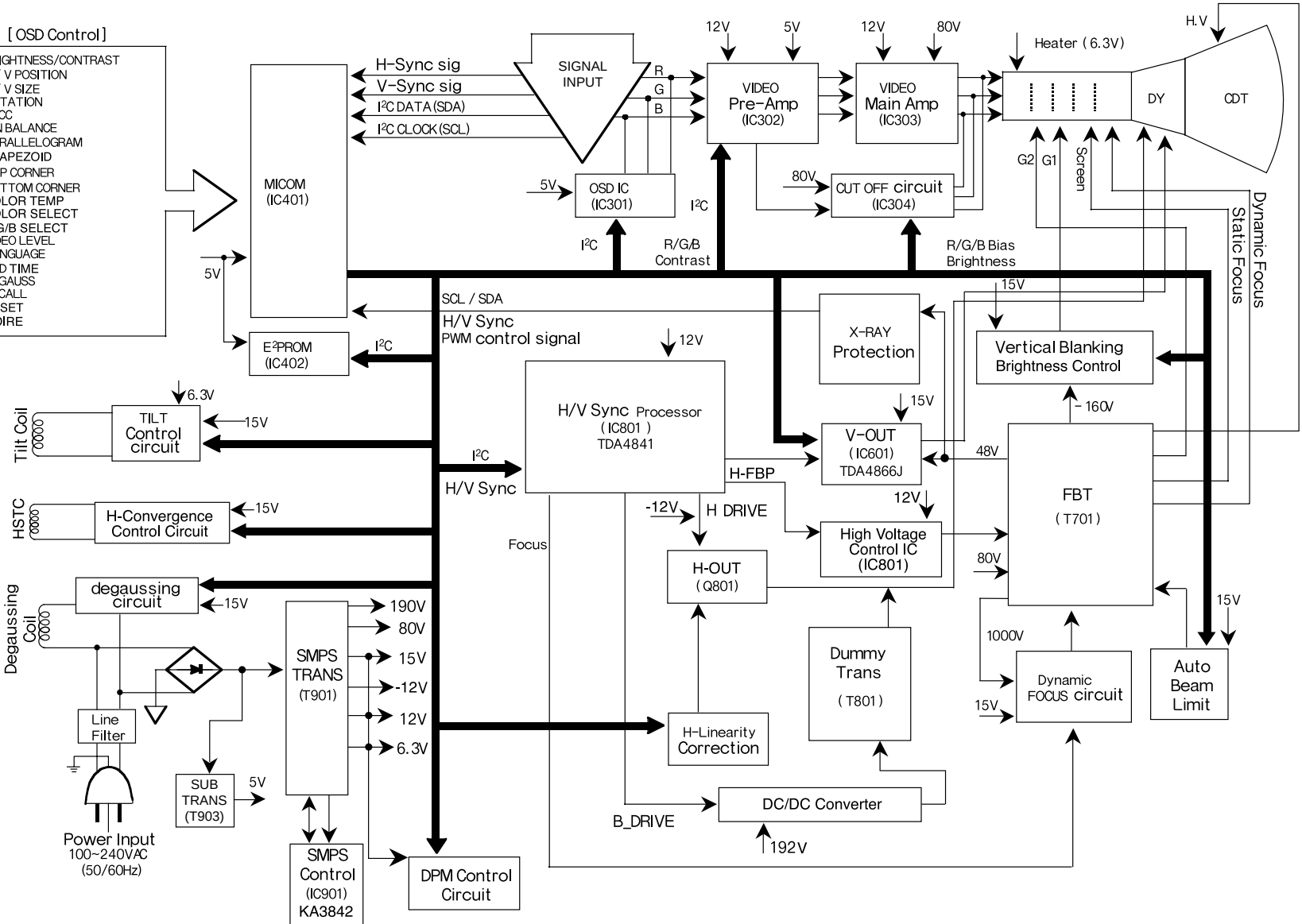
1. TILT/SWIVEL & BACK COVER REMOVAL

- 1) Set the monitor face downward.
- 2) Pull the latch (a), carefully remove the Tilt/Swivel by pulling it upward.
- 3) Pressing the latch (b), Back cover by pushing it upward.
- 4) Release the latch (c).
- 5) Slide the Back Cover away from the Front Cabinet of the monitor.



[OSD Control]

BRIGHTNESS/CONTRAST
H / V POSITION
H / V SIZE
ROTATION
SPCC
PIN BALANCE
PARALLELOGRAM
TRAPEZOID
TOP CORNER
BOTTOM CORNER
COLOR TEMP
COLOR SELECT
R/G/B SELECT
VIDEO LEVEL
LANGUAGE
OSD TIME
DEGAUSS
RECALL
RESET
MOIRE



DESCRIPTION OF BLOCK DIAGRAM

1. Line Filter & Associated Circuit.

This is used for suppressing noise of power input line flowing into the monitor and/or some noise generated in this monitor flowing out through the power input line.

That is to say, this circuit prevents interference between the monitor and other electric appliances.

2. Degauss Circuit & Coil.

The degauss circuit consists of the degaussing coil, the PTC (Positive Temperature Coefficient) thermistor (TH901), and the relay (RL901). This circuit eliminates abnormal color of the screen automatically by degaussing the slot mask in the CDT when turn on the power switch.

When you need to degauss while using the monitor, select DEGAUSS on the OSD menu.

3. SMPS (Switching Mode Power Supply).

This circuit works with power of 100~240V or 200~240V (50/60Hz) specially for PFC version.

The operation procedure is as follows:

- 1) AC input voltage is rectified and smoothed by the bridge diode (D901) and the capacitor (C905).
- 2) The rectified voltage (DC voltage) is applied to the primary coil of the transformer (T901).
- 3) The control IC (IC901) generates switching pulse to turn on and off the primary coil of the transformer (T901) repeatedly.
- 4) Depending on the turn ratio of the transformer, the secondary voltages appear at the secondary coil of the transformer (T901).
- 5) These secondary voltages are rectified by each diode (D924, D926, D923, D922, D921, D920) and operate the other circuits. (Deflection, Video Amplifier, etc.)

4. Display Power Management Circuit.

This circuit control power consumption of the monitor by detecting H and V sync signal. There are stand-by and suspend mode. When no horizontal or vertical sync signal input, the circuit consists of Q913 and Q915 becomes stand-by and suspend mode. It's power consumption is below 8W. When no horizontal and vertical sync signal input, it's power consumption is below 3W.

5. X-ray Protection.

This circuit detects the rectified DC voltage comes from the FBT pin 4. If the high voltage of the FBT reaches up to about 30kV (abnormal state), H.V control (IC802) detects. It stops B⁺ voltage supplied to the FBT (T701), and high voltage is not be generated, (In the normal state, the high voltage is about 27kV.)

6. Micom(Microprocessor) Circuit.

The operating procedure of Micom (Microprocessor) and its associated circuit is as follows:

- 1) H and V sync signal is supplied from Signal Cable to the Micom (IC401).
- 2) The Micom (IC401) distinguishes polarity and frequency of H and V sync.
- 3) The Micom controls each OSD function signals. (H-size, H-position, V-size, etc.)
- 4) The controlled data of each mode is stored in IC402. User can adjust screen condition by each OSD function. The data of the adjust screen condition is stored automatically.

7. Horizontal and Vertical Synchronous Processor.

This circuit generates the horizontal drive pulse and the vertical drive pulse by taking sync-signal from Signal Cable. This circuit consists of the TDA4841(IC801) and the associated circuit.

8. Oscillating Circuit for D/D Converter.

This circuit generates the pulse wave which has the horizontal period by taking the output of the TDA4841 (IC801).

9. D/D (DC to DC) Converter.

This circuit supplies DC voltage to the horizontal deflection output circuit by decreasing DC 190V which is the secondary voltage of the SMPS in accordance with the input horizontal sync signal.

10. Side-Pincushion Correcting Circuit.

This circuit improves the Side-pincushion of the screen by mixing east-west wave to the output of the horizontal deflection D/D converter which is used for the supply voltage source (B⁺) of the deflection circuit.

11. D/D Drive & Convert Circuit.

This circuit is used for supplying B^+ voltage to horizontal deflection output transistor (Q801). This circuit makes to add side-pincushion correcting signal to B^+ voltage.

12. Horizontal Deflection Output Circuit.

This circuit makes the horizontal deflection by supplying the saw-tooth current to the horizontal deflection yoke.

13. High Voltage Output & FBT (Flyback Transformer).

The high voltage output circuit is used for generating pulse wave to the primary coil of the FBT (Flyback Transformer (T701)). A boosted voltage (about 27kV) appears at the secondary of the FBT and it is supplied to the anode of the CDT.

And there are another output voltages such as the dynamic focus voltage.

14. H-Linearity Correction Circuit.

This circuit corrects the horizontal linearity for each horizontal sync frequency.

15. Vertical Output Circuit.

This circuit takes the vertical wave from the TDA4841 (IC801) and performs the vertical deflection by supplying the saw-tooth wave current from the TDA4866 (IC601) to the vertical deflection yoke.

17. Dynamic Focus Output Circuit.

This circuit takes H and V parabola wave from the TDA4841 (IC801), and amplifies these waves to offer to the FBT (T701).

18. H & V Blanking and Brightness Control.

This circuit eliminates the retrace line by supplying a negative pulse to the G1 of the CDT. The brightness control circuit is used to control of the screen brightness by changing the DC level of G1.

19. Image Rotation (Tilt) Circuit.

This circuit corrects the tilt of the screen by supplying the image rotation signal to the tilt coil which is attached to the CDT near the deflection.

20. Moire Reduction Circuit

This circuit reduce interference between the periodical display pattern and the CDT's slot (or dot).

The positions of every other one dot video signal beams (red, green, and blue beam) are shifted finely, thus reducing interference.

21. OSD Circuit.

This circuit is used for performing the OSD (On-Screen- Display) function.

When a user selects the OSD Select/Adjustment control, the adjustment status displays on the screen.

22. Video Pre-Amp Circuit.

This circuit amplifies the analog video signal from 0-0.7V to 0-4V. This circuit is operated by taking the clamp, R, G, B drives, and contrast signals from the Micom (IC401).

23. Video Output Amp Circuit.

This circuit amplifies the video signal which comes from the video pre-amp circuit and amplified video signal is applied to the CDT cathode.

ADJUSTMENT

GENERAL INFORMATION

All adjustment are thoroughly checked and corrected when the monitor leaves the factory, but sometimes several adjustments may be required.

Adjustment should be following procedure and after warming up for a minimum of 30 minutes.

- Alignment appliances and tools.
 - IBM compatible PC.
 - Programmable Signal Generator.
(eg. VG-819 made by Astrodesign Co.)
 - EPROM or EEPROM with saved each mode data.
 - Alignment Adaptor and Software.
 - Digital Voltmeter.
 - White Balance Meter.
 - Luminance Meter.
 - High-voltage Meter.

AUTOMATIC AND MANUAL DEGAUSSING

The degaussing coil is mounted around the CDT so that automatic degaussing when turn on the monitor. But a monitor is moved or faced in a different direction, become poor color purity cause of CDT magnetized, then press DEGAUSSING on the OSD menu.

ADJUSTMENT PROCEDURE & METHOD

- Install the cable for adjustment such as Figure 1 and run the alignment program on the DOS for IBM compatible PC.
- Set external Brightness and Contrast volume to max position.

1. Adjustment for B⁺ Voltage.

- 1) Display cross hatch pattern at Mode 4.
- 2) Adjust C921 (+) voltage to $190V \pm 0.2V$ with **VR901**.

2. Adjustment for High-Voltage.

- 1) Display cross hatch pattern at Mode 4.
- 2) Adjust CDT Anode voltage to $26kV \pm 0.2kV$ with **VR801**.

3. Adjustment for Factory Mode (Preset Mode).

- 1) Display cross hatch pattern at Mode 1~4.
- 2) Run alignment program for EB990G on the IBM compatible PC.

- 3) EEPROM → ALL CLEAR → Y(Yes) command.
<Caution> Do not run this procedure unless the EEPROM is changed. All data in EEPROM (mode data and color data) will be erased.
- 4) COMMAND → PRESET START → Y(Yes) command.
- 5) DIST. ADJ. → FOS. ADJ command.
- 6) Adjust H-POSITION as arrow keys to center of the screen.
- 7) Adjust H-SIZE as arrow keys to $350 \pm 2mm$.
- 8) Adjust V-POSITION as arrow keys to center of the screen.
- 9) Adjust V-SIZE as arrow keys to $262 \pm 2mm$.
- 10) Adjust TRAPEZOID as arrow keys to be the best condition.
- 11) Adjust TILT as arrow keys to be the best condition.
- 12) Display cross hatch pattern at Mode 4.
- 13) DIST. ADJ. → BALANCE DATA command.
- 14) Adjust balance of Pin-Balance as arrow keys to be the best condition.
- 15) Adjust parallelogram as arrow keys to be the best condition.
- 16) Save of the Mode.
- 17) Save of the System.
- 18) Display from Mode 4 and repeat above from number 6) to 15).
- 19) COMMAND → PRESET EXIT → Y (Yes) command.

4. Adjustment for White Balance and Luminance.

- 1) Set the White Balance Meter.
- 2) Press the DEGAUSSING on the OSD menu for demagnetization of the CDT.
- 3) Display color 0,0 pattern at Mode 4.
- 4) COMMAND → PRESET START → Y(Yes) command.
- 5) Set Brightness and Contrast to max position.
- 6) COLOR ADJ. → LUMINANCE command of the alignment program.
- 7) COLOR ADJ. → BIAS ADJ. command of the alignment program.
- 8) Check whether blue color or not at R-BIAS and G-BIAS to min position, Sub-Brightness to Max (90:HEX(50A)) position, B-BIAS to 75: HEX(4B) position. If it's not blue color, the monitor must repair.
- 9) Adjust Screen control on the FBT to $0.15 \pm 0.02FL$ of the raster luminance.
- 10) Adjust R-BIAS and G-BIAS command to $x=0.283 \pm 0.006$ and $y=0.298 \pm 0.006$ on the White Balance Meter with PC arrow keys.

- 11) Adjust SUB-Brightness command to 0.4 ± 0.1 FL of the raster luminance.
- 12) Display color 15,0 box pattern(70x70mm) at mode 4.
- 13) DRIVE ADJ command.
- 14) Set B-DRIVE to 100:HEX(64) at DRIVE of the alignment program.
- 15) Adjust R-DRIVE and G-DRIVE command to white balance $x=0.283 \pm 0.003$ and $y=0.298 \pm 0.003$ on the White Balance Meter with PC arrow keys.
- 16) Adjust SUB-CONTRAST command to 47 ± 1 FL of the raster luminance.
- 17) Display color 15,0 full white patten at Mode 4.
- 18) COLOR ADJ. → LUMINANCE → ABL command.
- 19) Adjust ABL to 30 ± 1 FL of the luminance.
- 20) Exit from the program.

5. Input EDID Data.

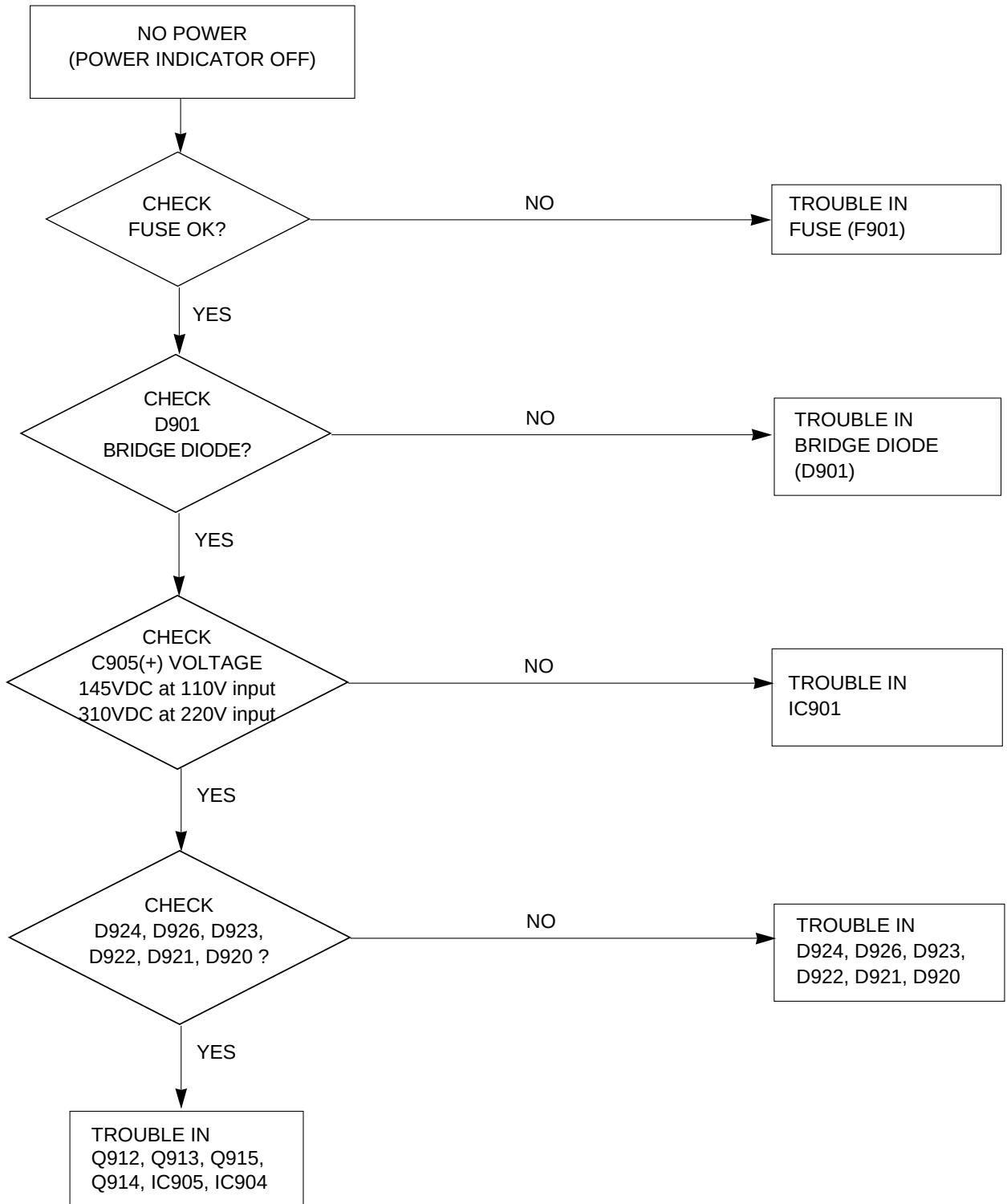
- 1) Display color 15,0 cross hatch pattern at Mode 4.
- 2) EEPROM → Write EDID command and confirm "EDID Write OK!!" message of monitor.
- 3) Exit from the alignment program.
- 4) Power switch OFF/ON for EDID data save.

6. Adjustment for Focus.

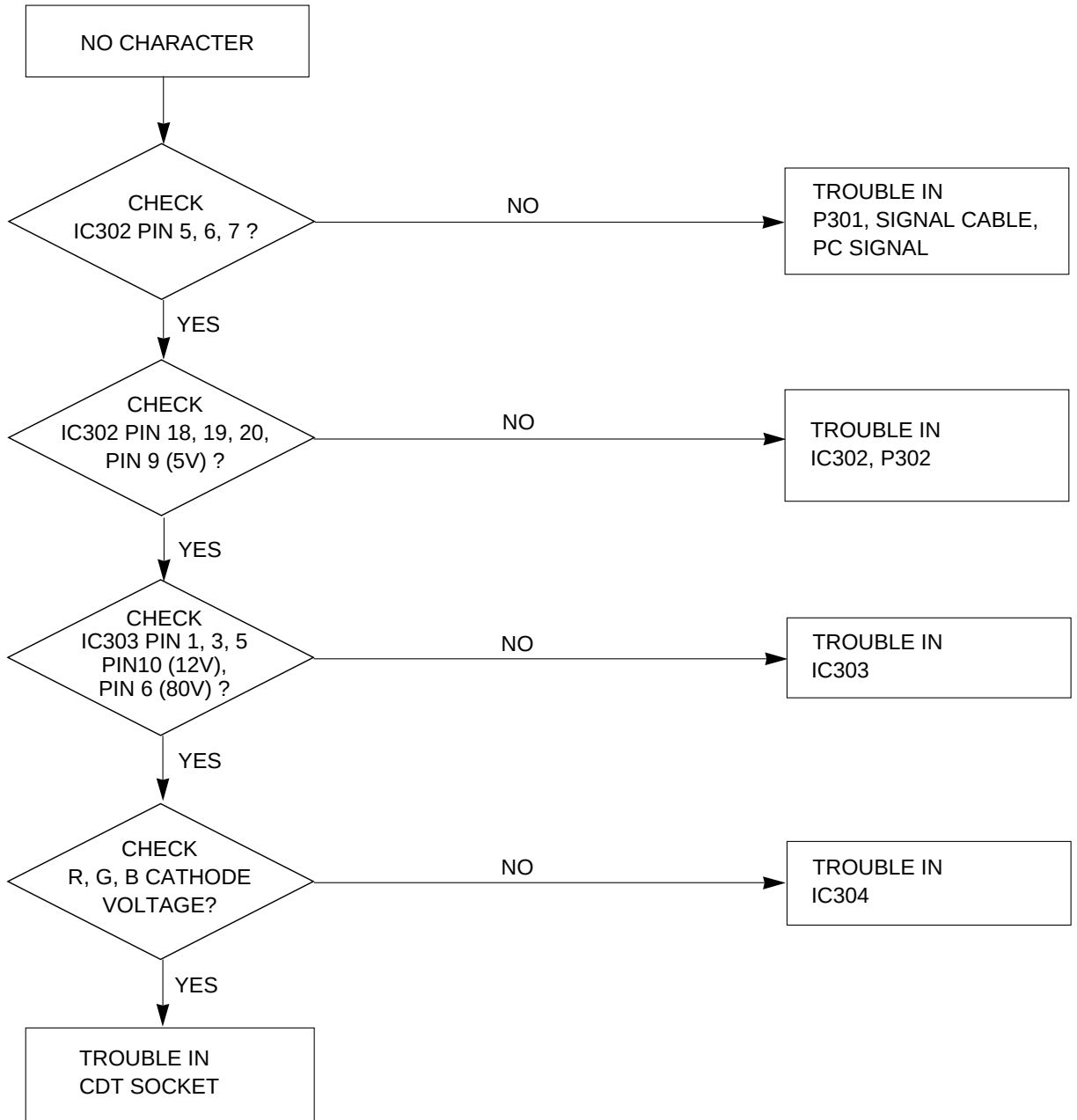
- 1) Display H character in full screen at Mode 4.
- 2) Adjust two Focus control on the FBT that focus should be the best condition.

TROUBLESHOOTING GUIDE

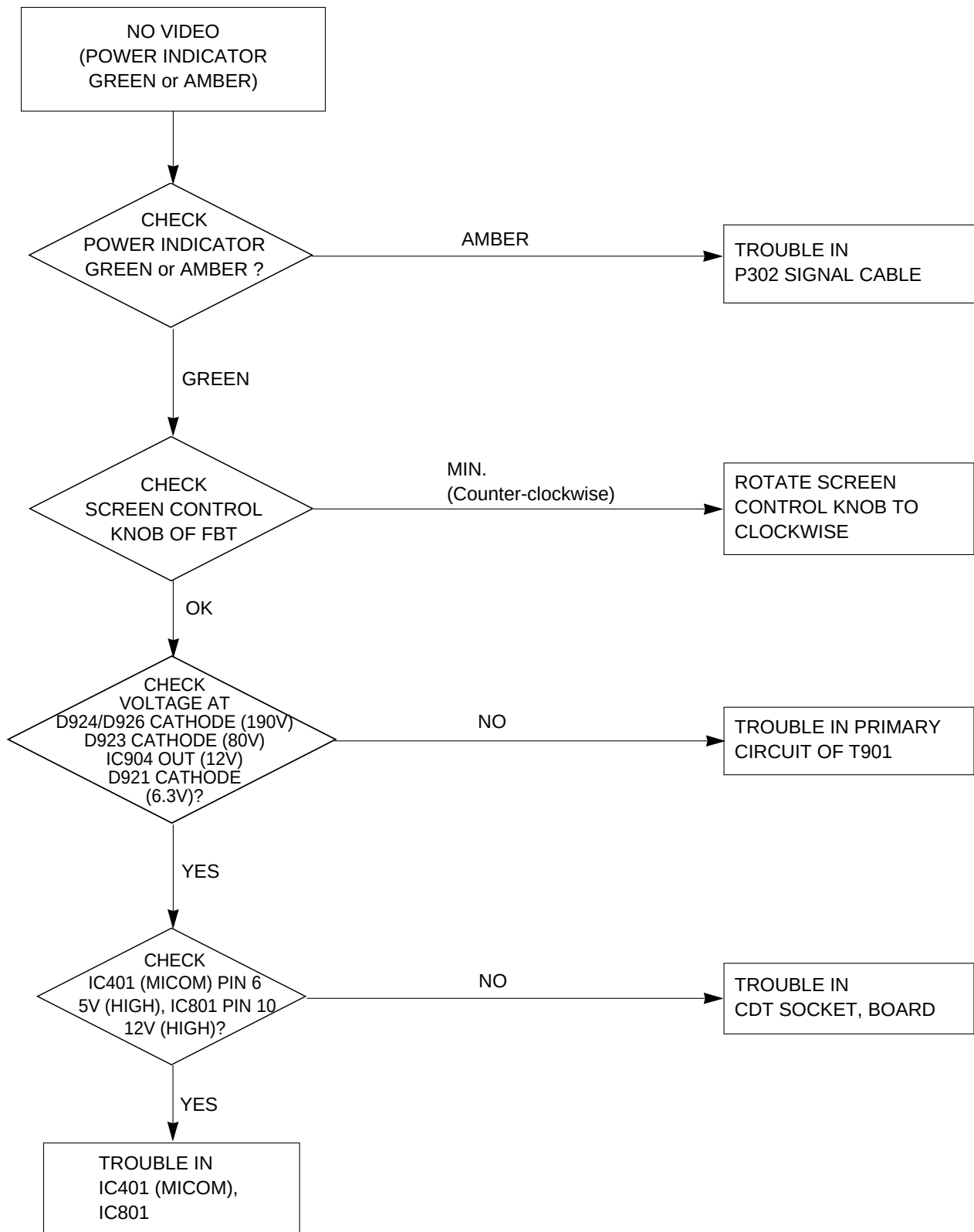
1. NO POWER



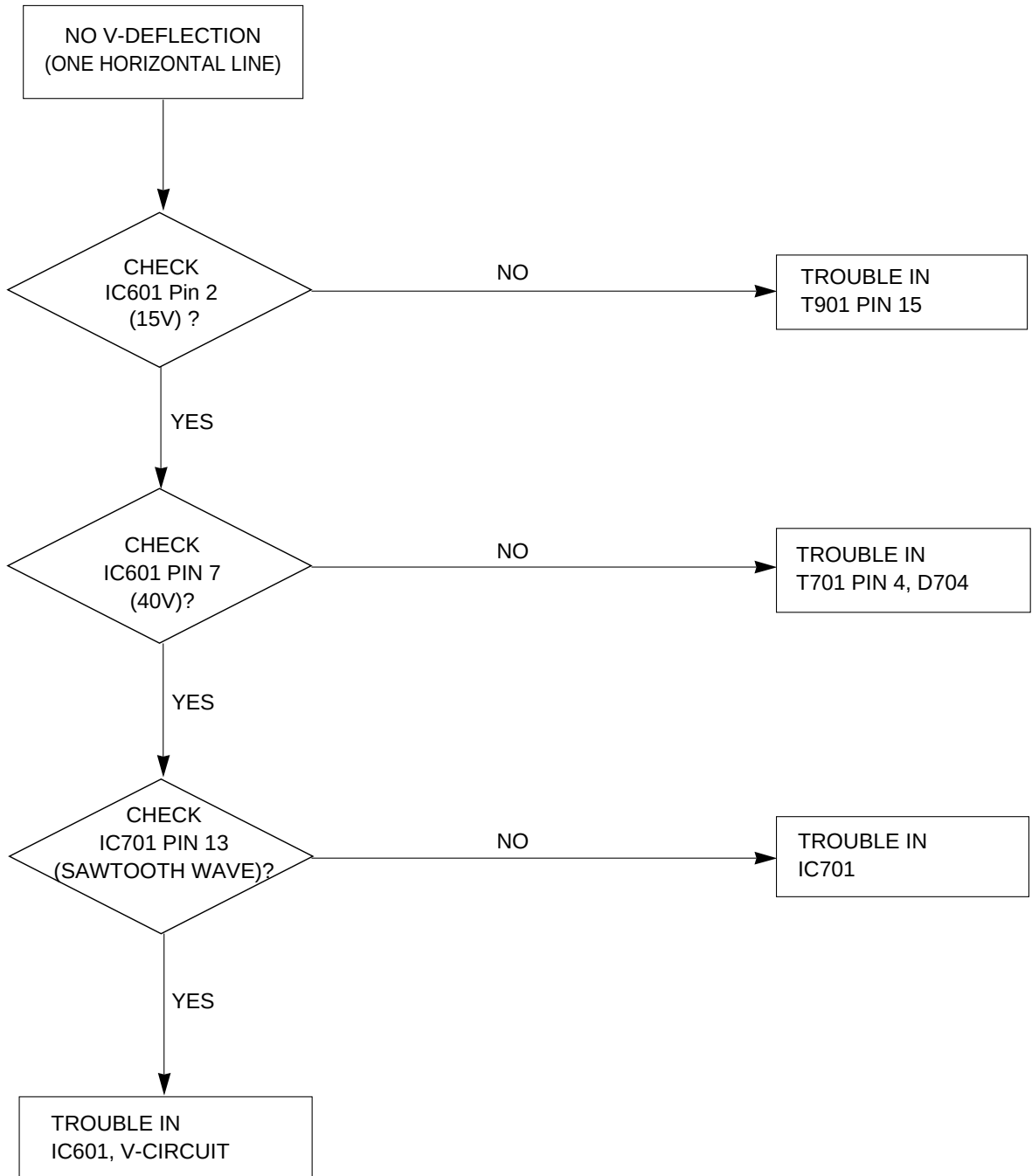
2. NO CHARACTER



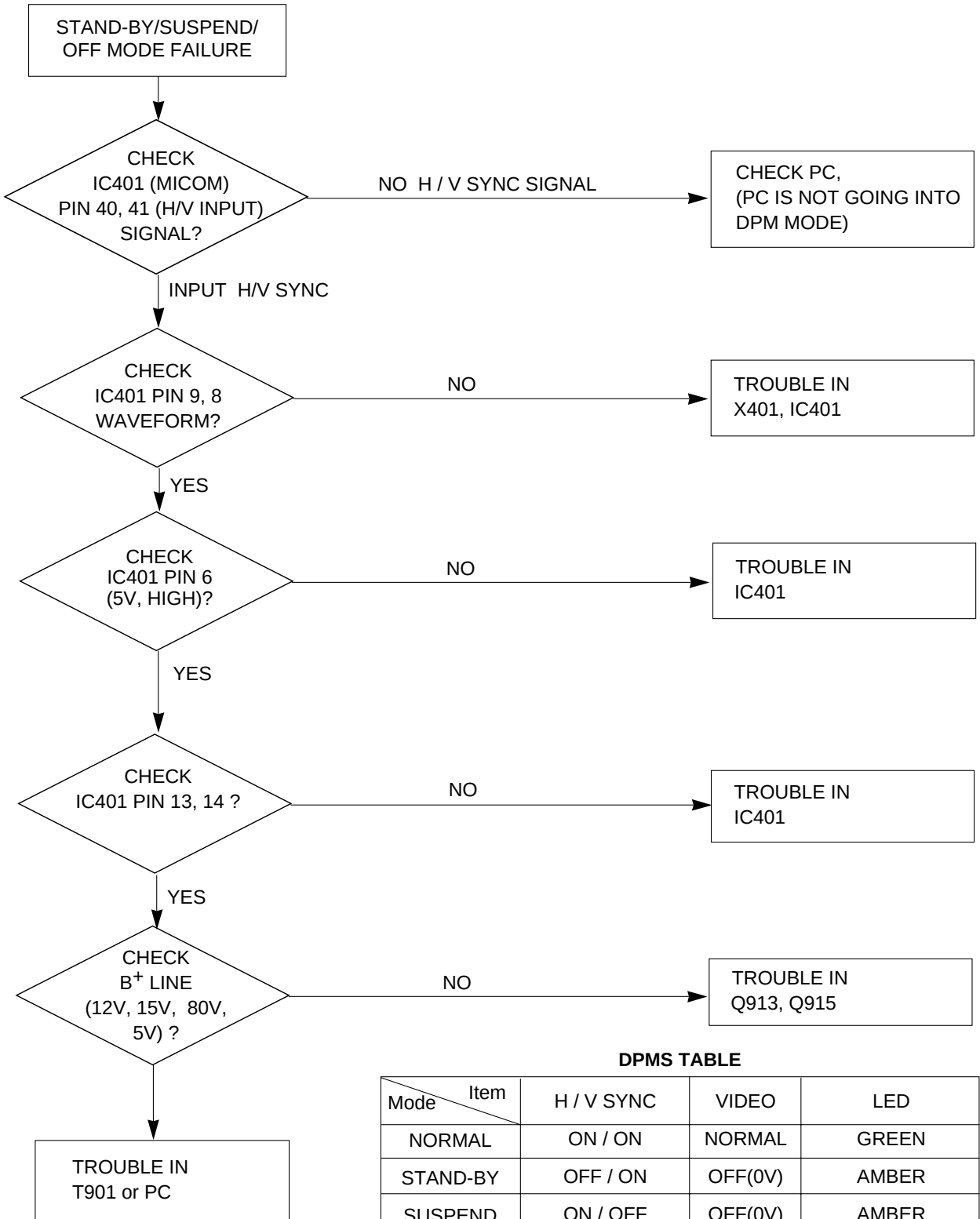
3. NO RASTER



4. NO VERTICAL DEFLECTION



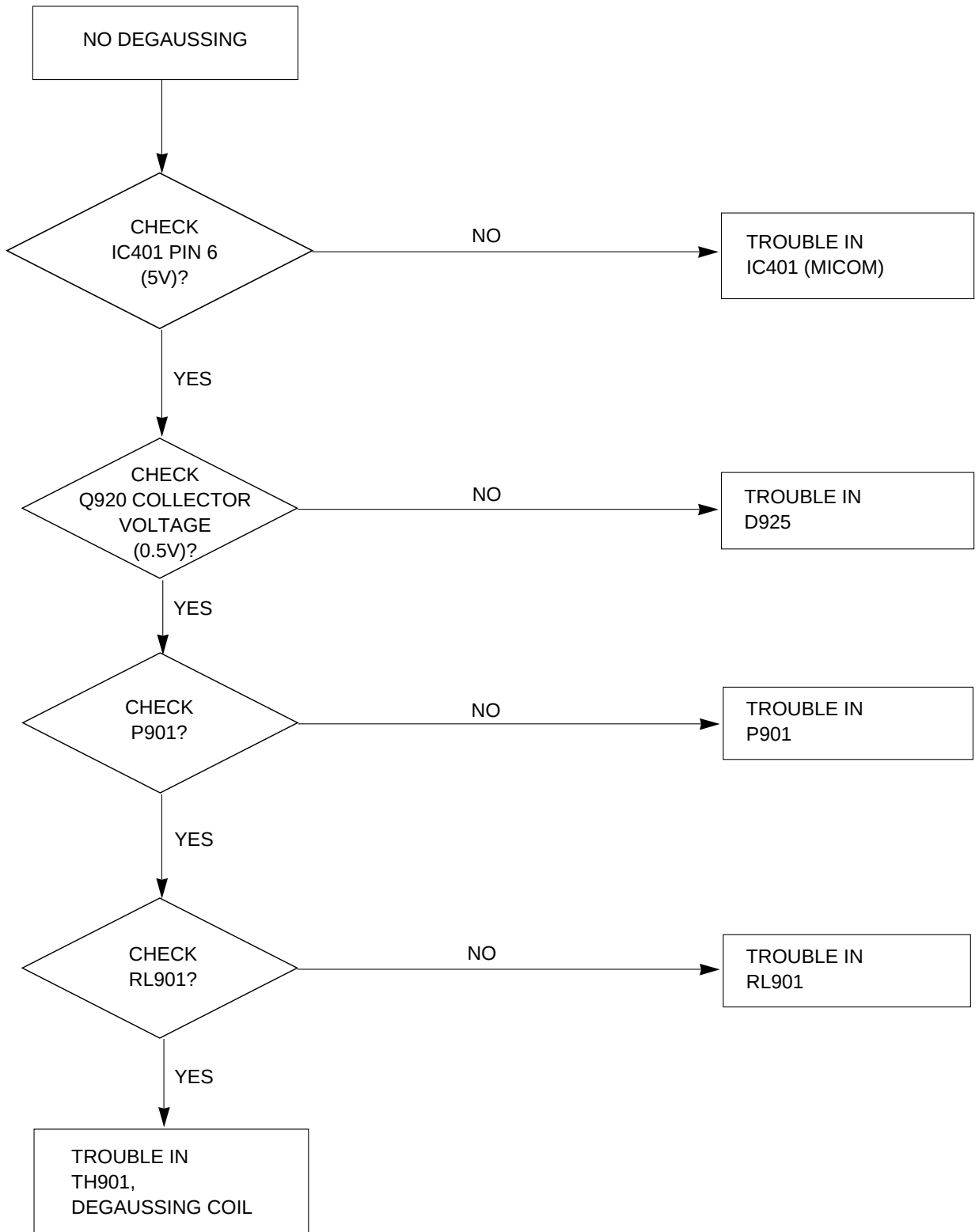
5. TROUBLE IN DPM



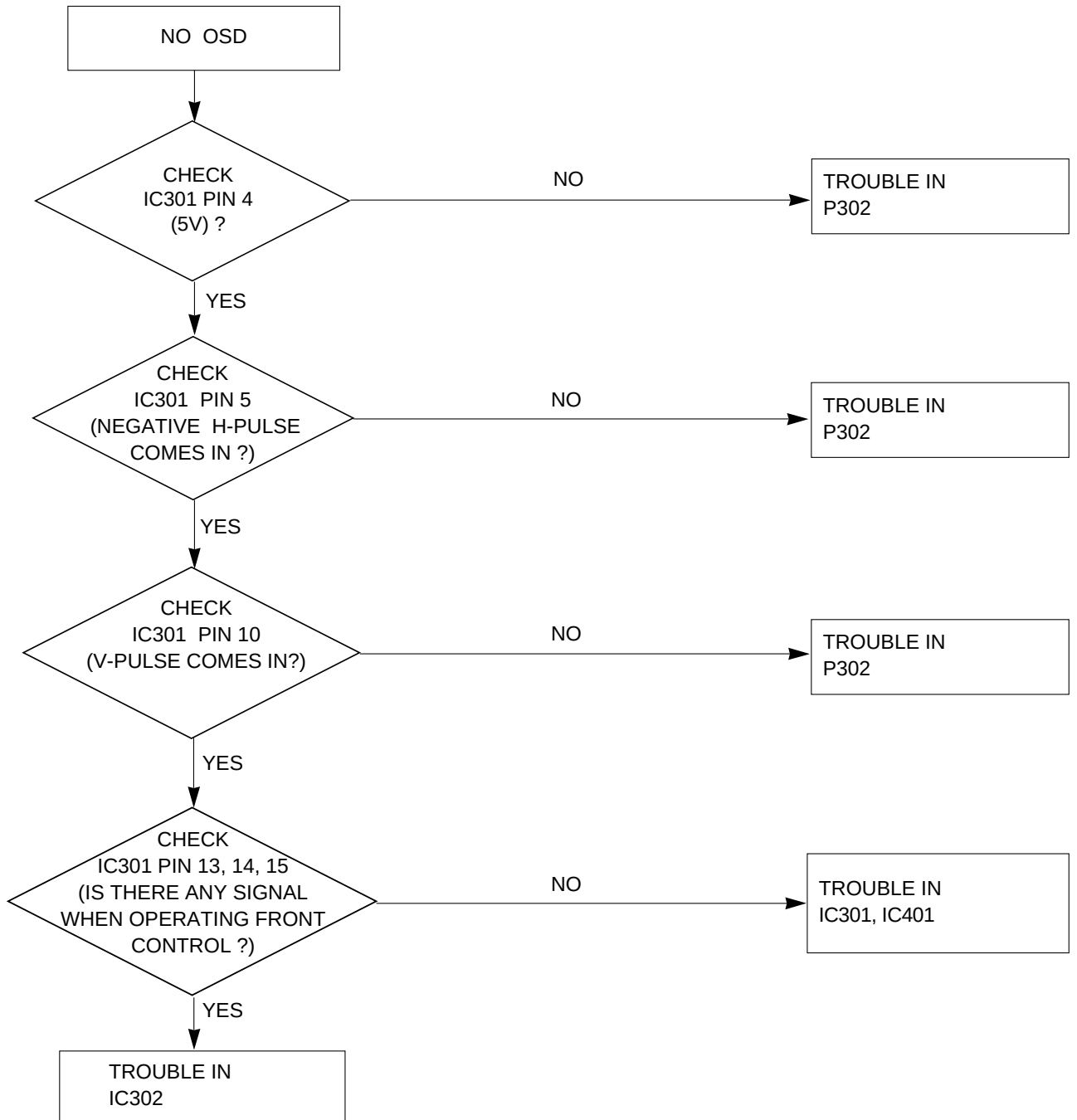
DPMS TABLE

Mode \ Item	H / V SYNC	VIDEO	LED
NORMAL	ON / ON	NORMAL	GREEN
STAND-BY	OFF / ON	OFF(0V)	AMBER
SUSPEND	ON / OFF	OFF(0V)	AMBER
OFF	OFF / OFF	OFF(0V)	AMBER

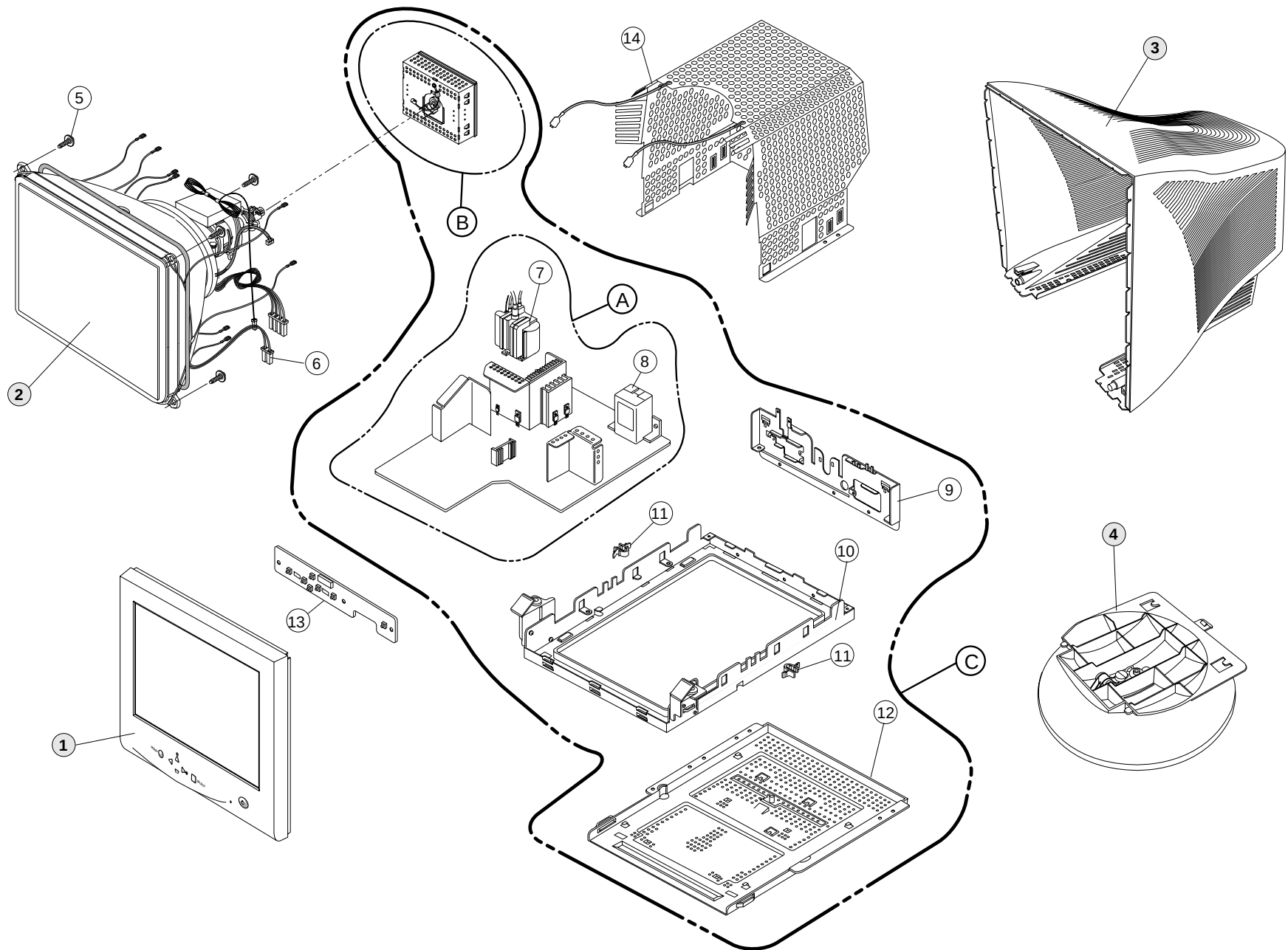
6. NO DEGAUSSING



7. TROUBLE IN OSD



EXPLODED VIEW



EXPLODED VIEW PARTS LIST

Ref. No.	Part No.	Description
1	3091TKC069B	CABINET ASSEMBLY, EB990E BRAND C063 TCO99(85964)
	3091TKC069K	CABINET ASSEMBLY, EB990E BRAND C063 85964 TCO99(RED/GREY FLATRON) FOR MEXICO
2	6318L19001B	CDT(CIRC), M46QEF903X 03N6LD LG-PHILIPS 95KHZ 29.1MM FLAT CDT (EB990G-EL)
	6318G19001A	CDT(CIRC), M46QCK761X123 SAMSUNG 95KHZ 29.1MM FLAT (EB990G-ES)
3	3809TKC038C	BACK COVER ASSY, CB997E TKC036 85964- FOR EUROPE, U.K (PFC)
	3809TKC038A	BACK COVER ASSY, CB997E TKC036 85964 FOR MEXICO, USA (NON PFC)
4	3043TKK079A	TILT SWIVEL ASSY, CB997E TKT054/TKB048 85964
5	339-002H	SCREW ASSY, PHP+5*20(FZMY)+GW18 NEW TYPE
6	6140TC4002A	COIL,DEGAUSSING, 1290MM 16.5OHM 0.45MM 115T 19" CB997E
7	6174T13010C	FBT (FLY BACK TRANSFORMER) FQM19A008,EB990G SAMSUNG 19"
8	6200TJB001H	FILTER(CIRC),EMC, 02MD1 DELTA BK W/O GND
9	4950TKK292A	METAL REAR CB997E
10	4951TKK057A	METAL ASSY, FRAME BOTTOM
11	4930TKK031C	HOLDER, PCB FIX
12	4950TKK289A	METAL SHIELD BOTTOM 997E
13	6871TST291A	PWB(PCB) ASSEMBLY,SUB, EB990G CONTROL TOTAL BRAND CA-111
14	4815TKT015B	SHIELD ASSEMBLY, TOP EB990G
A	3313T19043F	MAIN TOTAL ASSEMBLY EB990G BRAND CA-111 FOR EUROPE (EB990G-EL)
	3313T19043C	MAIN TOTAL ASSEMBLY EB990G BRAND CA-111 FOR MEXICO (EB990G-EL)
	3313T19043E	MAIN TOTAL ASSEMBLY EB990G BRAND CA-111 FOR U.K (EB990G-EL)
	3313T19043D	MAIN TOTAL ASSEMBLY EB990G BRAND CA-111 FOR USA (EB990G-EL)
	3313T19043G	MAIN TOTAL ASSEMBLY EB990G BRAND CA-111 FOR EUROPE (EB990G-ES)
B	6871TVT283A	PWB(PCB) ASSEMBLY,VIDEO, EB990G VIDEO TOTAL BRAND CA-111
C	6871TMT299F	PWB(PCB) ASSEMBLY,MAIN, EB990G ALEUE BRAND CA-111 TOTAL FOR EUROPE (EB990G-EL)
	6871TMT299C	PWB(PCB) ASSEMBLY,MAIN, EB990G ALMXE BRAND CA-111 TOTAL FOR MEXICO (EB990G-EL)
	6871TMT299E	PWB(PCB) ASSEMBLY,MAIN, EB990G ALUKE BRAND CA-111 TOTAL FOR U.K (EB990G-EL)
	6871TMT299D	PWB(PCB) ASSEMBLY,MAIN, EB990G ALUSE BRAND CA-111 TOTAL FOR USA (EB990G-EL)
	6871TMT299G	PWB(PCB) ASSEMBLY,MAIN, EB990G ASEUE BRAND CA-111 TOTAL FOR EUROPE (EB990G-ES)

REPLACEMENT PARTS LIST

CAUTION: BEFORE REPLACING ANY OF THESE COMPONENTS,
READ CAREFULLY THE **SAFETY PRECAUTIONS** IN THIS MANUAL.

* NOTE : **S** SAFETY Mark 
AL ALTERNATIVE PARTS

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
CAPACITORS				
		C201	0CN1040K949	0.1M 50V Z F TA52
		C301	0CE477CF618	470UF SHL 16V M FL TP5
		C302	0CE107CF638	100UF SHL,SD 16V M FM5 TP 5
		C303	181-288B	MKT 100V 104JTR PHS26104
		C304	181-288N	MKT 100V 103JTR PHS86103
		C305	181-288N	MKT 100V 103JTR PHS86103
		C306	0CN1040K949	0.1M 50V Z F TA52
		C307	0CN1040K949	0.1M 50V Z F TA52
		C308	0CN1040K949	0.1M 50V Z F TA52
		C309	181-288B	MKT 100V 104JTR PHS26104
		C310	0CK1040K945	0.1UF 50V Z F TR
		C312	181-288B	MKT 100V 104JTR PHS26104
		C313	181-288B	MKT 100V 104JTR PHS26104
		C314	181-288B	MKT 100V 104JTR PHS26104
		C315	181-288B	MKT 100V 104JTR PHS26104
		C316	0CK10302940	0.01M 2KV Z F S
		C317	0CE106CN638	10UF SHL,SD 100V M FM5 TP 5
		C318	181-288B	MKT 100V 104JTR PHS26104
		C319	0CK10302940	0.01M 2KV Z F S
		C320	0CE107CN630	100U SHL 100V M FM5
		C321	0CE107EF638	100UF KMG 16V M FM5 TP 5
		C322	0CN1040K949	0.1M 50V Z F TA52
		C323	0CE476EN618	47UF KMG 100V M FL TP 5
		C324	181-288B	MKT 100V 104JTR PHS26104
		C325	0CC3300K415	33P 50V J NP0 TP
		C326	181-288B	MKT 100V 104JTR PHS26104
		C327	181-288B	MKT 100V 104JTR PHS26104
		C329	181-288B	MKT 100V 104JTR PHS26104
		C330	181-288B	MKT 100V 104JTR PHS26104
		C332	181-288E	MKT 100V 474JTR PHS 26474
		C333	181-288E	MKT 100V 474JTR PHS 26474
		C334	181-288E	MKT 100V 474JTR PHS 26474
		C336	0CK1010W515	100P 500V K B TS
		C337	181-288B	MKT 100V 104JTR PHS26104
		C340	0CE227CF638	220UF SHL,SD 16V M FM5 TP 5
		C341	181-288B	MKT 100V 104JTR PHS26104
		C342	0CC2200W415	22PF 500V J NP0 TR
		C343	0CK1010K515	100PF 50V K B TR
		C345	0CK22202510	2200P 2KV K B S
		C346	0CC47001505	47PF 1KV K SL TR
		C347	0CC47001505	47PF 1KV K SL TR
		C348	0CK1040K945	0.1UF 50V Z F TR
		C349	181-288E	MKT 100V 474JTR PHS 26474
		C350	0CK2210K515	220P 50V K B TS
		C355	0CK1040K945	0.1UF 50V Z F TR
		C356	0CN6810K519	680P 50V K B TA52
		C401	0CC5600K415	56P 50V J NP0 TP
		C402	0CE476CH638	47UF SHL,SD 25V M FM5 TP 5
		C403	0CK2710K515	270P 50V K B TS
		C404	0CK2710K515	270P 50V K B TS
		C405	0CK2710K515	270P 50V K B TS
		C406	0CC0400K115	4P 50V D NP0 TS
		C407	0CC0400K115	4P 50V D NP0 TS

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		C408	0CN1040K949	0.1M 50V Z F TA52
		C410	0CK1040K945	0.1UF 50V Z F TR
		C417	0CK1040K945	0.1UF 50V Z F TR
		C418	0CN1040K949	0.1M 50V Z F TA52
		C452	0CE106CF638	10UF SHL,SD 16V M FM5 TP 5
		C453	0CE106CF638	10UF SHL,SD 16V M FM5 TP 5
		C454	0CK1040K945	0.1UF 50V Z F TR
		C455	0CK1040K945	0.1UF 50V Z F TR
		C459	0CK1010K515	100PF 50V K B TR
		C601	0CZZTFT001Q	ECQB1H183JM3 MATSUSHITA 50V 0.
		C602	181-288B	MKT 100V 104JTR PHS26104
		C603	0CK1020W515	1000P 500V K B TS
		C604	0CE477CH618	470UF SHL 25V M FL TP5
		C605	0CE476CN618	47UF SHL 100V M FL TP5
		C701	0CE106CK638	10UF SHL,SD 50V M FM5 TP 5
		C702	0CE227EN630	220UF KMG 100V M FM5 BULK
		C704	0CBZTBU003J	392J 20.0*12.5*7.5*10.0 800V J
		C705	0CE336CN638	33UF SHL,SD 100V M FM5 TP 5
		C707	0CE106CK638	10UF SHL,SD 50V M FM5 TP 5
		C708	0CE476CQ618	47U SHL 200V M FL TP5
		C709	181-477A	102J 19.5*12.0*7.0*7.5 250V J
		C710	0CC3300K415	33P 50V J NP0 TP
		C711	0CQ4721N419	0.0047U 100V J POLY NI TP5
		C712	0CK2220K515	2200P 50V K B TS
		C713	0CE107CH638	100UF SHL,SD 25V M FM5 TP 5
		C730	0CE476CH638	47UF SHL,SD 25V M FM5 TP 5
		C731	0CE105CK638	1UF SHL,SD 50V M FM5 TP 5
		C732	0CK1040K945	0.1UF 50V Z F TR
		C735	0CC1000W105	10PF 500V D SL TR
		C736	0CC1000W105	10PF 500V D SL TR
		C737	0CQ2221N419	2200PF 100V J PE NI TP
		C738	0CE685CN638	6.8UF SHL,SD 100V 20% TP 5 FM5
		C740	0CK10302945	0.01UF 2KV Z F TR
		C741	0CQ2231N419	0.022UF 100V J PE NI TP
		C742	0CK4710K515	470PF 50V K B TR
		C743	0CE106CN638	10UF SHL,SD 100V M FM5 TP 5
		C771	0CK6810K515	680P 50V K B TS
		C772	0CK4710W515	470P 500V K B TS
		C801	0CQ6821N419	6800PF 100V J PE NI TP
		C802	181-288B	MKT 100V 104JTR PHS26104
		C803	0CE106CK638	10UF SHL,SD 50V M FM5 TP 5
		C804	181-288D	MKT 100V 473JTR PHS26473
		C805	181-475E	222J 11.5*10.0*6.0*5.0 100V J
		C806	0CE227CH638	220UF SHL,SD 25V M FM5 TP 5
		C807	181-288B	MKT 100V 104JTR PHS26104
		C808	0CC1000K115	10P 50V D NP0 TS
		C809	0CK1020K515	1000PF 50V K B TR
		C810	0CE105CK638	1UF SHL,SD 50V M FM5 TP 5
		C811	0CE476CH638	47UF SHL,SD 25V M FM5 TP 5
		C812	0CE107CH638	100UF SHL,SD 25V M FM5 TP 5
		C813	0CE106CF638	10UF SHL,SD 16V M FM5 TP 5
		C814	0CK5610K515	560P 50V K B TS
		C815	0CE227CF638	220UF SHL,SD 16V M FM5 TP 5
		C817	0CE476CH638	47UF SHL,SD 25V M FM5 TP 5

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		C818	181-288J	MKT 100V 563JTR PHS26563
		C819	181-477U	333J 19.5*13.0*7.5 250V J
		C821	0CK1040K945	0.1UF 50V Z F TR
		C823	0CK1010K515	100PF 50V K B TR
		C832	0CK10102515	100PF 2KV K B TR
		C841	0CE107CR650	100UF SHL 250V M FM7.5 BULK
		C842	0CBZTTA002A	2000F D 2.5KV J M/PP NI TP7.5
		C843	0CQ3321N419	3300P 100V J POLY NI TP
		C844	0CBZTTA002A	2000F D 2.5KV J M/PP NI TP7.5
		C845	181-288B	MKT 100V 104JTR PHS26104
		C846	0CE477CF638	470UF SHL TYPE 16V M FM5 TP 5
		C847	0CQ2221N419	2200PF 100V J PE NI TP
		C848	0CK47101515	470P 1KV K B TS
		C849	0CK6810W515	680P 500V K B TS
		C850	0CK1040K945	0.1UF 50V Z F TR
		C851	0CK1040K945	0.1UF 50V Z F TR
		C852	0CN1040K949	0.1M 50V Z F TA52
		C854	181-482J	394J 18.0*19.0*12.0*7.5 250V J
		C855	181-477Y	683JF 20.0*16.5*9.5*7.5 250V J
		C856	181-305Y	MPP 250 204J S=10.0
		C857	181-305N	105J 26.0*22.5*14.0*15.0 250V
		C858	181-303A	104J 20.5*18.5*10.5*10.0 250V
		C859	181-303C	154J 30.0*17.5*10.5*20.0 250V
		C860	0CN1040K949	0.1M 50V Z F TA52
		C861	0CN1040K949	0.1M 50V Z F TA52
		C863	0CN1040K949	0.1M 50V Z F TA52
		C864	0CN1040K949	0.1M 50V Z F TA52
		C865	0CE105CK638	1UF SHL,SD 50V M FM5 TP 5
		C891	0CZZTFT001J	ECQB1H562JM3 562J 50V TP5.0 MA
		C892	0CZZTFT001M	ECQB1H103JM3 103J 50V TP5.0 MA
		C893	181-288B	MKT 100V 104JTR PHS26104
		C894	0CZZTFT001L	ECQB1H822JM3 822J 50V TP5.0 MA
		C895	181-288B	MKT 100V 104JTR PHS26104
		C896	181-288Q	MKT 100V 154JTR PHS26154
		C902	0CKZTTA003C	SC E 472M 14.0FF7 250V TP7.5 S
		C903	0CK10101515	100PF 1KV K B TR
		C904	181-304V	393J 19.5*15.5*9.5*10.0 400V J
		C905	0CZZTAB001B	SMH/HC 470UF 400V 30*50 BK10
		C906	0CE475CN638	4.7UF SHL,SD 100V M FM5 TP 5
		C907	0CE476CH638	47UF SHL,SD 25V M FM5 TP 5
		C908	0CK1040K945	0.1UF 50V Z F TR
		C909	181-288T	MKT 100V 223KTR PHS85223
		C910	0CZZTFT001P	ECQB1H153JM3 153J 50V TP5.0 MA
		C912	0CE475CN638	4.7UF SHL,SD 100V M FM5 TP 5
		C915	0CE476CH638	47UF SHL,SD 25V M FM5 TP 5
		C916	0CKZTTA003C	SC E 472M 14.0FF7 250V TP7.5 S
		C917	0CKZTTA003C	SC E 472M 14.0FF7 250V TP7.5 S
		C920	0CK22101515	220P 1KV K B TP5
		C921	0CE227CR650	220UF SHL 250V M FM7.5 BULK
		C922	0CE227EN630	220UF KMG 100V M FM5 BULK
		C923	0CK10101515	100PF 1KV K B TR
		C925	0CE228CH618	2200U SHL 25V M FL TP5
		C926	0CE108EF618	1000UF KMG 16V M FL TP 5
		C927	0CE108CH630	1000UF SHL 25V M FM5 BULK
		C928	0CE108EF618	1000UF KMG 16V M FL TP 5
		C929	0CK1020K515	1000PF 50V K B TR
		C930	181-288H	MKT 100V 333JTR PHS 86333
		C953	0CE477CF638	470UF SHL TYPE 16V M FM5 TP 5
		C958	0CE476CH638	47UF SHL,SD 25V M FM5 TP 5
		C970	0CE476CH638	47UF SHL,SD 25V M FM5 TP 5

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		DIODES		
		D201	0DL305029BA	LTL-305DJ-OC2 TP LITEON GREEN/
		D301	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D302	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D303	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D304	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D305	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D306	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D307	0DS124409AA	1SS244 TP ROHM KOREA
		D308	0DS124409AA	1SS244 TP ROHM KOREA
		D309	0DS124409AA	1SS244 TP ROHM KOREA
		D310	0DS124409AA	1SS244 TP ROHM KOREA
		D311	0DS124409AA	1SS244 TP ROHM KOREA
		D312	0DS124409AA	1SS244 TP ROHM KOREA
		D313	0DS124409AA	1SS244 TP ROHM KOREA
		D314	0DS124409AA	1SS244 TP ROHM KOREA
		D315	0DS124409AA	1SS244 TP ROHM KOREA
		D318	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D319	0DR140059DA	1N4005TB52 TP LITEON DO41 600V
		D401	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D402	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D404	0RD4701Q609	4.70K 1/4W(3 5% TA52
		D405	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D451	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D452	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D453	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D454	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D701	0DR400409AB	UF4004 TP G.I DO204AL 400V 1A
		D702	0DR400409AB	UF4004 TP G.I DO204AL 400V 1A
		D703	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D704	0DD100009DE	RGP10G TP G.I DO204AL 400V 1A
		D706	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D707	0DD100009DA	RGP10J TP G.I DO204AL 600V 1A
		D708	0DRFJ00011A	YG339D6F208 FUJI ST TO220 -400
		D709	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D731	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D732	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D733	0DD400709CB	UF4007 TP G.I DO204AL 1000V 1
		D734	0DD400709CB	UF4007 TP G.I DO204AL 1000V 1
		D735	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D736	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D737	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D738	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D739	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D771	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D772	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D773	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D801	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D802	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D803	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D804	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D805	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D808	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D811	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D812	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D831	0DR260400AA	S2L60-4004P15 BK SHINDENGEN NO
		D833	0DR140059DA	1N4005TB52 TP LITEON DO41 600V
		D834	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D837	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D838	0DR200000EA	FMQ-G2FMS BK SANKEN NON 1500V
		D839	0DS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D840	0DD100009DA	RGP10J TP G.I DO204AL 600V 1A

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		D861	ODD140009AA	EK14 V(1) TP SANKEN E/EO-TMD 4
		D901	ODD360000DB	D3SB60 SHINDENKEN
		D902	ODD400709CB	UF4007 TP G.I DO204AL 1000V 1
		D903	ODD100009DE	RGPI0G TP G.I DO204AL 400V 1A
		D904	ODD100009DA	RGPI0J TP G.I DO204AL 600V 1A
		D905	ODS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D906	971-0054	TIN 50MM TAPING
		D907	ODS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D908	ODS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D910	ODR153979AA	1N5397GP TP G.I DO201AD 600V 1
		D911	ODS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D912	ODS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D920	ODRSD00079A	D2L20U SHINDENGEN TP DO-204AC
		D921	ODRSD00079A	D2L20U SHINDENGEN TP DO-204AC
		D922	ODR320400AA	S3L20U-4004P15 BK SHINDENGEN N
		D923	ODR360000AB	D3L60 BK SHINDENGEN ITO220 6
		D924	ODR260400AA	S2L60-4004P15 BK SHINDENGEN NO
		D925	ODS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D926	ODR260400AA	S2L60-4004P15 BK SHINDENGEN NO
		D927	ODS141489AB	1N4148 TP GRANDE DO-34 500MW 1
		D928	971-0054	TIN 50MM TAPING
		D929	ODD100009DE	RGPI0G TP G.I DO204AL 400V 1A
		ZD201	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD202	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD203	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD303	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD306	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD402	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD403	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD404	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD405	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD407	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD408	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD409	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD410	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD601	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD703	ODZ510009BE	GDZ5.1B TP GRANDE DO34 500MW 5
		ZD711	ODZ910009AH	MTZJ9.1B TP ROHM-K DO34 500MW
		ZD712	ODZ560009AG	GDZJ5.6B TP GRANDE DO-34 500MW
		ZD802	ODZ180009BD	GDZJ18B TP GRANDE DO34 0.5W 18
		ZD804	ODZ180009BD	GDZJ18B TP GRANDE DO34 0.5W 18
		ZD901	ODZ240009BJ	GDZJ24B TP GRANDE DO34 500MW 2
ICs				
		IC301	0IPRPNV009A	NT68275-00027 NOVATEK 16P, DIP
		IC302	0IPRPNS008A	LM1267NA NATIONAL SEMICONDUCTO
		IC303	0IPRPNS007A	LM2463TA NATIONAL SEMICONDUCTO
		IC304	0IPRPNS005A	LM2480NA NATIONAL SEMICONDUCTO
		IC401	0IZZTSZ179A	WT62PI WELTREND 42 ST MTP EB99
		IC402	0ISG240860A	M24C08-BN6 8DIP BK 8K SERIAL I
		IC601	0IPH486600C	TDA4866J 9P ST VERTICAL OUTPUT
		IC801	0IPRPPH005A	TDA4841PS PHILIPS 32P,SDIP ST
		IC802	0IM1625010A	M62501P 16P4 BK INTERFACE PWM
		IC901	0ISS384200A	KA3842B (PWM)
		IC904	0ISS781200F	KA7812
		IC905	0ISS780500F	KA7805
COILS & COREs				
		L304	0LA1000K119	100UH K 2.3*3.4 TP
		L305	0LA0390K119	0.39UH K 2.3*3.4 TP

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		L306	0LA0390K119	0.39UH K 2.3*3.4 TP
		L307	0LA0390K119	0.39UH K 2.3*3.4 TP
		L308	971-0054	TIN 50MM TAPING
		L309	971-0054	TIN 50MM TAPING
		L310	971-0054	TIN 50MM TAPING
		L701	6140TBZ009C	NO CORE 10UH 0.12*15MM 50.5T F
		L801	6140TYZ011B	- GET DR14*15 EB990G H-LIN
		L806	150-985N	DR10*10 4.7UH 0.16MM 322.5T
		L901	6140TBZ031B	EE36SI PFC 49MH 0.5MM 228 +/-
		FB201	125-155J	BFS2550A0FG SAMWHA 2.5*5.0MM A
		FB301	125-155A	BFD3510R2FG SAMWHA 3.5*10MM RA
		FB302	125-155J	BFS2550A0FG SAMWHA 2.5*5.0MM A
		FB303	125-155J	BFS2550A0FG SAMWHA 2.5*5.0MM A
		FB304	125-155A	BFD3510R2FG SAMWHA 3.5*10MM RA
		FB305	125-155A	BFD3510R2FG SAMWHA 3.5*10MM RA
		FB306	125-022J	FERRITE KQ-1 JS 3.5*5.0MM AXIA
		FB307	125-022J	FERRITE KQ-1 JS 3.5*5.0MM AXIA
		FB308	125-022J	FERRITE KQ-1 JS 3.5*5.0MM AXIA
		FB309	125-155J	BFS2550A0FG SAMWHA 2.5*5.0MM A
		FB310	125-155J	BFS2550A0FG SAMWHA 2.5*5.0MM A
		FB312	125-155A	BFD3510R2FG SAMWHA 3.5*10MM RA
		FB313	125-155K	BFS3550A0FG SAMWHA 3.5*5.0MM A
		FB314	125-155J	BFS2550A0FG SAMWHA 2.5*5.0MM A
		FB315	125-155A	BFD3510R2FG SAMWHA 3.5*10MM RA
		FB316	125-155A	BFD3510R2FG SAMWHA 3.5*10MM RA
		FB317	125-155A	BFD3510R2FG SAMWHA 3.5*10MM RA
		FB401	125-155J	BFS2550A0FG SAMWHA 2.5*5.0MM A
		FB402	125-155N	BFD3565R2FG SAMWHA 3.5*6.5MM R
		FB403	125-155L	BFS3580A0FG SAMWHA 3.5*8.0MM A
		FB841	125-155P	BFS2550R2FG SAMWHA 2.5*5.0MM R
		FB902	125-155H	BFS3510A0FG SAMWHA 3.5*10MM AX
		FB903	125-155C	BFD3514R2FG SAMWHA 3.5*14MM RA
		FB904	125-155H	BFS3510A0FG SAMWHA 3.5*10MM AX
		FB905	125-155C	BFD3514R2FG SAMWHA 3.5*14MM RA
		FB906	125-155H	BFS3510A0FG SAMWHA 3.5*10MM AX
		FB907	125-155J	BFS2550A0FG SAMWHA 2.5*5.0MM A
		FB908	125-155H	BFS3510A0FG SAMWHA 3.5*10MM AX
TRANSISTOR				
		Q301	0TR390409CA	2N3904 TP SAMSUNG TO92 NPN
		Q302	0TR319809AA	KTC3198-Y(KTC1815) TP KEC TO92
		Q451	0TR127009AA	KTA1270-Y(KTA562TM) TP KEC TO9
		Q452	0TR127009AA	KTA1270-Y(KTA562TM) TP KEC TO9
		Q453	0TR320209AA	KTC3202-Y(KTC1959) TP KEC TO92
		Q454	0TR127009AA	KTA1270-Y(KTA562TM) TP KEC TO9
		Q455	0TR127009AA	KTA1270-Y(KTA562TM) TP KEC TO9
		Q456	0TR320209AA	KTC3202-Y(KTC1959) TP KEC TO92
		Q701	0TR320509AB	KTC3205-Y(KTC2236A) TP KEC TO9
		Q704	0TFFN10003B	INFINEON SPA07N60C3 ST TO220F
		Q705	0TR320209AA	KTC3202-Y(KTC1959) TP KEC TO92
		Q706	0TR127009AA	KTA1270-Y(KTA562TM) TP KEC TO9
		Q707	0TR390409CA	2N3904 TP SAMSUNG TO92 NPN
		Q708	0TR319809AA	KTC3198-Y(KTC1815) TP KEC TO92
		Q721	0TR390409CA	2N3904 TP SAMSUNG TO92 NPN
		Q722	0TR390600CA	2N3906 TP SAMSUNG TO92 NPN
		Q723	0TR390409CA	2N3904 TP SAMSUNG TO92 NPN
		Q724-L	0TR463300AB	2SC4633(LS-CB11) BK SANYO LS-
		Q725-R	0TRFC10001A	FAIRCHILD KSC5042F-YDTU ST TO2
		Q771	0TR920009AB	KSP92 TP SAMSUNG TO92 HIGH VOL
		Q801	0TR558900BA	2SC5589(LG,W/M) BK TOSHIBA TO3
		Q802	0TR471009AA	KSD471AC-Y TP SAMSUNG TO92 NP

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		Q803	0TR564009AB	KSB564AC-YTA TP SANSUNG TO92 P
		Q806	0TR471009AA	KSD471AC-Y TP SAMSUNG TO92 NP
		Q807	0TR564009AB	KSB564AC-YTA TP SANSUNG TO92 P
		Q808	0TR127009AA	KTA1270-Y(KTA562TM) TP KEC TO9
		Q810	0TR114009AB	DTC114ES TP ROHM-K SPT NPN
		Q832	0TF283509AA	2SK2835(TP) TP TOSHIBA 200V 5A
		Q833	0TF306000AA	2SJ306 BK SANYO -250V -3A TO2
		Q834	0TR231609AA	KSC2316-Y TP SAMSUNG TO92L NP
		Q836	0TF630000CA	IRFS630A BK SAMSUNG 200V 6.5A
		Q837	0TF630000CA	IRFS630A BK SAMSUNG 200V 6.5A
		Q838	0TF630000CA	IRFS630A BK SAMSUNG 200V 6.5A
		Q839	0TF640000CA	IRFS640A BK SAMSUNG 200V 9A T
		Q841	0TR114009AB	DTC114ES TP ROHM-K SPT NPN
		Q842	0TR114009AB	DTC114ES TP ROHM-K SPT NPN
		Q843	0TR114009AB	DTC114ES TP ROHM-K SPT NPN
		Q844	0TR114009AB	DTC114ES TP ROHM-K SPT NPN
		Q902	0DR100609BA	MCR100-6RLRA TP MOTOROLA TO92
		Q903	0TR319809AA	KTC3198-Y(KTC1815) TP KEC TO92
		Q912	0TR127309AA	KTA1273-Y(KTA966A) TP KEC TO92
		Q913	0TR319809AA	KTC3198-Y(KTC1815) TP KEC TO92
		Q914	0TR928009AB	KSA928A-Y TP SAMSUNG TO92L PNP
		Q915	0TR319809AA	KTC3198-Y(KTC1815) TP KEC TO92
		Q920	0TR319809AA	KTC3198-Y(KTC1815) TP KEC TO92
RESISTORS				
		R201	0RD1001Q609	1K 1/4W(3 5% TA52
		R202	0RD1600Q609	160 1/4W(3 5% TA52
		R203	0RD2200Q609	220 1/4W(3 5% TA52
		R204	0RD2200Q609	220 1/4W(3 5% TA52
		R205	0RD1001Q609	1K 1/4W(3 5% TA52
		R206	0RD1600Q609	160 1/4W(3 5% TA52
		R207	0RD3300Q609	330 1/4W(3 5% TA52
		R208	0RD3300Q609	330 1/4W(3 5% TA52
		R209	0RD5600Q609	560 1/4W(3 5% TA52
		R210	0RD3600Q609	360 1/4W(3 5% TA52
		R211	0RD5100Q609	510 1/4W(3 5% TA52
		R301	0RD0752Q609	75 1/4W(3 5% TA52
		R302	0RD0752Q609	75 1/4W(3 5% TA52
		R303	0RD0752Q609	75 1/4W(3 5% TA52
		R304	0RD0332Q609	33 1/4W(3 5% TA52
		R305	0RD0332Q609	33 1/4W(3 5% TA52
		R306	0RD0332Q609	33 1/4W(3 5% TA52
		R307	0RD5601Q609	5.60K 1/4W(3 5% TA52
		R308	0RD1002Q609	10K 1/4W(3 5% TA52
		R309	0RD5601Q609	5.60K 1/4W(3 5% TA52
		R310	0RD1004Q609	1M OHM 1/4 W (3.4) 5% TA52
		R311	0RN1002F409	10K 1/6W 1 TA52
		R312	0RD0472Q609	47 1/4W(3 5% TA52
		R313	0RD1000Q609	100 1/4W(3 5% TA52
		R314	0RD1001Q609	1K 1/4W(3 5% TA52
		R315	0RD1000Q609	100 1/4W(3 5% TA52
		R316	0RD1000Q609	100 1/4W(3 5% TA52
		R317	0RD1002Q609	10K 1/4W(3 5% TA52
		R318	0RD1001Q609	1K 1/4W(3 5% TA52
		R319	0RD1000Q609	100 1/4W(3 5% TA52
		R320	0RD1000Q609	100 1/4W(3 5% TA52
		R321	0RD1002Q609	10K 1/4W(3 5% TA52
		R322	0RD1501Q609	1.50K 1/4W(3 5% TA52
		R323	0RD1102Q609	11K 1/4W(3 5% TA52
		R324	0RD1000Q609	100 1/4W(3 5% TA52
		R325	0RD1002Q609	10K 1/4W(3 5% TA52

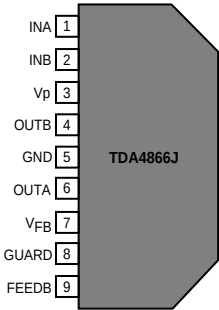
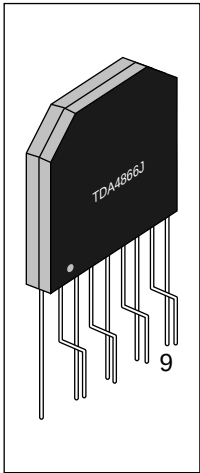
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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R326	0RD1000Q609	100 1/4W(3 5% TA52
		R327	0RD2201Q609	2.20K 1/4W(3 5% TA52
		R328	0RD2201Q609	2.20K 1/4W(3 5% TA52
		R329	0RD2201Q609	2.20K 1/4W(3 5% TA52
		R330	0RD1001Q609	1K 1/4W(3 5% TA52
		R331	0RD0472Q609	47 1/4W(3 5% TA52
		R332	0RD0472Q609	47 1/4W(3 5% TA52
		R333	0RD0472Q609	47 1/4W(3 5% TA52
		R334	0RD1000Q609	100 1/4W(3 5% TA52
		R335	0RD1000Q609	100 1/4W(3 5% TA52
		R336	0RD1500Q609	150 1/4W(3 5% TA52
		R337	0RD1800Q609	180 1/4W(3 5% TA52
		R338	0RD1200Q609	120 1/4W(3 5% TA52
		R339	0RD1004Q609	1M OHM 1/4 W (3.4) 5% TA52
		R340	0RD1004Q609	1M OHM 1/4 W (3.4) 5% TA52
		R341	0RD1004Q609	1M OHM 1/4 W (3.4) 5% TA52
		R342	0RD0332A609	33 OHM 1/2 W (7.0) 5% TA52
		R343	0RD0332A609	33 OHM 1/2 W (7.0) 5% TA52
		R344	0RD0332A609	33 OHM 1/2 W (7.0) 5% TA52
		R347	0RD1000Q609	100 1/4W(3 5% TA52
		R359	0RD0102Q609	10 1/4W(3 5% TA52
		R401	0RD3300Q609	330 1/4W(3 5% TA52
		R402	0RD1000Q609	100 1/4W(3 5% TA52
		R405	0RD4701Q609	4.70K 1/4W(3 5% TA52
		R406	0RD4701Q609	4.70K 1/4W(3 5% TA52
		R407	0RD1000Q609	100 1/4W(3 5% TA52
		R412	0RD1000Q609	100 1/4W(3 5% TA52
		R413	0RD2202Q609	22K 1/4W(3 5% TA52
		R414	0RD2202Q609	22K 1/4W(3 5% TA52
		R415	0RD2202Q609	22K 1/4W(3 5% TA52
		R416	0RD2202Q609	22K 1/4W(3 5% TA52
		R419	0RN4701F409	4.70K 1/6W 1% TA52
		R421	0RD2001Q609	2K 1/4W(3 5% TA52
		R422	0RD4701Q609	4.70K 1/4W(3 5% TA52
		R423	0RD1000Q609	100 1/4W(3 5% TA52
		R424	0RN4701F409	4.70K 1/6W 1% TA52
		R425	0RD2001Q609	2K 1/4W(3 5% TA52
		R426	0RD2001Q609	2K 1/4W(3 5% TA52
		R427	0RD4701Q609	4.70K 1/4W(3 5% TA52
		R428	0RD1000Q609	100 1/4W(3 5% TA52
		R429	0RD1000Q609	100 1/4W(3 5% TA52
		R430	0RD1801Q609	1.80K 1/4W(3 5% TA52
		R431	0RD1801Q609	1.80K 1/4W(3 5% TA52
		R432	0RD1301Q609	1.30K 1/4W(3 5% TA52
		R434	0RD2401Q609	2.40K 1/4W(3 5% TA52 (EB990G-ES)
		R440	0RD1000Q609	100 1/4W(3 5% TA52
		R443	0RD1001Q609	1K 1/4W(3 5% TA52
		R451	0RD4701Q609	4.70K 1/4W(3 5% TA52
		R452	0RD4701Q609	4.70K 1/4W(3 5% TA52
		R453	0RD1500Q609	150 1/4W(3 5% TA52
		R454	0RD6201Q609	6.20K 1/4W(3 5% TA52
		R455	0RN0270G609	0.27 1/4W 5 TA52
		R456	0RD0622A609	62 OHM 1/2 W (7.0) 5% TA52
		R457	0RD4701Q609	4.70K 1/4W(3 5% TA52
		R458	0RD4701Q609	4.70K 1/4W(3 5% TA52
		R459	0RD1500Q609	150 1/4W(3 5% TA52
		R460	0RD8201Q609	8.20K 1/4W(3 5% TA52
		R473	0RD1004Q609	1M OHM 1/4 W (3.4) 5% TA52
		R493	0RD1000Q609	100 1/4W(3 5% TA52
		R494	0RD1000Q609	100 1/4W(3 5% TA52
		R522	0RD4701Q609	4.70K 1/4W(3 5% TA52
		R601	0RD1001Q609	1K 1/4W(3 5% TA52

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R602	ORD1001Q609	1K 1/4W(3 5% TA52
		R603	ORN0111H509	1.1 OHM 1/2 W 2.00% TA52
		R604	ORD0102A609	10 OHM 1/2 W (7.0) 5% TA52
		R605	ORN5601F409	5.60K 1/6W 1% TA52
		R606	ORN6201F409	6.20K 1/6W 1% TA52
		R607	ORD6800A609	680 OHM 1/2 W (7.0) 5% TA52
		R608	ORD1000Q609	100 1/4W(3 5% TA52
		R609	ORD1000A609	100 OHM 1/2 W (7.0) 5% TA52
		R610	971-0054	TIN 50MM TAPING
		R701	ORMZTWD001C	47 OHM 7 W 5% RWR PD-TYPE
		R702	ORD1002Q609	10K 1/4W(3 5% TA52
		R703	ORD3301Q609	3.30K 1/4W(3 5% TA52
		R704	ORD2201Q609	2.20K 1/4W(3 5% TA52
		R705	ORB0150K609	0.15 OHM 2 W 5% TA52
		R706	ORD1003Q609	100K 1/4W(3 5% TA52
		R707	ORD5601Q609	5.60K 1/4W(3 5% TA52
		R710	ORD0472Q609	47 1/4W(3 5% TA52
		R711	ORN1502F409	15K 1/6W 1% TA52
		R712	ORD1003Q609	100K 1/4W(3 5% TA52
		R713	125-155J	BFS2550A0FG SAMWHA 2.5*5.0MM A
		R714	ORD1001Q609	1K 1/4W(3 5% TA52
		R716	ORD1004Q609	1M OHM 1/4 W (3.4) 5% TA52
		R717	ORD1000Q609	100 1/4W(3 5% TA52
		R718	ORN0101H409	1.0 1/2W 1 TA52
		R719	ORD0332Q609	33 1/4W(3 5% TA52
		R730	ORD4702Q609	47K 1/4W(3 5% TA52
		R731	ORD1000Q609	100 1/4W(3 5% TA52
		R732	ORD1001Q609	1K 1/4W(3 5% TA52
		R733	ORD1802Q609	18K 1/4W(3 5% TA52
		R734	ORD2001Q609	2K 1/4W(3 5% TA52
		R735	ORD5601Q609	5.60K 1/4W(3 5% TA52
		R736	ORX1001K607	1K OHM 2 W 5.00% TA62
		R737	ORD1004A609	1.0M OHM 1/2 W (7.0) 5% TA52
		R738	ORD3601Q609	3.60K 1/4W(3 5% TA52
		R739	ORD3300Q609	330 1/4W(3 5% TA52
⚠		R740	ORN1503G409	150K 1/4W 1 TA52
		R743	ORX1303K607	130K OHM 2 W 5.00% TA62
		R744	ORX1303K607	130K OHM 2 W 5.00% TA62
		R745	ORD0751Q609	7.5 OHM 1/4 W (3.4) 5% TA52
		R746	ORX1502J609	15KOHM 1 W 5% TA52
		R747	ORD3001A609	3.0K OHM 1/2 W (7.0) 5% TA52
		R748	ORD3300Q609	330 1/4W(3 5% TA52
		R749	ORD5600Q609	560 1/4W(3 5% TA52
		R750	ORN3602F409	36K 1/6W 1 TA52
		R751	ORD2000Q609	200 1/4W(3 5% TA52
		R764	ORD0472Q609	47 1/4W(3 5% TA52
		R771	ORD1101Q609	1.1K OHM 1/4 W (3.4) 5% TA52
		R773	ORD6202A609	62K OHM 1/2 W (7.0) 5% TA52
		R774	ORD4302Q609	43K 1/4W(3 5% TA52
		R775	ORD3300Q609	330 1/4W(3 5% TA52
		R776	ORD7502Q609	75K 1/4W(3 5% TA52
		R780	ORD1001Q609	1K 1/4W(3 5% TA52
		R801	ORD1502Q609	15K 1/4W(3 5% TA52
		R802	ORN2202F409	22K 1/6W 1% TA52
		R803	ORD3302Q609	33K 1/4W(3 5% TA52
		R805	ORD1002Q609	10K 1/4W(3 5% TA52
		R806	ORD1002Q609	10K 1/4W(3 5% TA52
		R807	ORD1001Q609	1K 1/4W(3 5% TA52
		R808	ORD1001Q609	1K 1/4W(3 5% TA52
		R809	ORN3902F409	39K 1/6W 1% TA52 (EB990G-EL)
		R809	ORN5102F409	51K OHM 1/6 W 1.00% TA52 (EB990G-ES)
		R810	ORD1001Q609	1K 1/4W(3 5% TA52

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R811	ORD1001Q609	1K 1/4W(3 5% TA52
		R812	ORD2201Q609	2.20K 1/4W(3 5% TA52
		R813	ORD2401Q609	2.40K 1/4W(3 5% TA52
⚠		R814	ORN1202F409	12K 1/6W 1% TA52
		R818	ORD2701Q609	2.70K 1/4W(3 5% TA52
⚠		R822	ORN3601F409	3.6K 1/6W 1 TA52
		R823	ORD2703Q609	270K 1/4W(3 5% TA52
⚠		R824	ORN4700F409	470 1/6W 1 TA52
⚠		R825	ORN1002F409	10K 1/6W 1 TA52
⚠		R826	ORN1102F409	15K 1/6W 1% TA52
		R827	ORN1002F409	10K 1/6W 1 TA52
		R830	ORD1002Q609	10K 1/4W(3 5% TA52
⚠		R831	ORN1002F409	10K 1/6W 1 TA52
		R835	ORD4700Q609	470 OHM 1/4 W (3.4) 5% TA52
		R836	ORD1002A609	10K OHM 1/2 W (7.0) 5% TA52
		R837	ORN1202F409	12K 1/6W 1% TA52
		R838	ORD0101Q609	1 1/4W(3 5% TA52
		R841	ORD5601Q609	5.60K 1/4W(3 5% TA52
		R842	ORMZTWD001A	4.7 OHM 5 W 5% B RWR
		R843	ORX1003J609	100KOHM 1 W 5% TA52
		R846	ORD0332A609	33 OHM 1/2 W (7.0) 5% TA52
		R847	ORD1000A609	100 OHM 1/2 W (7.0) 5% TA52
		R849	ORX1300J609	130 OHM 1 W 5% TA52
		R851	ORD4701Q609	4.70K 1/4W(3 5% TA52
		R853	ORD4701Q609	4.70K 1/4W(3 5% TA52
		R855	ORD4701Q609	4.70K 1/4W(3 5% TA52
		R857	ORD3001Q609	3K 1/4W(3 5% TA52
		R859	ORD0102Q609	10 1/4W(3 5% TA52
		R860	ORD2000Q609	200 1/4W(3 5% TA52
		R861	180-465Y	RWR 1.2OHM 7W.(V-TYPE)
		R862	ORN0390J607	0.39 1W 5% TA62
		R871	ORX1800K607	180 OHM 2 W 5% TA62
		R872	ORD2401Q609	2.40K 1/4W(3 5% TA52
		R873	ORD0122A609	12 OHM 1/2 W (7.0) 5% TA52
		R874	ORX0332K607	33 OHM 2 W 5% TA62
		R875	ORX0432K607	43 OHM 2 W 5% TA62
		R876	ORN3002F409	30K 1/6W 1% TA52
		R891	ORN2701F409	2.70K 1/6W 1% TA52
		R892	ORN6800F409	680 1/6W 1% TA52
		R893	ORD3301Q609	3.30K 1/4W(3 5% TA52
		R894	ORN2202F409	22K 1/6W 1% TA52
		R895	ORD1000Q609	100 1/4W(3 5% TA52
		R896	ORD1000Q609	100 1/4W(3 5% TA52
		R901	180-465H	0.24 OHM 5W 5% B RWR (NON PFC)
		R902	ORD0472Q609	47 1/4W(3 5% TA52
		R903	ORD0472Q609	47 1/4W(3 5% TA52
		R904	ORD3902Q609	39K 1/4W(3 5% TA52
		R905	ORX4702K665	47K OHM 2 W 5% SF
		R906	ORD4703Q609	470K 1/4W(3 5% TA52
		R907	ORD1000Q609	100 1/4W(3 5% TA52
		R908	ORN0220H609	0.22 1/2W 5% TA52
		R909	ORD1002Q609	10K 1/4W(3 5% TA52
⚠		R910	ORD1802Q609	18K 1/4W(3 5% TA52
⚠		R911	ORN6800F409	680 1/6W 1% TA52
		R912	ORD1001Q609	1K 1/4W(3 5% TA52
		R913	ORB0120K607	0.12 OHM 2 W 5% TA62
		R914	ORD1500Q609	150 1/4W(3 5% TA52
		R915	ORD8203Q609	820KOHM 1/4 W (3.4) 5% TA52
		R916	ORD8203Q609	820KOHM 1/4 W (3.4) 5% TA52
		R917	ORD1000Q609	100 1/4W(3 5% TA52
		R918	ORD1003Q609	100K 1/4W(3 5% TA52
		R919	ORD2002Q609	20K 1/4W(3 5% TA52

PIN CONFIGURATION

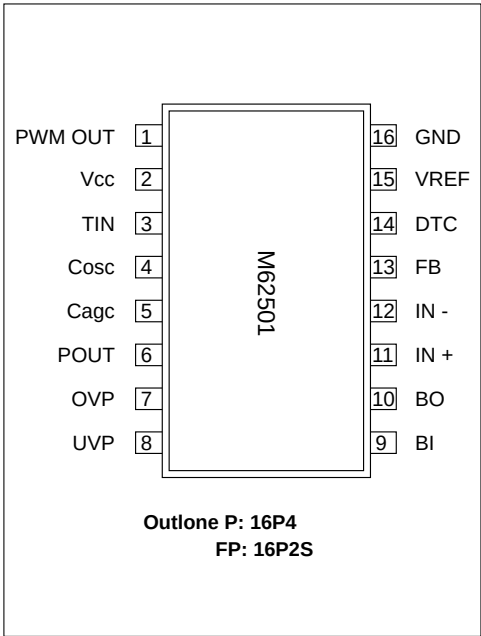
TDA4866JCurrent Driven Vertical Deflection Booster



PIN	SYMBOL
1	INA
2	INB
3	VP
4	OUTB
5	GND
6	OUTA
7	VFB
8	GUARD
9	FEEDB

M62501P /FP

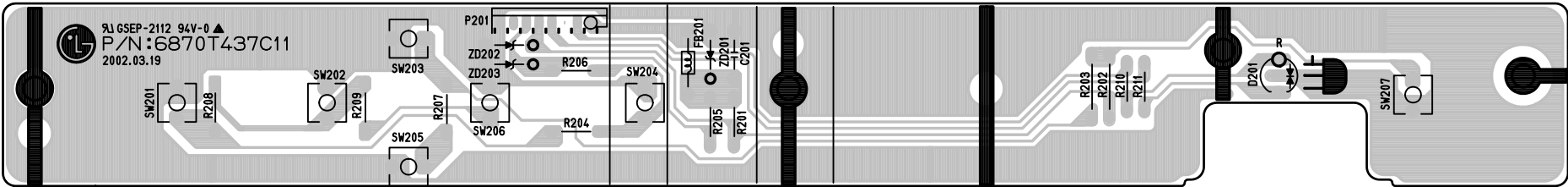
PIN CONFIGURATION(TOP VIEW)



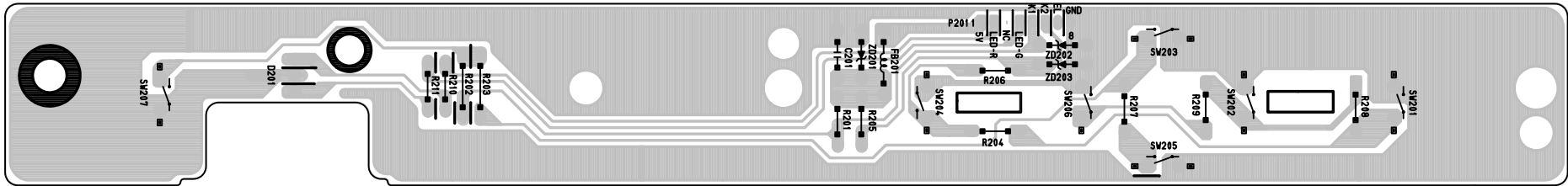
Teerminal Number and The facility

PIN NO.	Symbol	Functional Description
1	PWM OUT	PWM output terminal
2	Vcc	Power supply terminal
3	TIN	Trigger Input terminal
4	CAGC	This pin is used to set oscillating frequency
5	CAGC	This pin is used for AGC setting
6	P.OUT	Output terminal of error signal
7	OVP	Input terminal of Over Voltage Protection
8	UVP	Input terminal of Under Voltage Protection
9	BI	Postive Input terminal of Buffer Amp
10	BO	Output terminal of Buffer Amp
11	IN ⁺	Postive Input terminal of OP Amp
12	IN ⁻	Negative Input terminal of OP Amp
13	FB	Output terminal of OP Amp
14	DTC	Dead time control terminal(Soft start function)
15	VREF	Output terminal of reference voltage (5V)
16	GND	Ground terminal

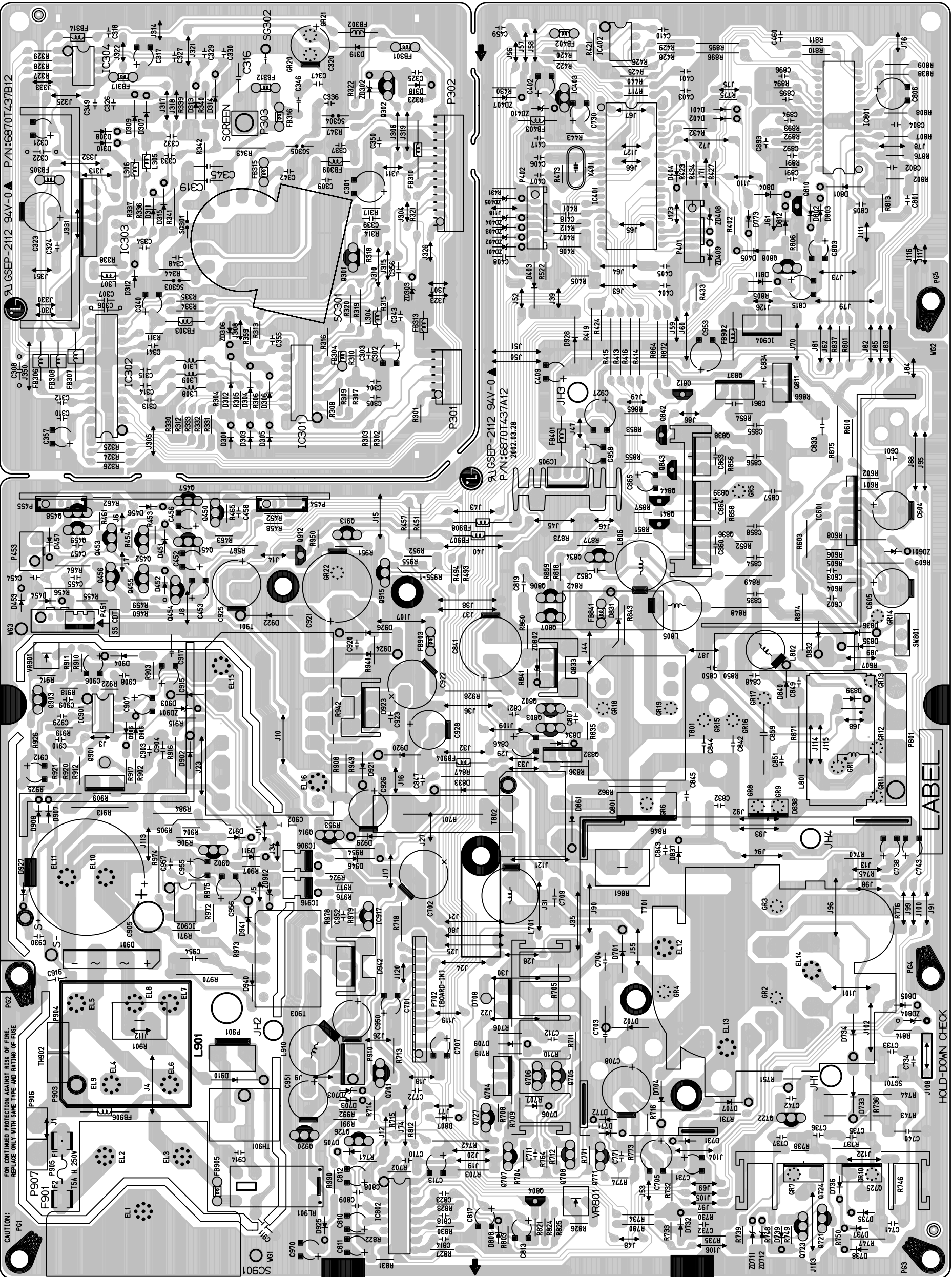
1. CONTROL BOARD (Component Side)



2. CONTROL BOARD (Solder Side)



3. MAIN BOARD (Component Side)



4. MAIN BOARD (Solder Side)

