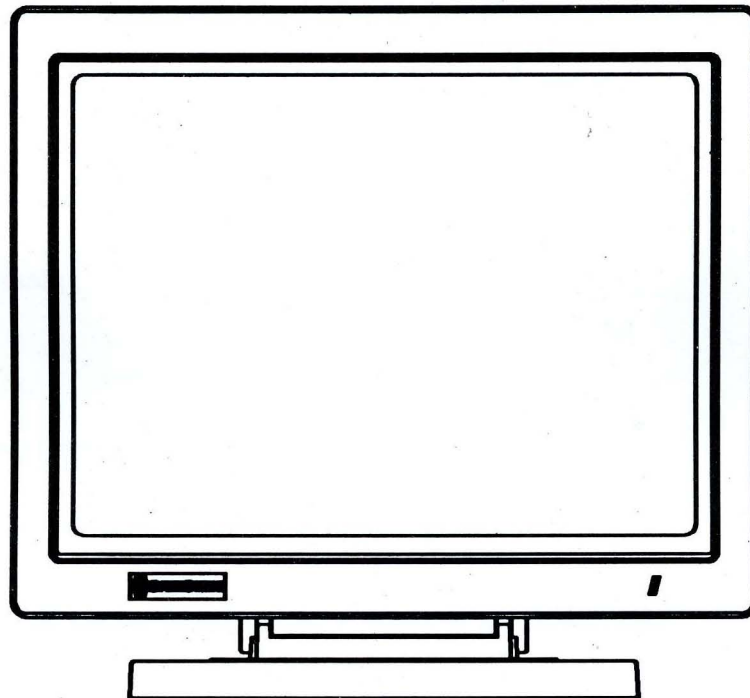




# SERVICE MANUAL

DUAL PAGE MONO MONITOR

## MU9511



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## IMPORTANT SERVICE SAFETY PRECAUTIONS

Service work should be performed only by qualified service technicians who are thoroughly familiar with all of the following safety checks and servicing guidelines:

### PLEASE READ BEFORE ATTEMPTING SERVICE

1. Line voltage must be kept within  $\pm 10\%$  of the rated voltage.
2. When operating at line voltage, confirm the DC voltage at TP1 is  $108V \pm 0.5 V$  (Adjust VR601).
3. DO NOT DISCHARGE, ARC, OR MEASURE HIGH VOLTAGE WHEN HIGH VOLTAGE LEAD IS CONNECTED TO CRT. DISCHARGE 2ND ANODE OF CRT ONLY AFTER HIGH VOLTAGE LEAD HAS BEEN DISCONNECTED. DO NOT DISCHARGE HIGH VOLTAGE LEAD AT ANY TIME, DAMAGE TO COMPONENTS MAY RESULT.
4. While the monitor is in operation, do not attempt to connect or disconnect any wires.
5. Disconnect all power before attempting any repairs.
6. When the power is on, do not attempt to short any portion of the circuit. This shorting may cause damage to the components of the circuits.

### WARNING

1. For continued safety, do not attempt to modify the circuit.
2. Disconnect the AC power before servicing.
3. Semiconductor heat sinks are potential shock hazards when the chassis is operating.

### SERVICING THE HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove the static charge by connecting a 10kohm resistor in series with an insulated wire (such as a test probe) between the chassis and the anode lead. (The AC line cord should be disconnected from the AC outlet.)

1. The picture tube in this display monitor employs integral implosion protection.
2. Replace with a tube of the same type and number for continued safety.
3. Do not lift the picture tube by the neck.
4. Handle the picture tube only when wearing shatter proof goggles and after discharging the high voltage anode completely.

### X-RADIATION AND HIGH VOLTAGE LIMITS

1. Be sure all service personnel are aware of the procedures and instructions covering X-radiation. The only potential source of X-ray in a current solidstate display monitor is the tube. However, the picture tube does not emit measurable X-ray radiation if the high voltage is as specified in the "high voltage check" instruction. It is only when high voltage is excessive that X-radiation is capable of penetrating the shell of the picture tube, including the lead in glass material. The important precaution is to keep the high voltage below the maximum level specified.
2. It is essential that servicemen have available at all times an accurate high voltage meter. The calibration of this meter should be checked periodically.
3. High voltage should always be kept at the rated value—no higher. Operation at high voltages may cause a failure of the picture tube or high voltage circuitry and, also under certain conditions, may produce radiation in excess of desirable levels.

- When the high voltage regulator is operating properly there is no possibility of an X-radiation problem.

Everytime a color chassis is serviced,the brightness should be tested while monitoring the high voltage with a meter to be certain that the high voltage does not exceed the specified value and that it is regulating correctly.

- Do not use a picture tube other than that specified or make unrecommended circuit modifications to the high voltage circuitry.
- When troubleshooting or taking test measurements on a display monitor with excessively high voltage, avoid being unnecessarily close to the display monitor. Do not operate the display monitor longer than is necessary to locate the cause of excessive voltage.

**BEFORE RETURNING THE DISPLAY MONITOR  
Fire and Shock Hazard**

Before returning the display monitor to the user,perform the following safety checks:

- Inspect all lead dress to make certain that the leads are not pinched or that the leads are not lodged between the chassis and other metal parts in the display monitor.
- Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields,isolation resistor-capacitor networks,mechanical insulators,etc.
- To be sure that no shock hazard exists,check for leakage current in the following manner:
  - Plug the AC line cord directly into a 120volt AC outlet. (Do not use an isolation transformer for this test)
  - Using two clips leads,connect 1.5 kohm, 10 watt resistor paralleled by a 1.5uF capacitor in series with all exposed metal cabinet parts and a known

earth ground such as electrical conduct or electrical ground connected to earth ground.

- Use a SSVM or VOM with 1000 ohms per-volt or higher sensitivity to measure the AC voltage drop across the resistor. (See Figure 1.)
- Connect the resistor to all exposed metal parts having a return path to the chassis(metal cabinet, screw heads, knobs and shafts,escutcheon,etc.) and measure the AC voltage drop across the resistor.
- Any reading of 0.3volt RMS (this corresponds to 0.5milliamp.AC) or more is excessive and indicates a potential shock hazard which must be corrected before returning the display monitor to the user.

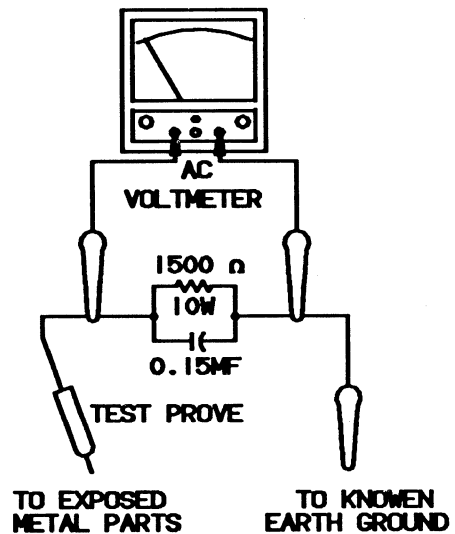


Figure 1 ,leadage current circuit

**SAFETY NOTICE**

- Many electrical and mechanical parts which have special characteristics in this chassis often pass unnoticed and the protection afforded by them can not necessarily be obtained by using replacement components rated for higher voltage,wattage,etc.

- Replacement parts that have these special safety characteristics are identified in this manual, and its supplement; electrical components having such features are identified by a ! in the Parts List and Schematic Diagrams.
- Before replacing any of these components, read the Parts List in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the Parts List may create shock, fire, or other hazards.

# SPECIFICATIONS

## MONITOR DESCRIPTION

This 19" Dual Page Monitor is operated in separate drive mode input and it is compatible with IBM

- 1. AC Power Input**(Universal power input)  
: This power input shall be operated with in  
AC 99 ~ AC 264V automatically.
- 110/120 Vac : 99 ~ 132 Vac,60Hz.
  - 220/240 Vac : 198 ~ 264 Vac,50 Hz.

**2. Power Consumption** : 80 W Max

### 3. Signal Input

Horizontal Sync

- ° Polarity : Negative
- ° Signal Level : TTL
- ° Frequency : 64.63 Khz

Vertical Sync

- ° Polarity : Negative
- ° Signal Level : TTL
- ° Frequency : 60.69 Hz

Video Signal

- ° Signal Level : ECL
- ° Band width : 100 MHz at 3dB

### 4. Input frequency

- Horizontal : 64.63 Khz
- Vertical : 60.69 Hz

- 5. Picture Tube** : CE755M20C104GKZ  
(Clinton)
- Size : 19 Inch
  - Deflection Angle : 110°
  - Phosphor : P104

### 6. Resolution

- Horizontal : 1280 Dots
- Vertical : 1024 Lines

### 7. Display size

- Horizontal : 360 ± 4 mm
- Vertical : 275 ± 4 mm

### 8. Dimension

- Height : 436.5mm
- Width : 444 mm
- Depth : 399 mm

### 9. Weight

: 24 Kg Max

## 10. ENVIRONMENTAL CHARACTERISTICS

### 1) Operating Condition

- Temperature : 0°C ~ 50°C
- Humidity : 5% ~ 95%  
(non-condensing)
- Altitude : Up to 3,000 meter

### 2) Storage Condition

- Temperature : -40°C ~ 60°C
- Humidity : 5% ~ 95%
- Altitude : Up to 12,000 meter

### 3) Drop

- Height : 46 cm
- Method : 6 Surface, 3 Side, 1 Angle

### 4) Vibration

- Amplitude : 3 mm
- Vibration : 10 ~ 20 Hz
- Sweep : 1 Minute

## 11. ELECTRICAL DESCRIPTION

- 1) Tilt : Max 0.5°

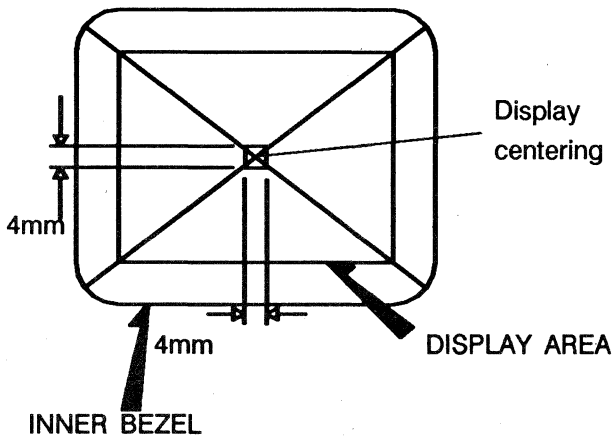
**2) High Voltage**

Anode Voltage : 18.0 KV  $\pm$  1KV

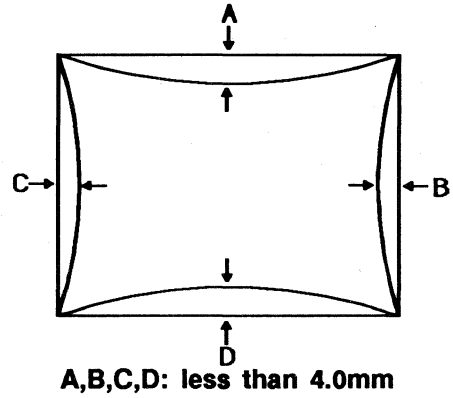
**3) Display Centering**

Vertical : The valid video area data zone shall be centered within 4 mm.

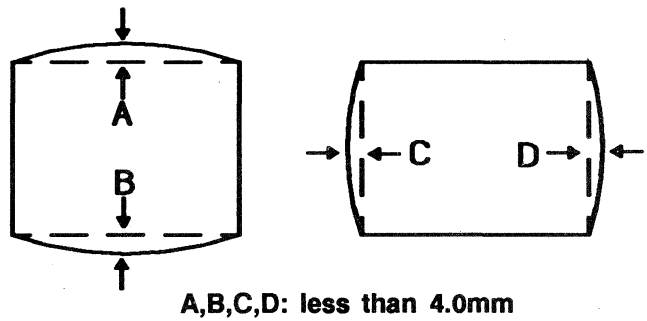
Horizontal : The valid video area data zone shall be centered within 4mm.



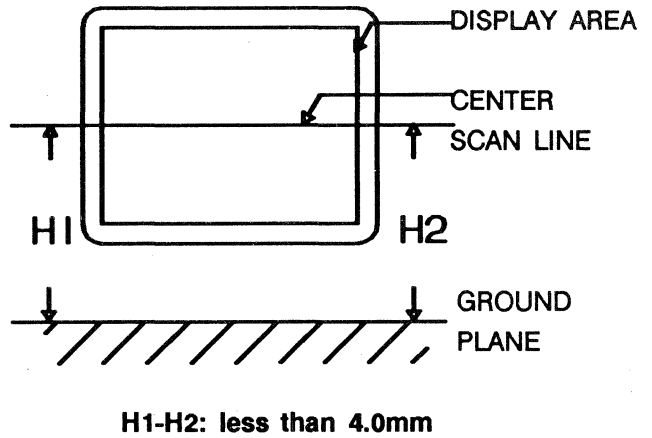
**2) Pincushion**



**3) Barrel**



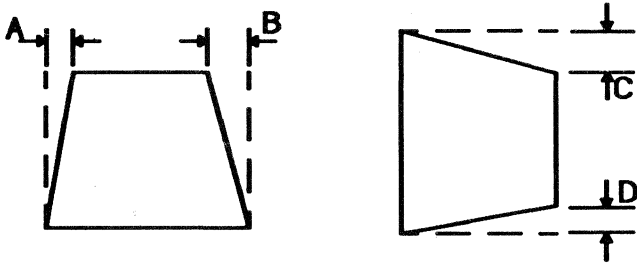
**4) Rotation**



**12. Geometric Distortion**

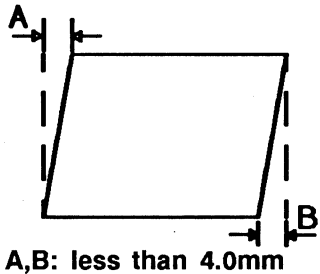
**1) Trapezoid**

A,B,C,D: less than 4.0mm



### 5) Parallelogram

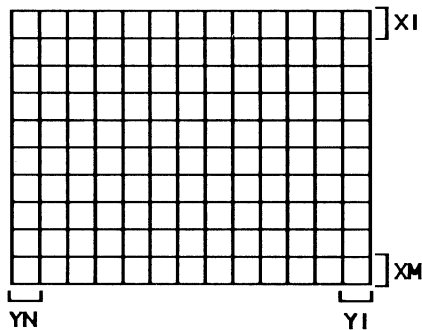
The edge of the image is within the area indicated by the dotted line below.



### 6) Linearity

Horizontal and vertical linearity shall be less than 6 %.

See Figure



Horizontal Linearity :

$$\frac{X_{max} - X_{min}}{X_{mean}} \times 0.5 \times 100(\%) < 6\%$$

Vertical Linearity :

$$\frac{Y_{max} - Y_{min}}{Y_{mean}} \times 0.5 \times 100(\%) < 6\%$$

### 7) Bright Output

Min Luminance : 0 F/L

Max Luminance : Over 30 F/L

Condition : After 30 minutes warm up full white pattern.

### 8) Screen Attribute

Input Level		Output Level	Screen Attribute
V0	V1		
1	1	0	Black (0%)
1	0	1	Dark Gray (33% ± 12%)
0	1	2	Light Gray (67% ± 12%)
0	0	3	White (100%)

### 9) Raster Size Regulation

Raster size shall change less than 0.5% with a CRT luminance from min to max.

### 10) Signal input pin connection

#### A. CDC19M VIDEO CARD

9 PIN D-SUB (TO CPU)	9 PIN D-SUB (TO MONITOR)	DESCRIPTION
PIN NO.	PIN NO.	
1	1	VIDEO ( + )
2	2	NC
3	3	H-SYNC
4	4	V-SYNC
5	5	NC
6	6	VIDEO ( - )
7	7	GND
8	8	GND
9	9	GND

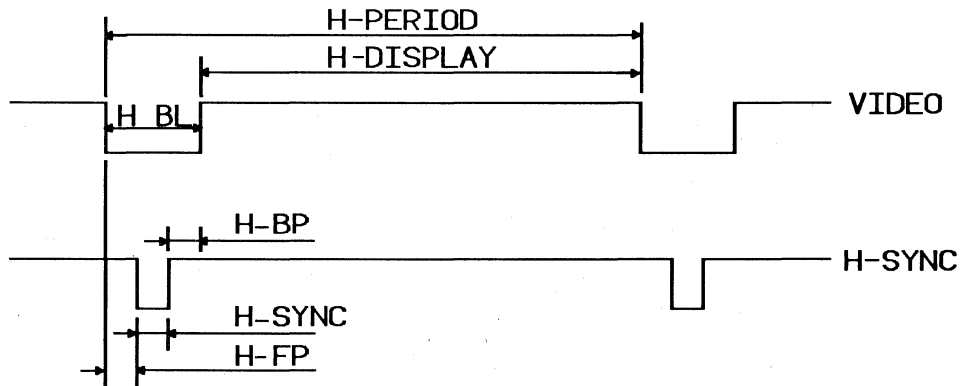
#### B. SDA1280M2 VIDEO CARD/1000 VIDEO CARD

9 PIN D-SUB (TO CPU)	9 PIN D-SUB (TO MONITOR)	DESCRIPTION
PIN NO.	PIN NO.	
1	1	GND
2	2	VIDEO 1(ECL +)
3	3	VIDEO 1(ECL -)
4	4	VIDEO 0(ECL +)
5	5	VIDEO 0(ECL -)
6	6	GND
7	7	GND
8	8	H-SYNC
9	9	V-SYNC

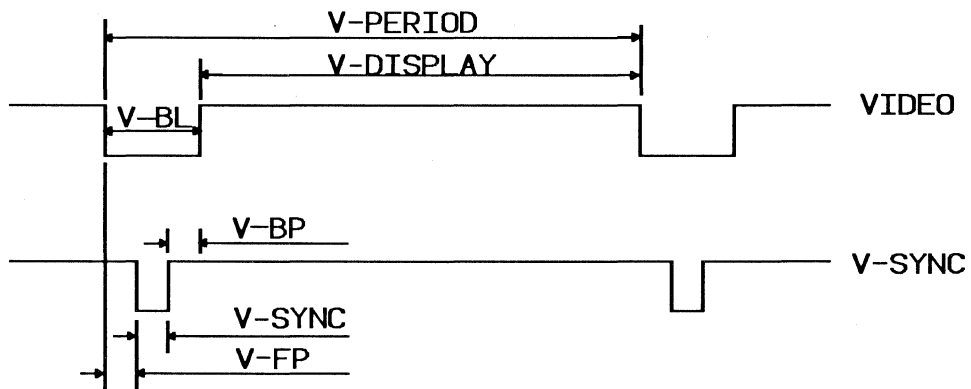


11)Signal timing chart.

**A. HORIZONTAL PERIOD**



**B. VERTICAL PERIOD**



**CDC19M VIDEO CARD**

SYMBOL	DESCRIPTION	TIME	FREQUENCY	REMARKS
H-PERIOD	HORIZONTAL FREQUENCY	15.34 uS	65.19 KHz	
H-FP	HORIZONTAL FRONT PORCH	0.36 uS		
H-SYNC	HORIZONTAL SYNC	0.72 uS		
H-BP	HORIZONTAL BACK PORCH	2.68 uS		
H-DISPLAY	HORIZONTAL DISPLAY	11.58 uS		1280 DOTS
V-PERIOD	VERTICAL FREQUENCY		61.60 Hz	
V-FP	VERTICAL FRONT PORCH	15.34 mS		
V-SYNC	VERTICAL SYNC	92.04 uS		
V-BP	VERTICAL BACK PORCH	0.37 mS		
V-DISPLAY	VERTICAL DISPLAY	15.71 mS		1024 LINES

**SDA1280M2 VIDEO CARD**

SYMBOL	DESCRIPTION		TIME	FREQUENCY	REMARKS
H-PERIOD	HORIZONTAL	FREQUENCY	15.30 uS	64.63 KHz	
H-FP	HORIZONTAL	FRONT PORCH	0.76 uS		
H-SYNC	HORIZONTAL	SYNC	0.76 uS		
H-BP	HORIZONTAL	BACK PORCH	1.89 uS		
H-BL	HORIZONTAL	BLANK	3.40 uS		
H-DISPLAY	HORIZONTAL	DISPLAY	12.08 uS		1280 DOTS
V-PERIOD	VERTICAL	FREQUENCY	16.48 mS	60.69 Hz	
V-FP	VERTICAL	FRONT PORCH	92.84 uS		
V-SYNC	VERTICAL	SYNC	77.36 uS		
V-BP	VERTICAL	BACK PORCH	464.18 uS		
V-BL	VERTICAL	BLANK	0.63 mS		
V-DISPLAY	VERTICAL	DISPLAY	15.85 mS		1024 LINES

**1000 VIDEO CARD**

SYMBOL	DESCRIPTION		TIME	FREQUENCY	REMARKS
H-PERIOD	HORIZONTAL	FREQUENCY	15.30 uS	65.36 KHz	
H-FP	HORIZONTAL	FRONT PORCH	0.09 uS		
H-SYNC	HORIZONTAL	SYNC	0.75 uS		
H-BP	HORIZONTAL	BACK PORCH	2.46 uS		
H-BL	HORIZONTAL	BLANK	3.30 uS		
H-DISPLAY	HORIZONTAL	DISPLAY	12.00 uS		1280 DOTS
V-PERIOD	VERTICAL	FREQUENCY	16.14 mS	62.00 Hz	
V-FP	VERTICAL	FRONT PORCH	0 uS		
V-SYNC	VERTICAL	SYNC	91.80 uS		
V-BP	VERTICAL	BACK PORCH	382.54 uS		
V-BL	VERTICAL	BLANK	474.30 uS		
V-DISPLAY	VERTICAL	DISPLAY	15.67 mS		1024 LINES

# THEORY OF OPERATION

## I. POWER SECTION

### 1. LINE INPUT STAGE

The input section converts the AC line voltage into a crudely filtered and unregulated DC voltage which powers the switching regulator.

#### 1) Filter

To keep noise from being conducted down the power line a low-pass filter isolates the switcher. The conducted noise is mostly differential and can be reduced by 'X' capacitors and a common mode transformer.

#### 2) Power supply

This design utilizes a discontinuous flyback topology operating in current mode. This results in a multiple output switcher who's outputs track well. No output filter chokes are needed and slower diodes can be used. The fast transit response maintains picture integrity. Cycle by cycle current limiting makes the switcher short circuit proof.

### 2. P.W.M IC STAGE

#### 1) p.w.m. integrated circuit

The UC3842 (IC601) is an integrated current mode pulse width modulator. It consists of an oscillator, error amplifier, current-sense comparator, under-voltage lockout, and an output MOSFET driver stage.

#### 2) Oscillator

The oscillator consists of a pull up resistor from the 5V reference to pin 4 and a timing capacitor to ground. When the voltage on pin 4 ramps up to 2.8V a flip flop is set. An internal current source is activated which pulls down, discharging the

timing capacitor to a 1.0V level. This resets the current source and starts the next cycle. Oscillator frequency is approximately equal to  $1/0.55RC$ . The discharge time is a function of the internal current source and the timing capacitor. The discharge time should start when the horizontal switch is turned off. It should time out in about the center of the flyback pulse. The discharge time should equal the storage delay of Q303 plus one half of the flyback time. Synchronization can be achieved by means of adding timing pulses to the timing ramp from a reference.

#### 3) Output

The UC3842 (IC601) has a single totem-pole output capable of driving 1.0A peaks and 200mA average. The peak current is self limiting.

#### 4) Current sense comparator

Current mode controllers inherently keep close watch over the switching transistors current. Pin3 is connected to a voltage comparator which shuts off the output when current reaches the desired level, as prescribed by the error amplifier. This way the controller will only let the needed amount of current be stored on the output transformer.

#### 5) Error amplifier

Voltage on pin2 is compared with an internal 2.5V 2% source. Errors in output voltage are amplified to pin1 where they are frequency compensated by an RC back to pin2. This error voltage is internally dropped by 1.4V and divided by 3 before being fed to the current comparator.

#### 6) Vcc

The UC3842 (IC604) draws very little current in start up mode. There is enough power from the line bleeders R632 and R607 to slowly charge C618 to the 16 volts need to start the switcher.

When switching begins the Vcc falls quickly but before it drops to the 10 volt turn off level the phase lock loop section of the monitor should be up and running sending power through the sync transformer to keep the UC3842 alive.

### 3. Switching Power Trans Stage

#### 1) Power Transformer

Transistor MTP4N85(Q601) starts off a cycle by allowing current to flow into the primary of T603. As current ramps up with time, the voltage across current sense resistor R621 also ramps to a point where IC604 determines enough power has been stored and turn off Q601. As the voltage on Q601 flies upward, power dumped through the main power transformer and through diodes into the different supplies. Primary ringing which could over voltage Q601 is clamped by D610. To keep radio frequency radiation to a minimum and reduce transistor heating, a turn off snubber network is placed across Q601. The transformer has a center leg gap with no gap in the outer legs. This greatly reduces the flux radiating from the cores. There also may be a large copper strap around T603 to short out stray flux.

#### 2) Rectification and Filters

Current from the secondary windings are rectified and filtered to create the desired voltages. Low internal series resistance electrolytic capacitors keep the ripple voltage low. Small high current capacitors quickly return charging current to the source.

## II.MAIN SECTION

### 1.HORIZONTAL STAGE

#### 1)PLL

A phase lock loop is used to synchronize the horizontal switch to the timing pulses from the computer. Storage delay in MJH16010A(Q303) is compensated for by the PLL. Incoming H.sync is level translated by MPS2222A(Q301) then fed into the input of the phase comparator. Transistor PN2907(Q304) watches the falling edge of the flyback pulse. When the flyback pulse falls to within a few volts of ground a raising edge is sent to the other input of the PLL phase comparator. The phase comparator is used in an edge lock mode. Integrated circuit MC14046B(IC301) pin 13 is in a high impedance mode most of the time. If the raising edges fed into pin 3 and 14 do not coincide, pin 13 goes into a low impedance state for the time difference. Depending on which edge leads the other, current will be fed into or pulled out of the filter capacitors C308 and C309

#### 2)Horizontal-Drive

Transistor VN0606M(Q302) when turned on drives off the horizontal switch MJH16010A(Q303). At the same time current is stored on the transformer T301. When VN0606M(Q302) opens up, this stored charge kicks up and supplies turn on current for MJH16010A(Q303). Resistor R302 sets the average power level to the base drive circuit. Transformer T301 is surrounded by snubbing circuits.

#### 3)Horizontal-Output

On the right hand side of the screen, transistor MJH16010A(Q303) conducts current through the deflection yoke to ground. This current comes from the "S" correction capacitor, C316 and C317, which have a charge approximately equal to the supply voltage. Diode MUR8100(D303) allows cur-

rent, for the left hand side of the screen, to flow from ground back through the deflection yoke to C316 and C317.

#### 4) Flyback Capacitor

The flyback capacitor connects the hot side of the yoke to ground. This component determines the size and length of the flyback pulse. If any adjustment is needed in second anode voltage this capacitor can be altered. Capacitors C312 and C313 must be precision high voltage high current components.

#### 5) "S" Correction

Capacitor C316, C317 are used to correct for outside versus center linearity in the horizontal scan. The voltage on C316, C317 have about 33 volts of parabola plus the DC horizontal supply. If the value of C316, C317 are reduced this parabola will increase, reducing the size of the outside characters and increasing the size of the center characters.

#### 6) Horizontal-Linearity

In the yoke current path there is a saturable coil. Just like a size coil any inductance in series with the yoke will reduce the size of the picture. This saturable coil will change inductance depending on the at the start of trace, the linearity coil has an inductance of 20 percents of that of the yoke. By the center of trace the linearity inductance has decreased to about 4 percent of the yoke where it remains for the rest of the trace. This variable inductor should be adjusted so the right and left sides of the picture are the same size.

#### 7) H/V Regulator Section

The patented high voltage regulator sits between the supply and the top of the primary of the flyback transformer. An onboard switching regulator is powered from the 12 volt supply. It watches the second anode voltage through a 300 mega ohm resistor in the flyback transformer.

During flyback the regulator pulls the top of the flyback transformer negative some amount at the same time the flyback pulse is raising the other end. In this way the size of the pulse as seen by the flyback transformer can be varied to keep the second anode voltage constant under load.

#### 8) Focus Modulation

Each part of a cathode ray tube focuses at a different voltage. The focus voltage at the center may be several hundred volts below the top and bottom with the right and left sides being at a different level. To get the best looking picture over the entire tube, the focus voltage is modulated with both a vertical and horizontal signal. The vertical parabola is fed into a high voltage amplifier 2SC3675(Q401). 2SC3675(Q401) swings the focus voltage at the vertical rate. Mixed in with this signal is another parabola at the horizontal rate which comes from L401. The focus adjustment VR401 sets the dc focus voltage and bias on 2SC3675(Q401).

#### 9) Sub-Brightness

The flyback pulse is voltage doubled to get 1200 + volts to run the master brightness potentiometer that controls G2.

### 2. VERTICAL STAGE

The TDA1670(IC201) incorporates all of the necessary functions for providing the yoke of a monitor or television receiver with the current required for vertical deflection. Incorporated in silicon are a synchronizable oscillator, ramp generator, voltage regulator, voltage doubler and power amplifier.

#### 1) Oscillator

The oscillator is an integrator (pins 4 to 3) and a two threshold comparator which switches pin 6 high or low to allow the charging/discharging of C201. D201 allows the charge and discharge ramps to have different slopes. Vertical sync pulses sent in on pin 8.

## 2) Ramp Generator

The ramp generator is made up of a current generator, controlled by current in pin 7, and the capacitor from pin 9 to ground. The slope, and thus the size of the linear ramp is adjustable by varying the current pulled from pin 7. This ramp is buffered on pin 10.

## 3) Power Amplifier

A power amplifier, with input on pin 12, compares the ramp on pin 10 to the current ramp through the yoke, R210 and C204 stabilizes the high gain power amplifier. Yoke current flows from pin 1, through the yoke, the DC blocking capacitor, a current sampling resistor, and to ground. Voltage representing yoke current is then fed back to the input of the amplifier to be compared with the reference ramp.

## 4) Voltage Doubler

In order to obtain sufficiently short flyback time, a voltage greater than that required during scanning, must be applied to the yoke. The flyback generator, during flyback only, applies to the power amplifier a voltage equal to double the supply voltage. Pin 15 charges a capacitor up to the supply voltage during trace and then sets this capacitor in top of the power supply during retrace, thus doubling the available voltage.

## 5) Vertical Linearity

The ramp from pin 10 is subtracted from the ramp across R214 and the results are fed back to the size input of the TDA1670(IC201).

## 6) Vertical "S"

The TL431(IC401) and C402 with R215 form an integrator. The vertical ramp across R214 integrated becomes the vertical parabola on the output of TL431(IC401). This parabola is fed back to the vertical size input of the TDA1670(IC201) to compensate for "S" distortion. The parabola is also used to drive the vertical focus modulator.

Diode D401 resistors R215,R402,R404 and capacitor C401 develop a bias voltage.

## 7) V-Centering

A current source is connected to the cold side of the vertical yoke. Transistor MPSU01(Q201) can pull a DC current from the yoke causing the picture to move up. Potentiometer VR204 should be set to vertically center the data, not the raster, on the screen.

# III. VIDEO SECTION

## 1. Sync stage

### 1) Sync processing

To help understand the complex sync processing, please refer to both the schematic and timing diagrams at the end of this document.

### a) Vertical sync

Vertical sync is detected by a low pass filter and an 'XOR' gate. Pin 8 of CN4A contains vertical sync.

### b) Horizontal sync

Horizontal sync undergoes several stages of processing.

### c) Polarity Restoration

The polarity restoration circuit, an XOR gate, will restore sync polarity if it was fed inverted into the TTL sync input. The RC time constant in the low pass filter is about 1 second. If the input is low with short positive pulses a low pass filter inputs a low to the XOR input B. The output of the XOR gate will be the same as the input. Likewise if the input is high with short low going pulses the low pass filter will input a high to the B input of the XOR gate causing it to invert the

sync. This way the syncs coming out of the polarity restoration circuit will always have short positive pulses except during vertical.

## 2) H-PHASTE

The second half of the 74LS221 is used for data centering. The one shot triggers with the reading edge of sync and time out with the back edge of the flyback pulse. The data centering potentiometer should be set to center the picture within the raster

## 3) Video-amplifier

The video amplifier card resides on the neck of the tube.

## 4) Pre-amplifier

The MC10H125(IC112) is a quad translator for interfacing data and control signals between the MECL section and saturated logic sections of digital systems. The MC10H125(IC112) incorporates differential input and schotky TTL "totem pole" outputs.

## 2) Power Video Amplifier

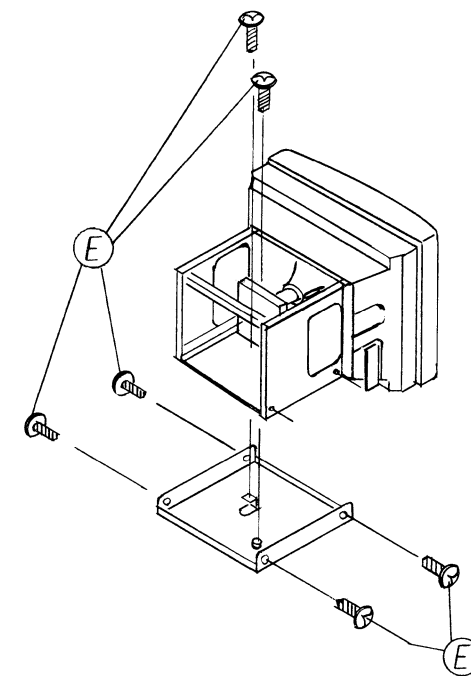
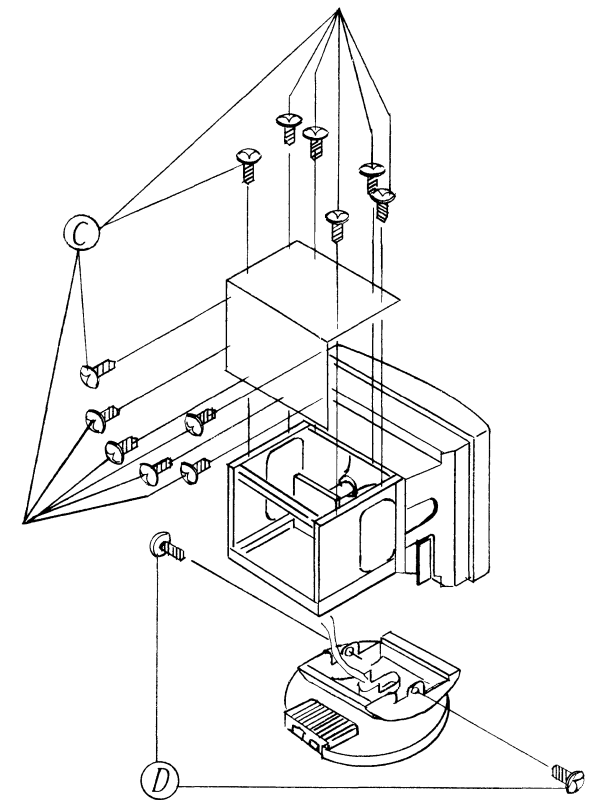
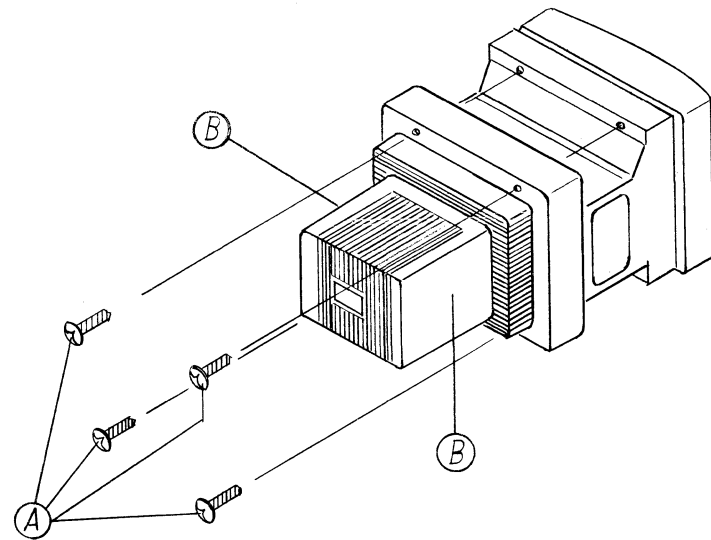
This two transistor cascade amplifier has both emitter and collector peaking to get the best frequency response. The resistor on the base reduces the chance of oscillation and also helps to protect the amplifier from tube arcs. The output of the amplifier is further isolated from tube arcing by a carbon composition resistor and an arc arrestor.

## 3) Regulators

Three voltages are used to run the video amplifier and sync processing circuit. The 50 volts is used by the video power output amplifier. The -8 volts is reduced to -5 volts by the 7905 regulator for used by MC10H125.

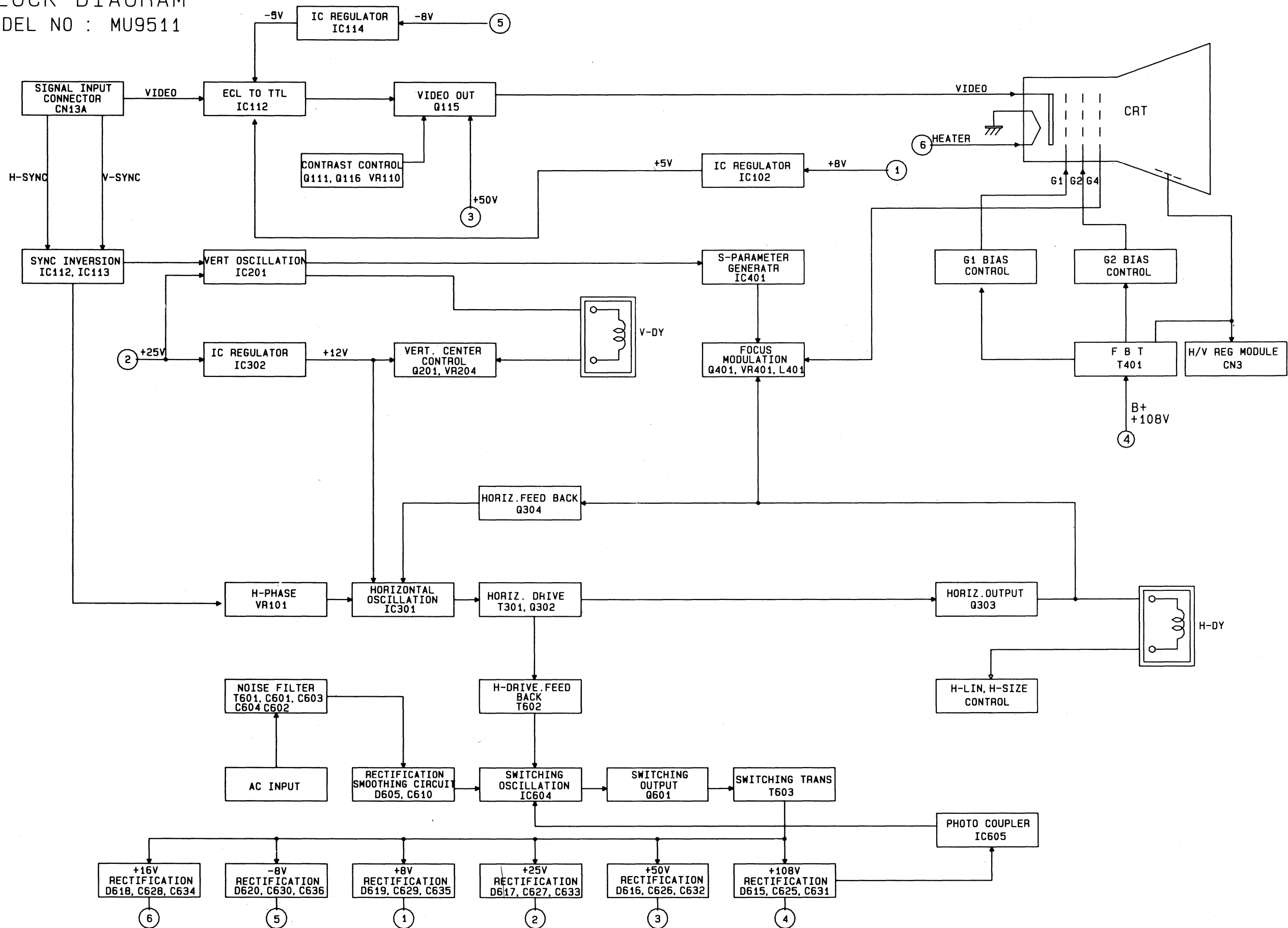
## DISASSEMBLY INSTRUCTIONS

1. Remove four screws(A) to remove back-cover from the front.
  2. Pull the rear cover backward as pushing the two points (B) in the direction of the arrows to separate from the front cover.
  3. Remove twelve screws (C) to remove top chassis-frame from the main chassis-frame.
  4. Remove two screws (D) to remove stands from the chassis-frame.
  5. Remove six screws (E) to remove bottom chassis-frame from the main chassis-frame.
- NOTE:** Refer to the EXPLODED VIEW for a more detailed disassembly procedure.





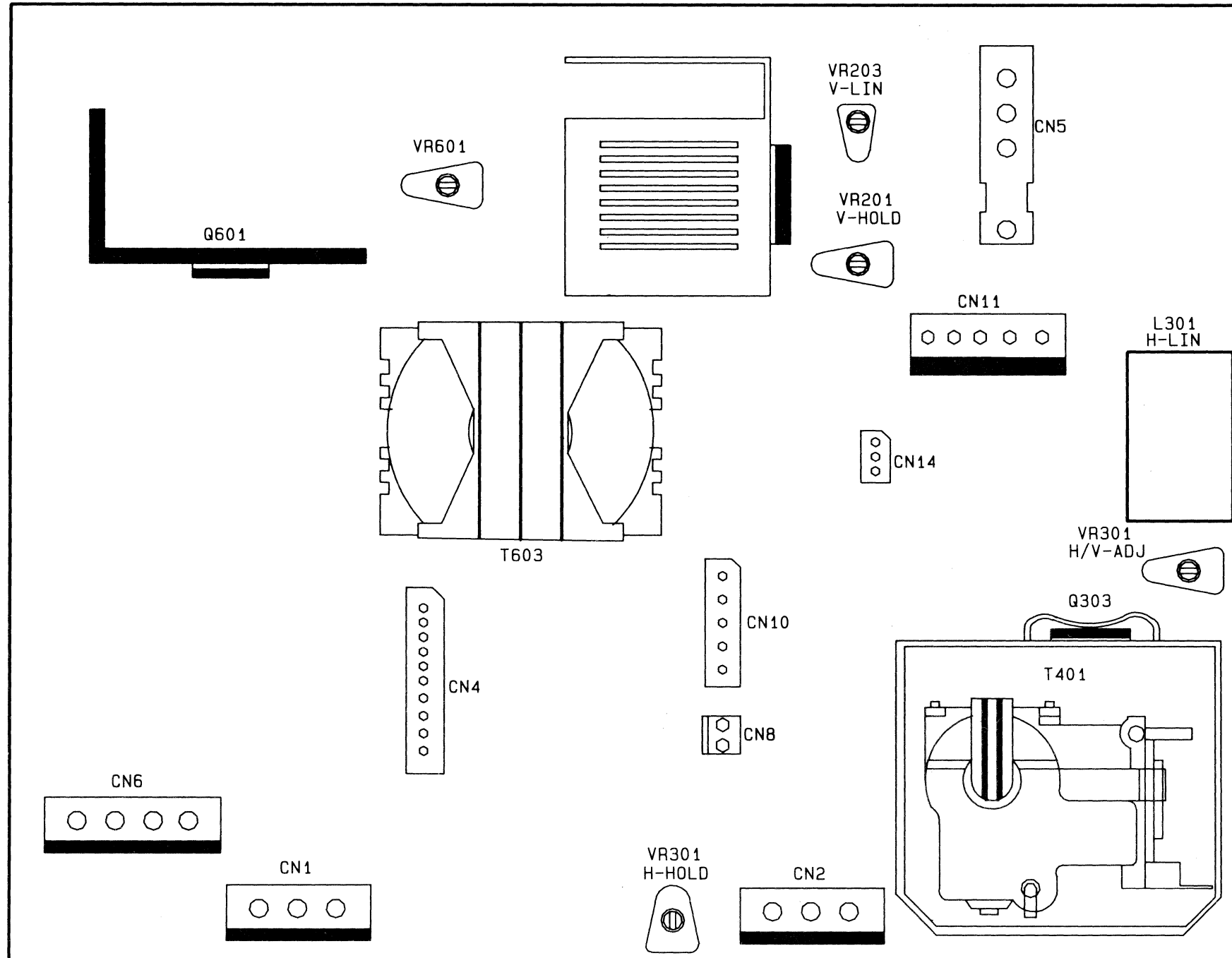
BLOCK DIAGRAM  
MODEL NO : MU9511



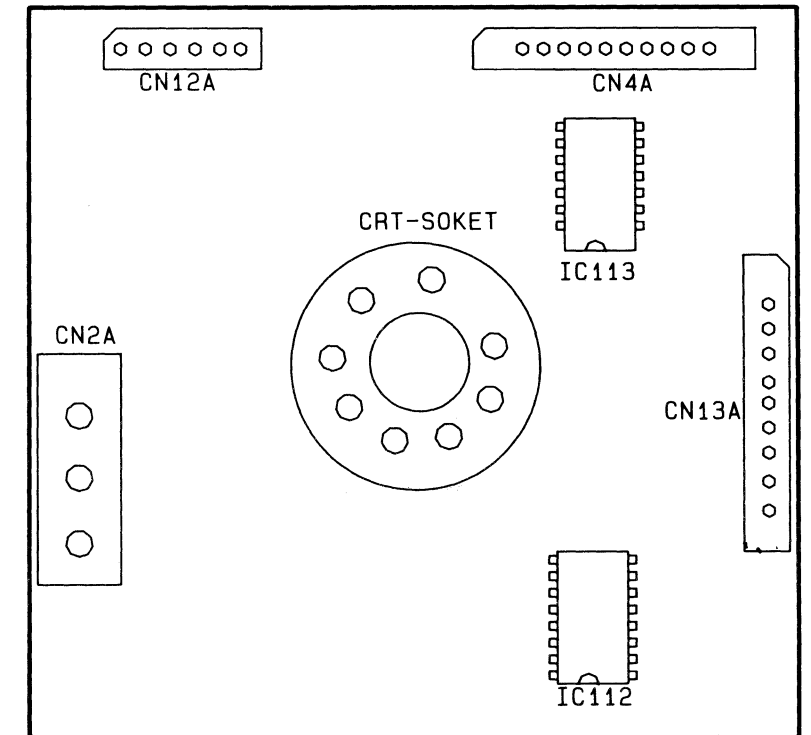
# ALIGNMENT INSTRUCTIONS

## 1. PARTS LOCATION AND CONTROL FUNCTION.

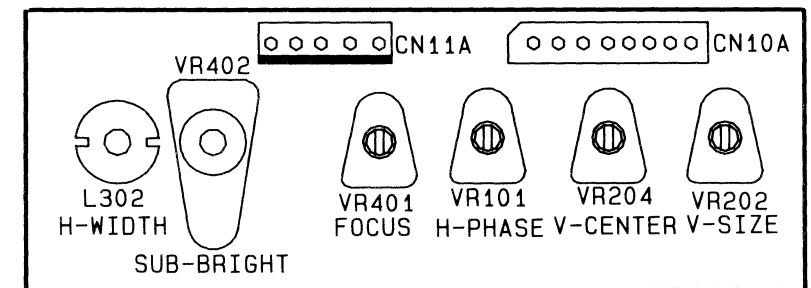
### MAIN PCB



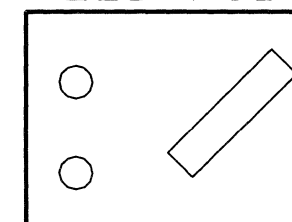
### VIDEO PCB



### SUB-PCB



### LED PCB



## 2. PRE-ASSEMBLY INSPECTION AND HANDLING INSTRUCTIONS

### Caution:

Be sure all handling of the CRT display is done by the CRT mounting brackets. At no time should the wires be used as a means of moving or carrying a given CRT display. The CRT neck is the most fragile part of the CRT display module and extreme care should be taken not to bump, tap, or otherwise excess force on this neck. Before applying power to the CRT display an inspection should be performed to insure that any foreign material has not been dropped in any part of the CRT display.

1. Insure that the proper signal and power connections are made in accordance.
2. Apply power to CRT display under test and allow CRT display to stabilize for a minimum of 30 minutes.  
**Note:** All adjustments have at the factory. This procedure is to insure that these adjustments have been made correctly.
3. When turn external brightness control to maximum and raster should be slightly visible.
4. Check CRT display for proper centering.
5. Check CRT display for the specified active character area per page 5~6 of this manual.
6. Check geometric distortion.
7. Check focus.
8. Check power supply voltages in accordance per page 5 of this manual.

### 3. CAUTION FOR SERVICING

Be sure to provide power supply sequence of more than 100mS.

#### power ON-OFF

Do not turn OFF power supply when the CRT heater is not sufficiently heated. Otherwise, CRT may be burned in spot.

In case of servicing or replacing CRT, high voltage sometime remains in the anode of CRT. So, completely discharge high voltage before servicing or replacing CRT so as to prevent a shock to the serviceman.

In this case, discharge to the external conductive coating(aquadac) of CRT.

Discharging to other places will cause troubles. The heat sink of horizontal output transistor is applied with B<sup>+</sup>. So, do not earth it in case of servicing.

In case of storing or transporting it, be sure to take some countermeasures for static electricity. When using a soldering iron, be sure to connect it to the earth. The unused terminal should be soldered without fail.

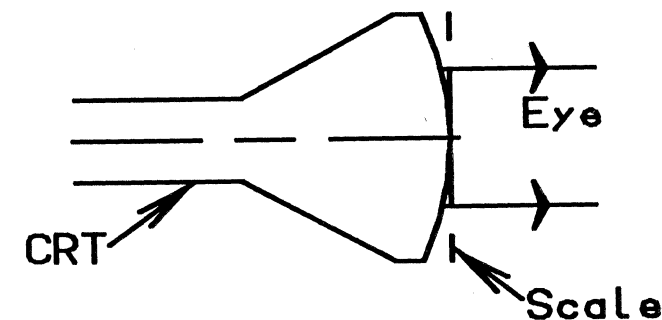
## 4. ADJUSTMENT PROCEDURE

### (1) Condition of adjustment procedure

- 1) **Input power** : 120VAC,60 Hz  
220 VAC/240 VAC, 50 Hz
- 2) **Warm up time** : More than 30 minutes
- 3) **Contrast** : Max
- 4) **Brightness** : 25 F/L
- 5) **Pattern** : Unless otherwise specified, cross-hatch pattern.

### (2) Caution

- 1) Unless otherwise specified, adjustment and check should be made under the standard condition.
- 2) To be sure image width, height and distortion, proceed as below:



- \* **CRT fase** : west
- \* **Measure level with respect to tube axis.**

- 3) Unless otherwise specified, make DC voltage measurement using a digital voltmeter.
- 4) Hold the CRT surface illumination to 25 F/L at the time of adjusting the brightness and also confirm them.

### (3) Adjustment Item

#### 1) Power Supply Adjustment

- a. Condition: Without Signal
- b. First adjust the power supply unit before adjusting all controls. Also connect the power supply unit to the display unit and turn the unit on.
- c. Turn VR601/(B<sup>+</sup>ADJ) to adjust the voltage across the TP1 and the ground to 108V ± 0.5V.

#### 2) H-HOLD Adjustment

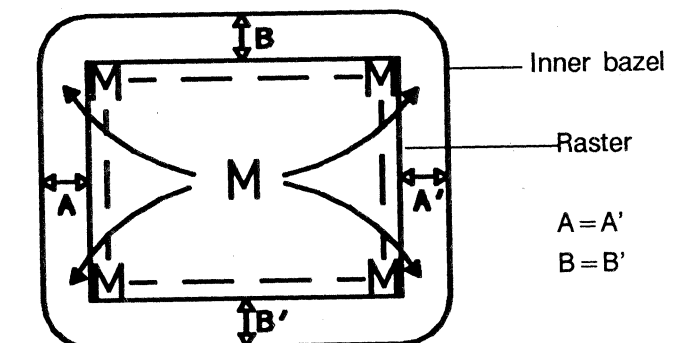
- a. Condition: Without Signal
- b. Turn VR301 (H-HOLD VR) to adjust the frequency count between the H-DY wire (blue) and ground (chassis bracket) to 62.5±0.5KHz.

#### 3) V-HOLD Adjustment

- a. Condition: Without Signal
- b. Turn VR201 (V-HOLD VR) to adjust the frequency count between the V-DY wire (yellow) and ground (chassis bracket) to 55±2Hz.

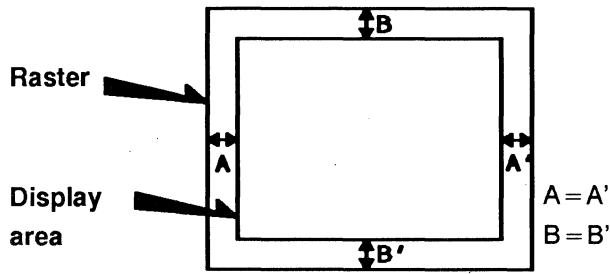
#### 4) Raster-Centering Adjustment

- a. Condition: Without Signal
- b. Locate VR402 (SUB-BRIT.VR) and EXT-BRIT.VR to max position.
- c. Turn Centering-magnet until raster comes to the center of the screen.



### 5) H-PHASE Adjustment

- Condition: Cross-Hatch Pattern
- Locate VR402 (SUB-BRIT.VR) EXT-BRIT. VR and EXT-CONT. VR to max position.
- Adjust display area to horizontal center of raster using VR101 (H-PHASE VR).



### 6) V-CENTER ADJUSTMENT

Adjust VR204 to locate display area at the CRT center. ( $B = B'$ )

### 7) Tilt Adjustment

Loosen the deflection yoke clamp, and turn in the arrow directions to adjust the tilt within 0.5.

### 8) Geometric Distortion Adjustment

Adjust each correcting magnet to set rightly until the square line of the Cross-Hatch pattern becomes to be linear. (to come within Over Lay jig).

### 9) High Voltage Adjustment

- Condition: With Signal
- Locate EXT-BRIT.VR and EXT-CONT.VR to max position.
- Connect H/V meter probe ( - ) terminal to ground (chassis bracket) and ( + ) terminal to anode cap of CRT.
- Turn VR302 (H/V-ADJ VR )to adjust  $18KV \pm 1KV$ .

### 10) H-Linearity, V-linearity Adjustment

- Condition: Cross-Hatch Pattern
- Adjust L301 (H-LIN. COIL) to make same character size of horizontal axis.
- Adjust VR203 (V-LIN VR)to make same character size of vertical axis.

### 11) H-Size,V-Size Adjustment

- Condition : Cross-Hatch pattern
- Adjust L302 (H-WIDTH COIL) to come within Over-Lay Jig.
- Adjust VR202(H-Size VR) to come within Over-Lay Jig.

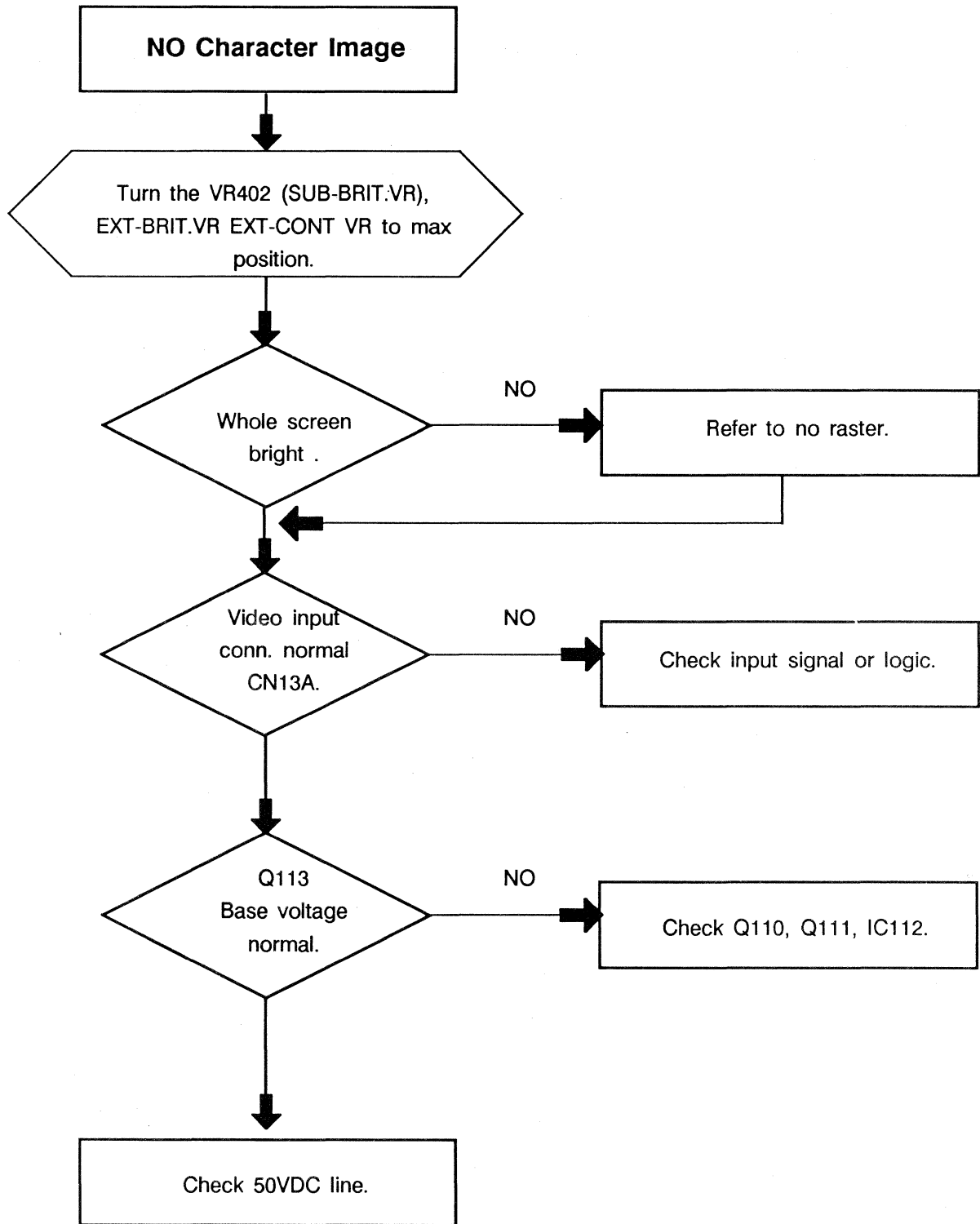
### 12) Sub-Brightness Adjustment

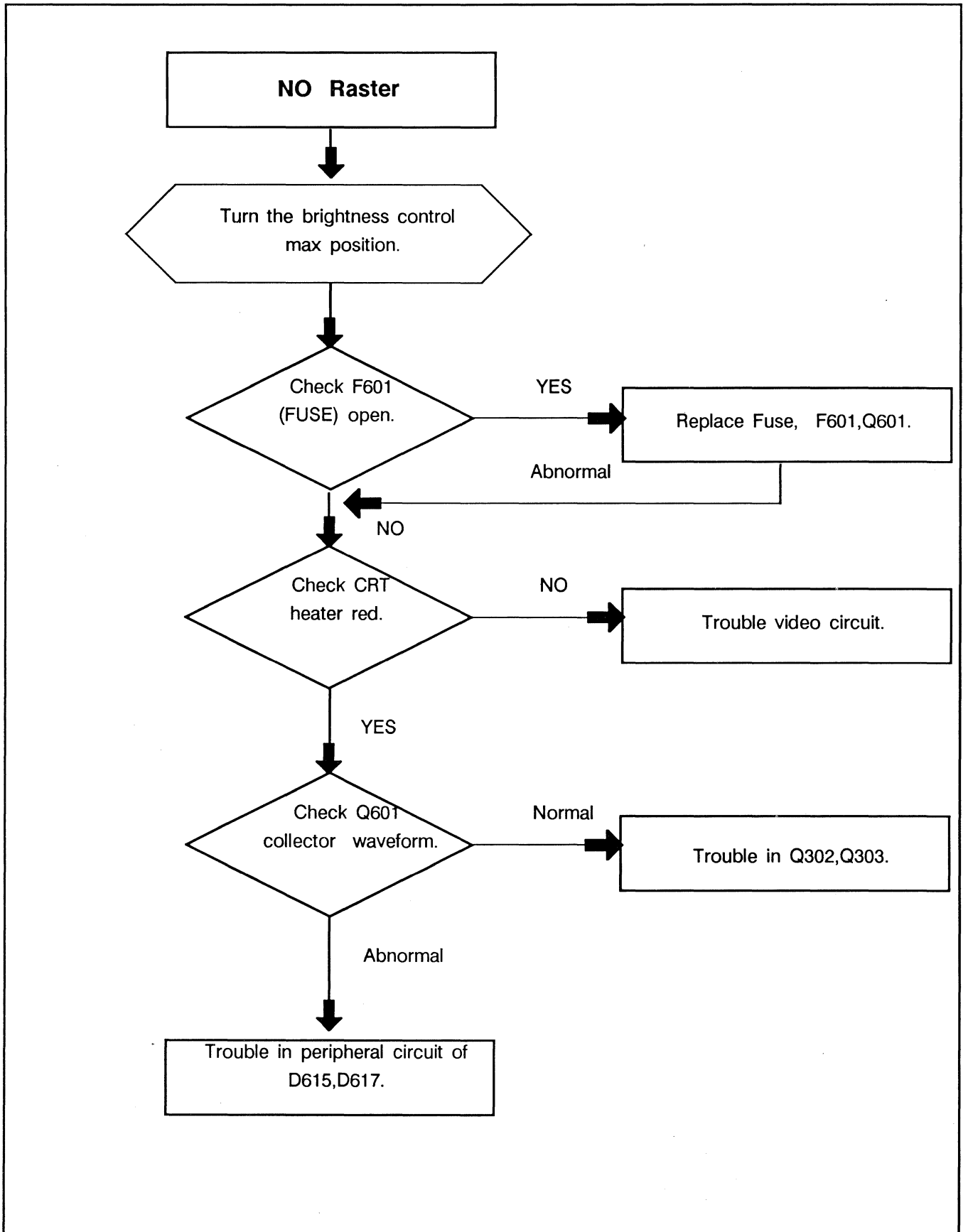
- Condition : Full White Pattern
- Turn VR402 (SUB-BRIT VR) to adjust 33 F/L Min.

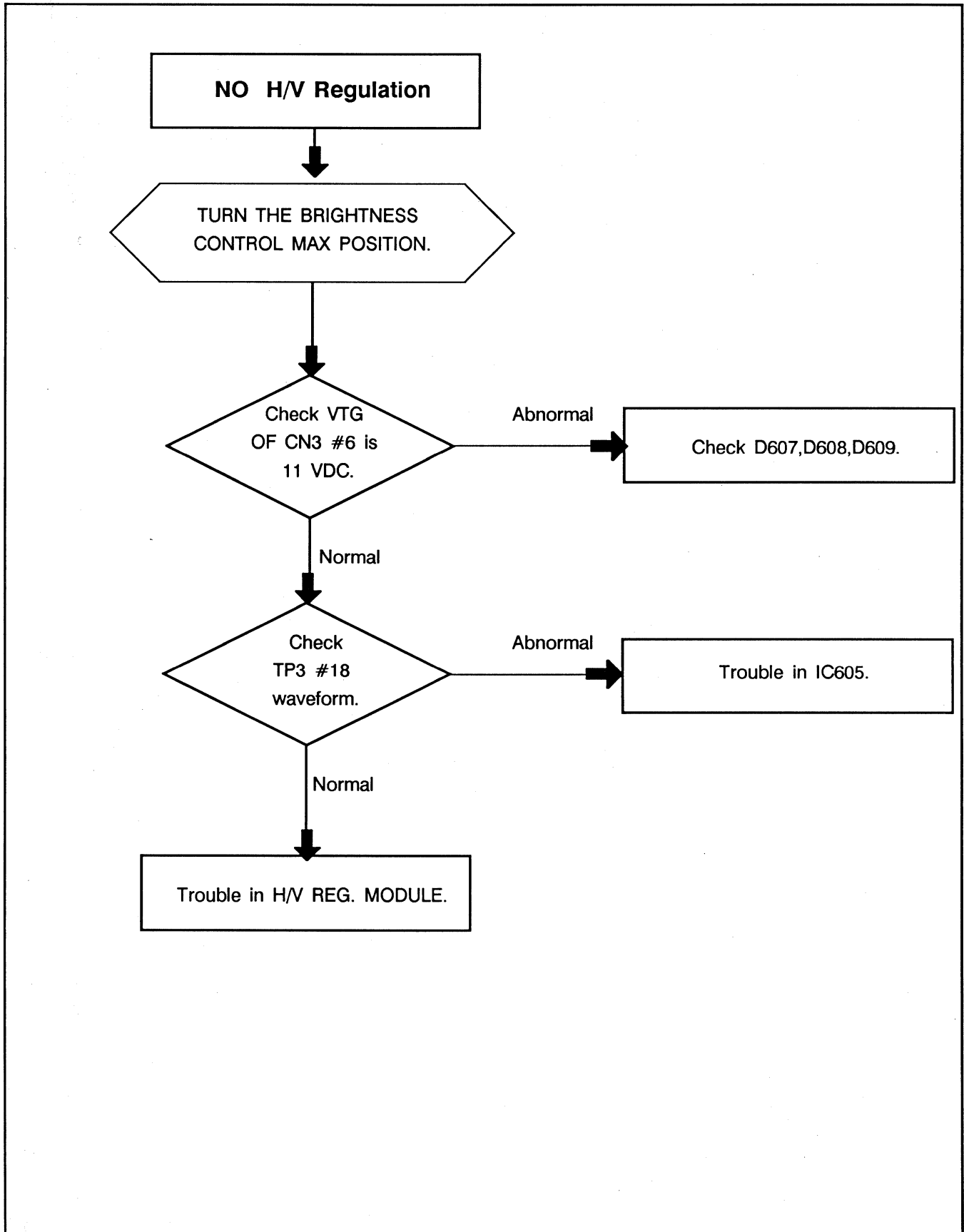
### 13) Focus Adjustment

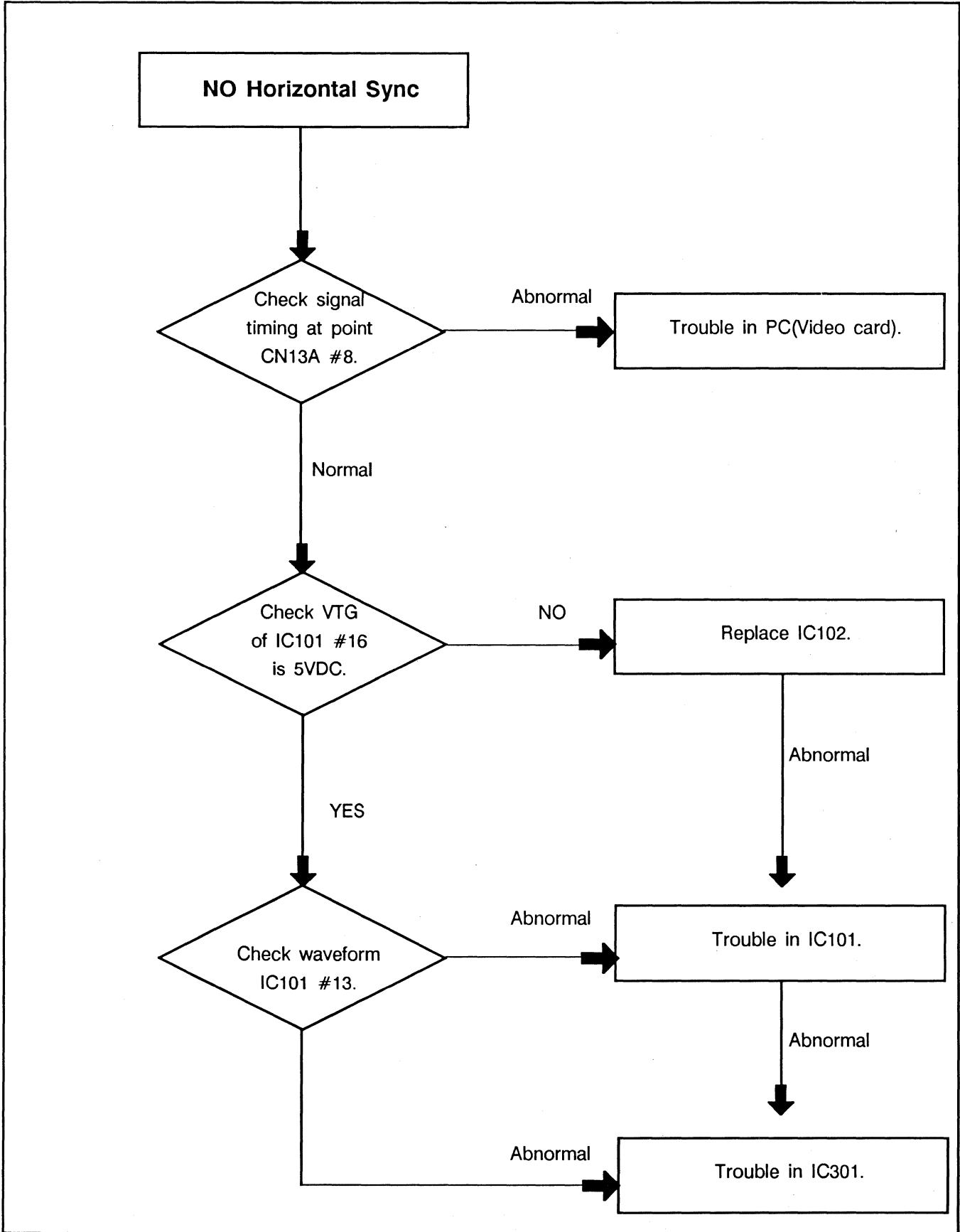
- Condition : Full "@" Character at 20 F/L.
- Adjust VR401 (FOCUS VR) to set best condition.

# TROUBLE SHOOTING GUIDE

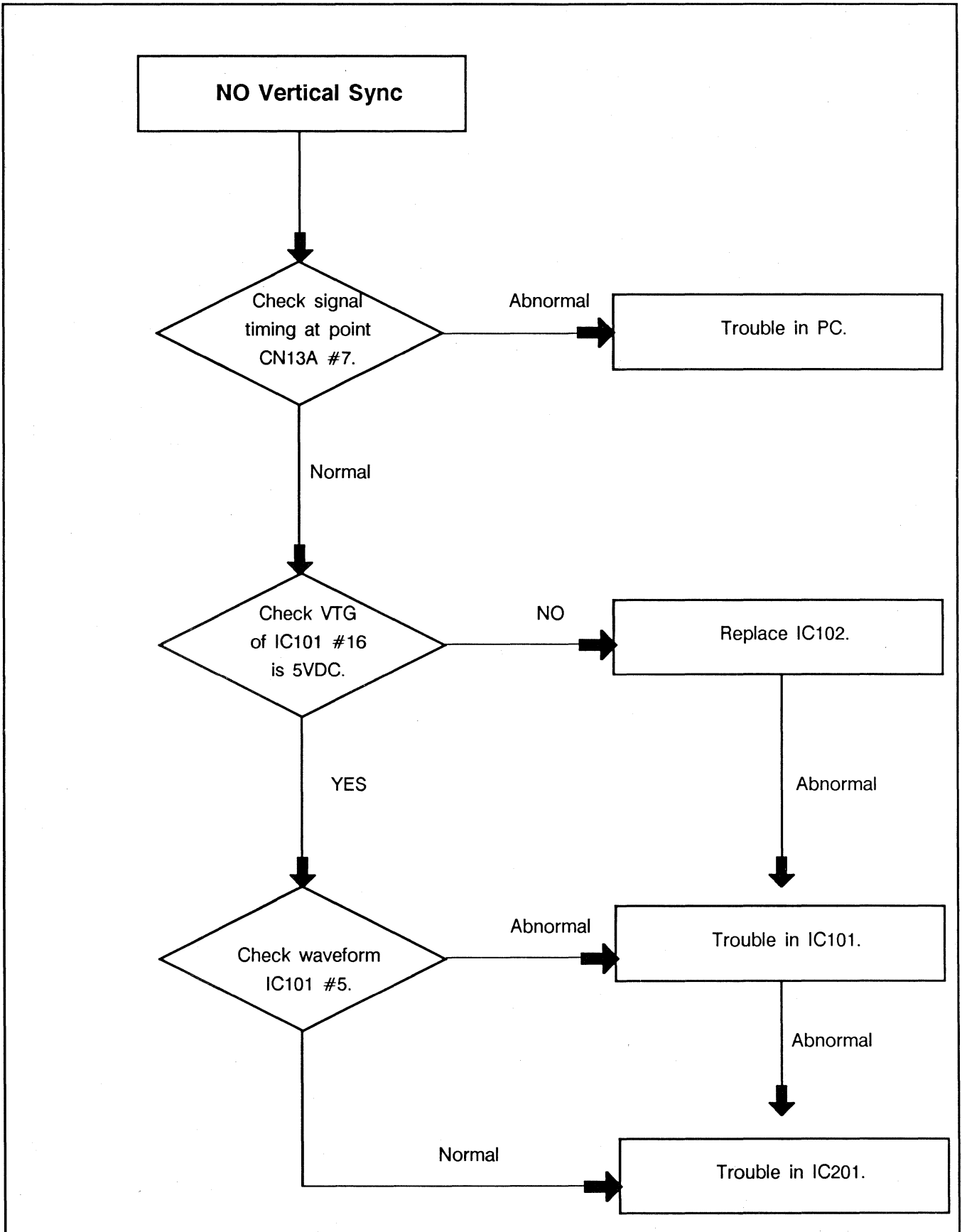


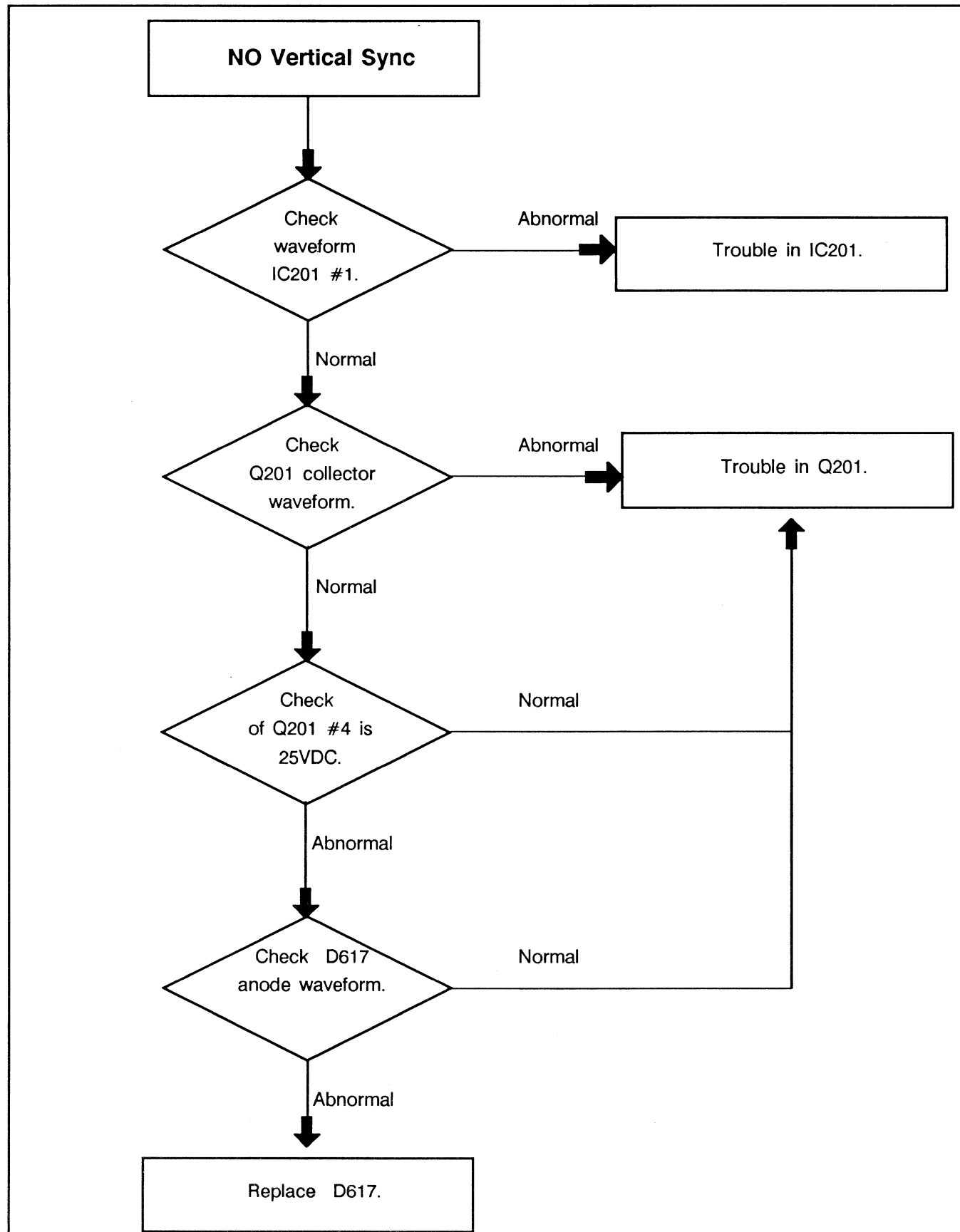




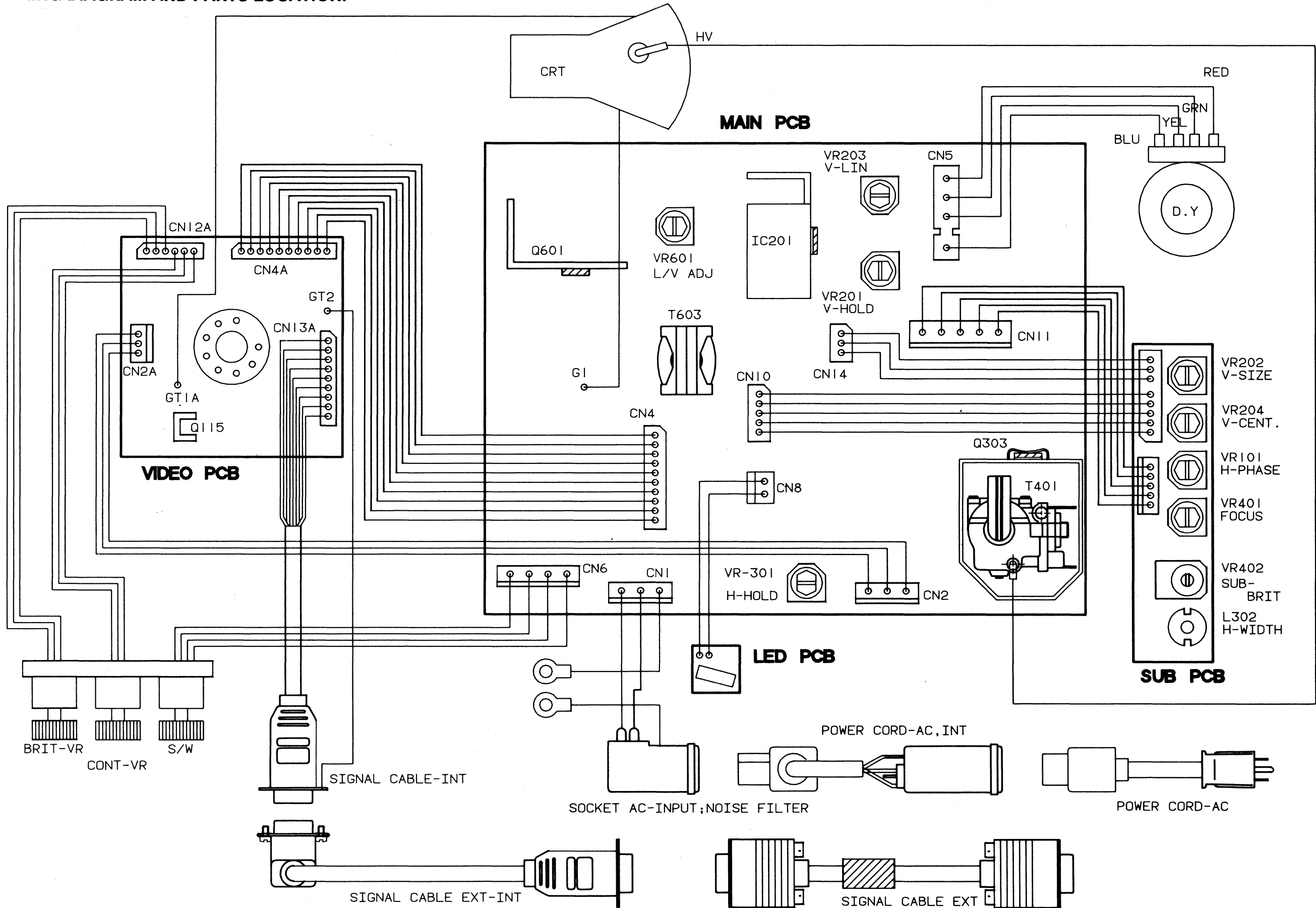






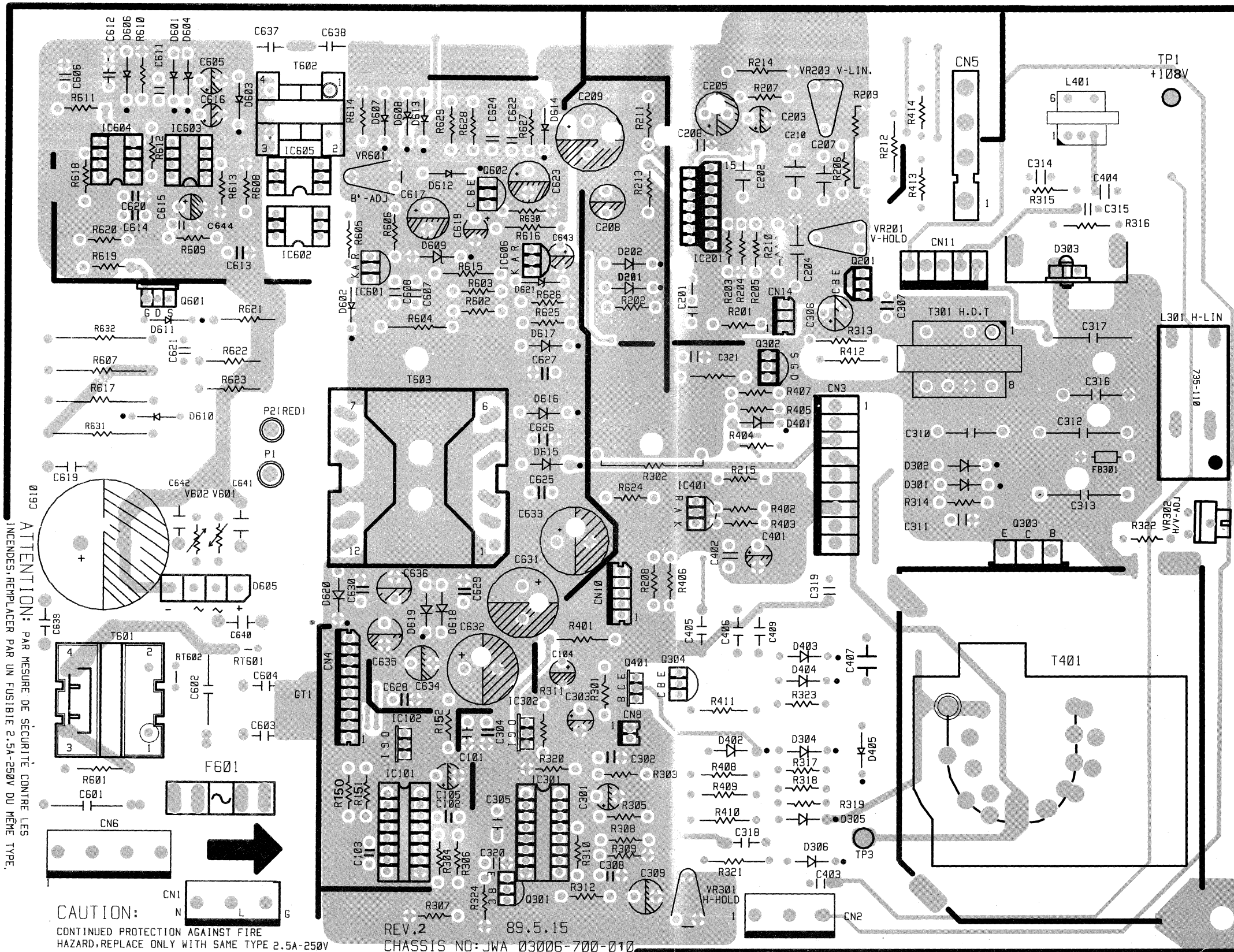


**WIRING DIAGRAM AND PARTS LOCATION.**



# PRINTED CIRCUIT BOARD

## MAIN PCB(TOP VIEW)

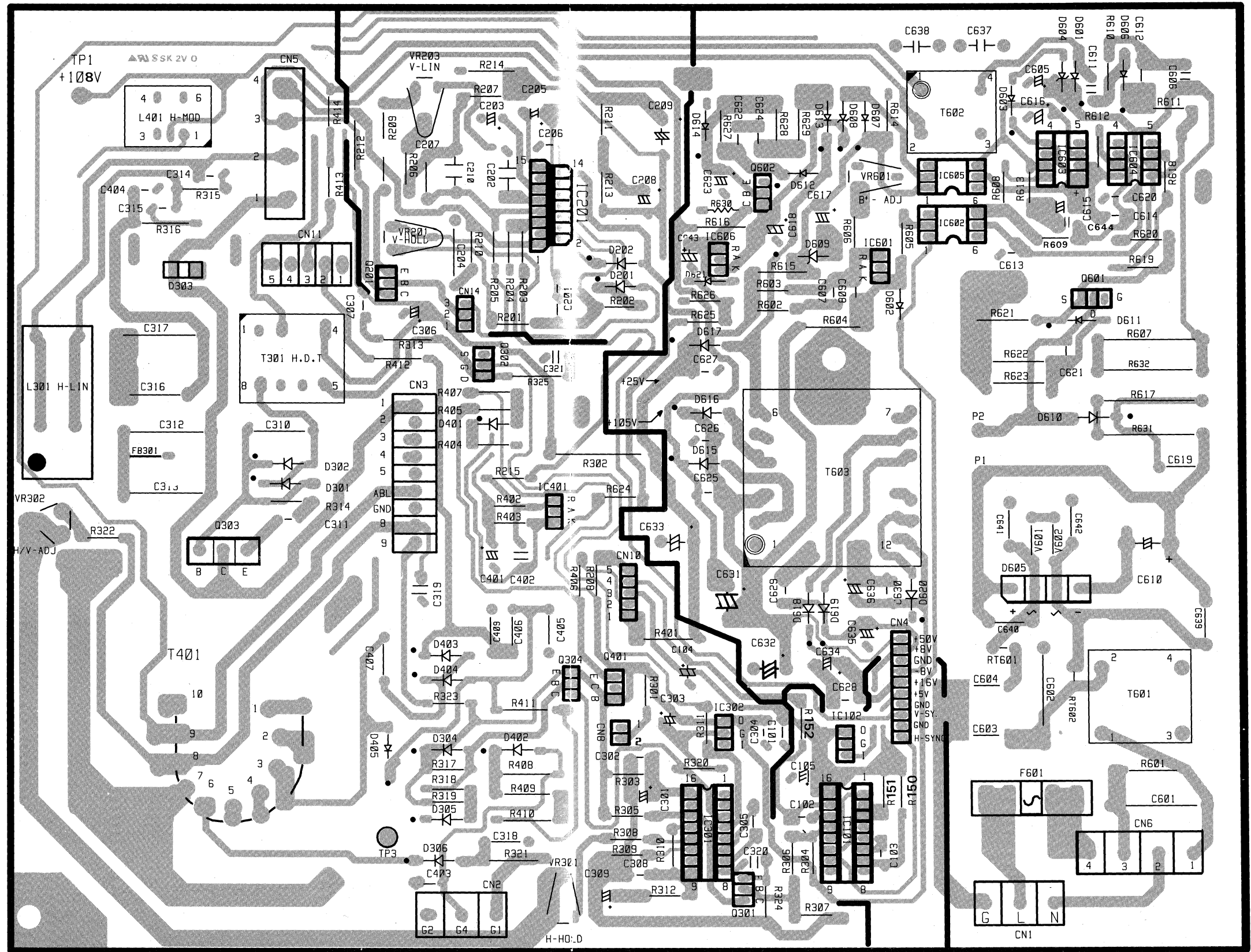


ATTENTION: PAR MESURE DE SECURITE CONTRE LES INCENDES, REMPLACER PAR UN FUSIBLE 2.5A-250V DU MEME TYPE.

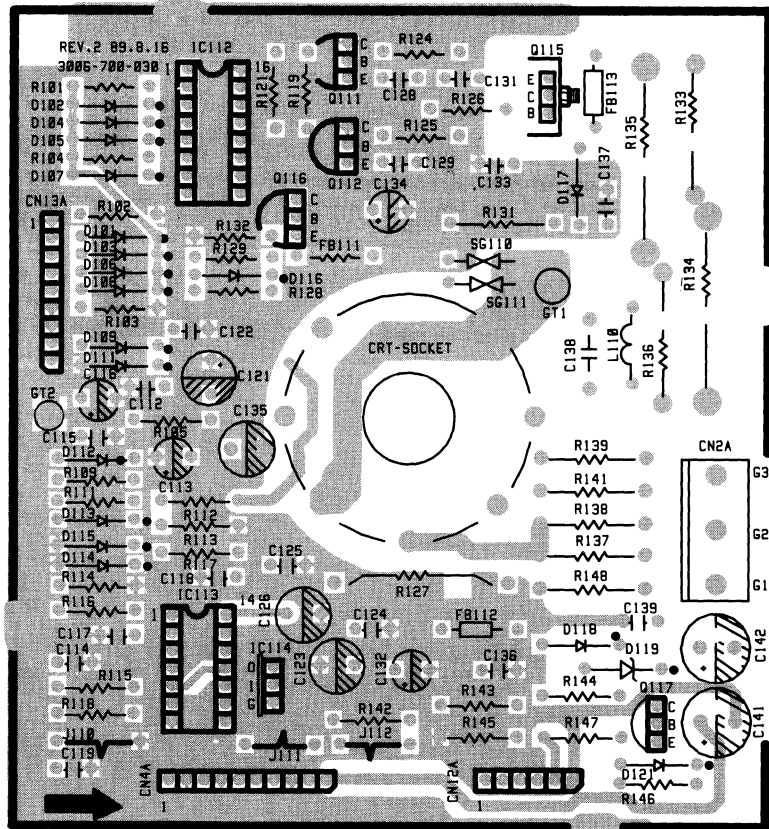
CAUTION: CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE 2.5A-250V

REV. 2 89.5.15 CHASSIS NO: JWA 03006-700-010

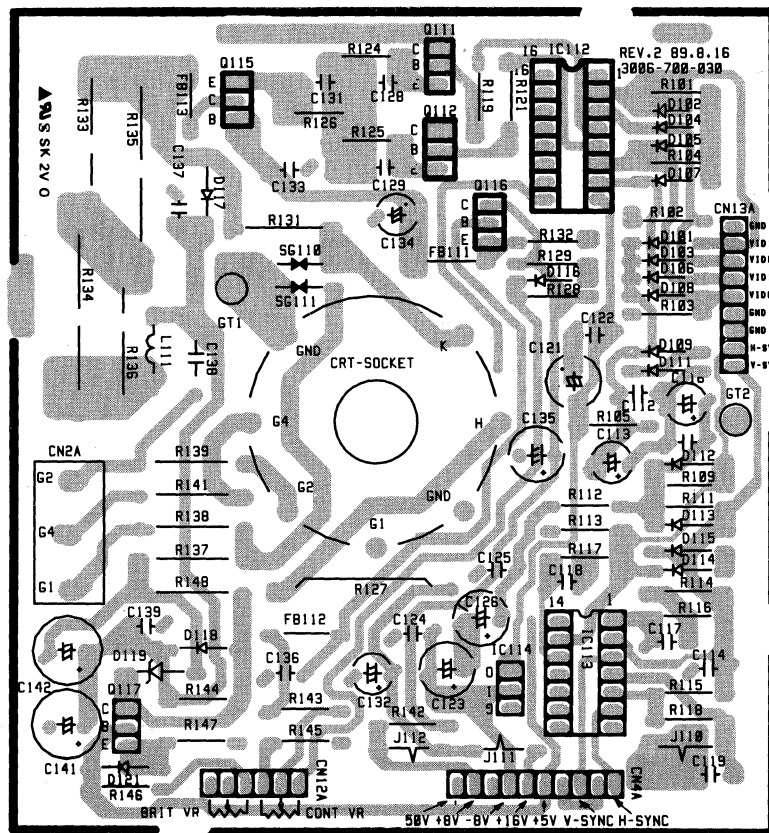
MAIN PCB (BOTTOM VIEW)



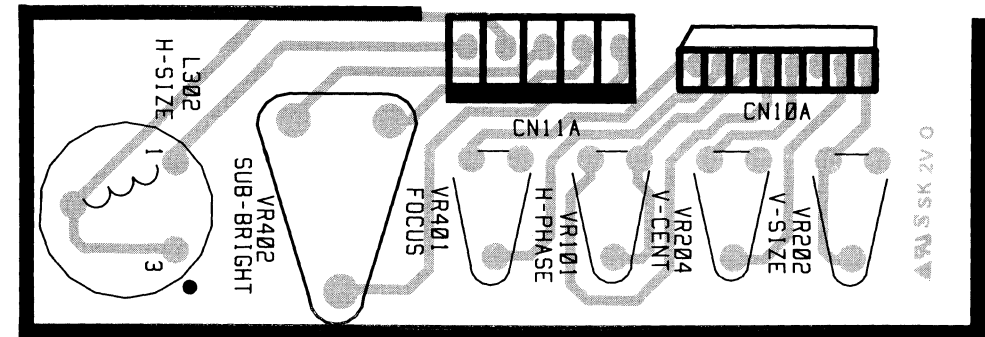
VIDEO PCB (TOP VIEW)



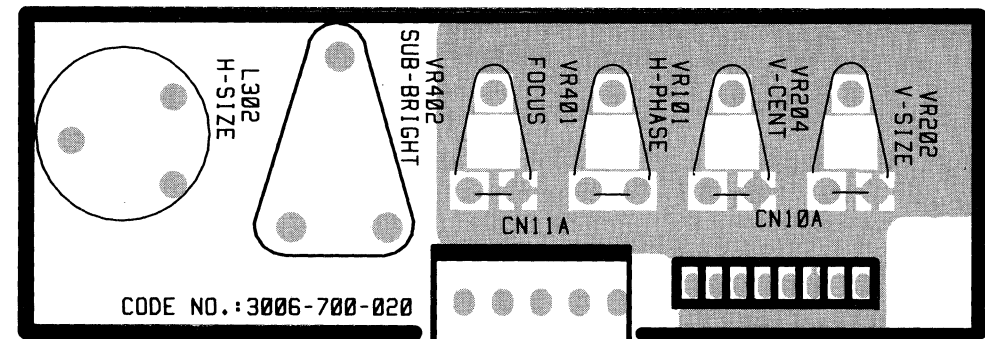
VIDEO PCB (BOTTOM VIEW)



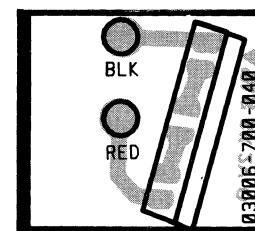
SUB PCB (TOP VIEW)



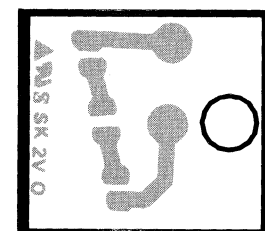
SUB PCB (BOTTOM VIEW)



LED PCB (TOP VIEW)

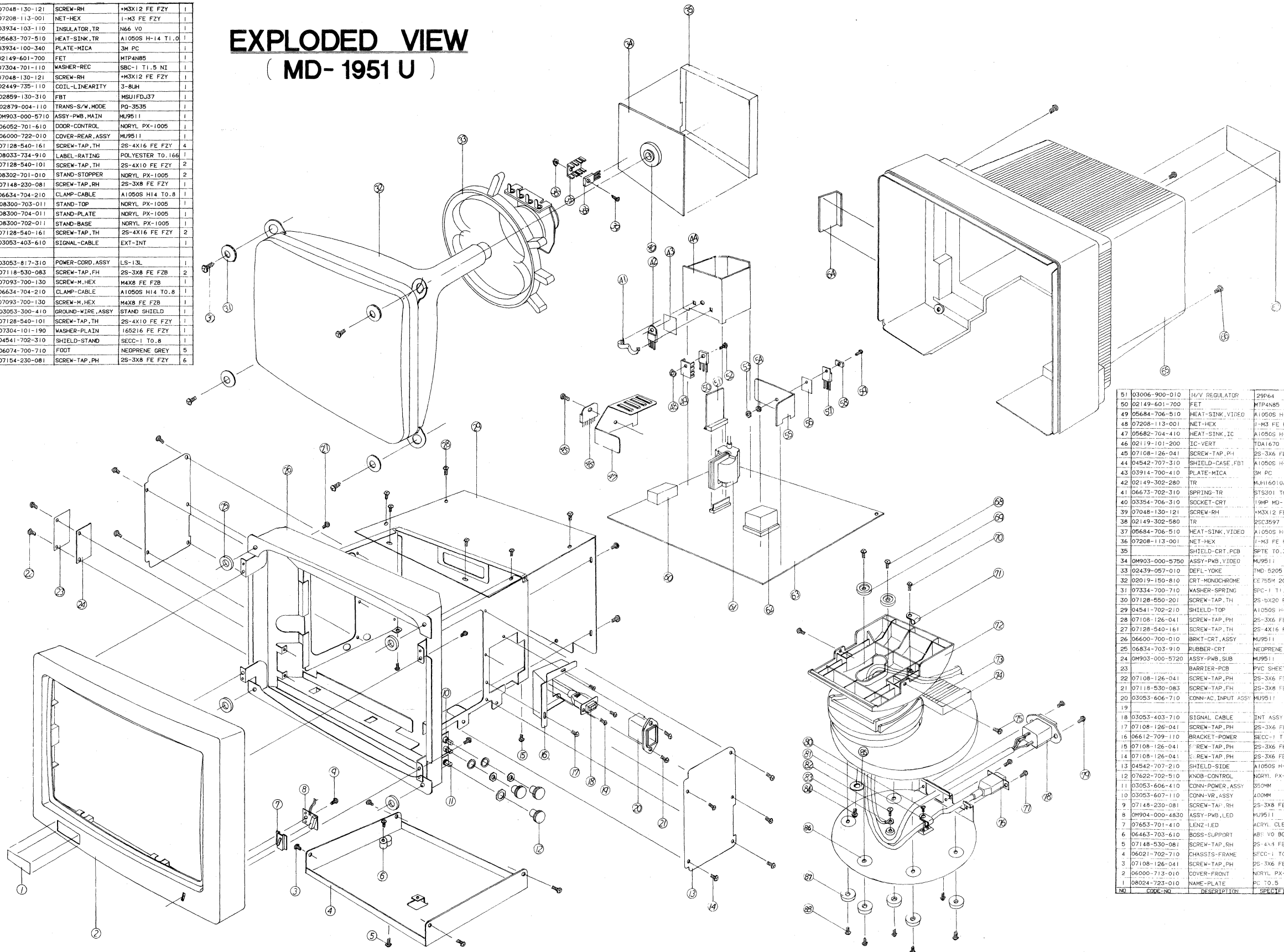


LED PCB (BOTTOM VIEW)



52	07048-130-121	SCREW-RH	M3X12 FE FZY	1
53	07208-113-001	NET-HEX	I-M3 FE FZY	1
54	03934-103-110	INSULATOR,TR	N66 V0	1
55	05683-707-510	HEAT-SINK,TR	A1050S H-14 T1.0	1
56	03934-100-340	PLATE-MICA	3M PC	1
57	02149-601-700	FET	MTP4N85	1
58	07304-701-110	WASHER-REC	SBC-1 T1.5 NI	1
59	07048-130-121	SCREW-RH	M3X12 FE FZY	1
60	02449-735-110	COTL-LINEARITY	3-BLH	1
61	02859-130-310	FBT	MSUJFDJ37	1
62	02879-004-110	TRANS-S/W,MODE	PQ-3535	1
63	0M903-000-5710	ASSY-PWB,MAIN	MU9511	1
64	06052-701-610	DOOR-CONTROL	NDRYL PX-1005	1
65	06000-722-010	COVER-REAR,ASSY	MU9511	1
66	07128-540-161	SCREW-TAP,TH	2S-4X16 FE FZY	4
67	08033-734-910	LABEL-RATING	POLYESTER T0.166	1
68	07128-540-101	SCREW-TAP,TH	2S-4X10 FE FZY	2
69	08302-701-010	STAND-STOPPER	NDRYL PX-1005	2
70	07148-230-081	SCREW-TAP,RH	2S-3X8 FE FZY	1
71	06634-704-210	CLAMP-CABLE	A1050S H14 TO.8	1
72	08300-703-011	STAND-TOP	NDRYL PX-1005	1
73	08300-704-011	STAND-PLATE	NDRYL PX-1005	1
74	08300-702-011	STAND-BASE	NDRYL PX-1005	1
75	07128-540-161	SCREW-TAP,TH	2S-4X16 FE FZY	2
76	03053-403-610	SIGNAL-CABLE	EXT-INT	1
77				
78	03053-817-310	POWER-CORD,ASSY	LS-13L	1
79	07118-530-083	SCREW-TAP,PH	2S-3X8 FE FZB	2
80	07093-700-130	SCREW-M,HEX	M4X8 FE FZB	1
81	06634-704-210	CLAMP-CABLE	A1050S H14 TO.8	1
82	07093-700-130	SCREW-M,HEX	M4X8 FE FZB	1
83	03053-300-410	GROUND-WIRE,ASSY	STAND SHIELD	1
84	07128-540-101	SCREW-TAP,TH	2S-4X10 FE FZY	1
85	07304-101-190	WASHER-PLAIN	165216 FE FZY	1
86	04541-702-310	SHIELD-STAND	SECC-1 TO.8	1
87	06074-700-710	FOOT	NEOPRENE GREY	5
88	07154-230-081	SCREW-TAP,PH	2S-3X8 FE FZY	6

# EXPLODED VIEW ( MD-1951 U )



51	03006-900-010	H/V REGULATOR	29P64	1
50	02149-601-700	FET	MTP4N85	1
49	05684-706-510	HEAT-SINK,VIDEO	A1050S H-14 T1.0	1
48	07208-113-001	NET-HEX	I-M3 FE FZY	1
47	05682-704-410	HEAT-SINK,IC	A1050S H-14 T2.0	1
46	02119-101-200	IC-VERT	TD1670	1
45	07108-126-041	SCREW-TAP,PH	2S-3X6 FE FZY	1
44	04542-707-310	SHIELD-CASE,FBT	A1050S H-14 T1.5	1
43	03914-700-410	PLATE-MICA	3M PC	1
42	02149-302-280	TR	MH16010A	1
41	06673-702-310	SPRING-TR	STS301 TO.4	1
40	03354-706-310	SOCKET-CRT	19MP MD-1503P	1
39	07048-130-121	SCREW-RH	M3X12 FE FZY	1
38	02149-302-580	TR	RSC3597	1
37	05684-706-510	HEAT-SINK,VIDEO	A1050S H-14 T1.0	1
36	07208-113-001	NET-HEX	I-M3 FE FZY	1
35		SHIELD-CRT,PCB	SFTE TO.35	1
34	0M903-000-5750	ASSY-PWB,VIDEO	MU9511	1
33	02439-057-010	DEFL-YOKE	TMD 5205 TOTOKU	1
32	02019-150-810	CRT-MONochrome	CE7854 20C 104GK2	1
31	07334-700-710	WASHER-SPRING	SFC-1 T1.6	4
30	07128-550-201	SCREW-TAP,TH	2S-DX20 FE FZY	4
29	04541-702-210	SHIELD-TOP	A1050S H-14 TO.5	1
28	07108-126-041	SCREW-TAP,PH	2S-3X6 FE FZY	12
27	07128-540-161	SCREW-TAP,TH	2S-4X16 FE FZY	4
26	06600-700-010	BRKT-CRT,ASSY	MU9511	1
25	06834-703-910	RUBBER-CRT	NEOPRENE HB BLK	4
24	0M903-000-5720	ASSY-PWB,SUB	MU9511	1
23		BARRIER-PCB	PVC SHEET B/LK	1
22	07108-126-041	SCREW-TAP,PH	2S-3X6 FE FZY	2
21	07118-530-083	SCREW-TAP,PH	2S-3X8 FE FZB	2
20	03053-606-710	CONN-AC,INPUT ASSY	MU9511	1
19				2
18	03053-403-710	SIGNAL CABLE	INT ASSY	1
17	07108-126-041	SCREW-TAP,PH	2S-3X6 FE FZY	2
16	06612-709-110	BRACKET-POWER	SECC-1 T1.0	1
15	07108-126-041	SCREW-TAP,PH	2S-3X6 FE FZY	2
14	07108-126-041	SCREW-TAP,PH	2S-3X6 FE FZY	10
13	04542-707-210	SHIELD-SIDE	A1050S H-14 TO.5	2
12	07622-702-510	KNDR-CONTROL	NDRYL PX-1005	3
11	03053-606-410	CONN-POWER,ASSY	350MM	1
10	03053-607-110	CONN-VR,ASSY	400MM	1
9	07148-230-081	SCREW-TAP,RH	2S-3X8 FE FZY	1
8	0M904-000-4830	ASSY-PWB,LED	MU9511	1
7	07653-701-410	LENZ-LED	ACRYL CLEAR	1
6	06463-703-610	BOSS-SUPPORT	ABS V0 BGE	1
5	07148-530-081	SCREW-TAP,RH	2S-4X3 FE FZY	2
4	06021-702-710	CHASSIS-FRAME	SECC-1 TO.8	1
3	07108-126-041	SCREW-TAP,PH	2S-3X6 FE FZY	4
2	06000-713-010	COVER-FRONT	NDRYL PX-1005	1
1	08024-723-010	NAME-PLATE	PC TO.5	1
NO	CODE NO.	DESCRIPTION	SPECIFICATION	QTY

## REPLACEMENT PARTS LIST

Components identified by the international symbol have special characteristics important for safety. When Replacing any of these components use only manufacturer's specified parts.

**Note:** Tolerance **G:** ±2% **J:** ±5% **K:** ±10% **L:** ±15% **M:** ±20% **Z:** + 80/-20% **C:** ±0.25pF



	<b>MU9511*</b>	<b>19" MONO MONITOR;MU9511*</b>	
	<b>0M901-***.****</b>	<b>ASSY MONO MONITOR;MU9511*</b>	
	04541-702-210	SHIELD-TOP;A1050S T0.5	
	04542-707-210	SHIELD-SIDE;A1050S T0.5	
CH + GND	07048-140-081	SCREW-RH; + M4X8 FE.FZY	
ST + MC	07108-126-041	SCREW-TAP PH;2S-3X6 FE FZY W/WASHER	
SS + MC	07108-126-041	SCREW-TAP PH;2S-3X6 FE FZY W/WASHER	
CH + STD	07128-540-161	SCREW-TAP,TH;2S-4X16 FE FZY	
C/R + CH	07128-540-161	SCREW-TAP,TH;2S-4X16 FE FZY	
CH + GND	07324-100-320	WASHER-TOOTHED;AB-T14.3,PI8.5 FE FZY	
	<b>0M902-***.****</b>	<b>ASSY COVER REAR;MU9511*</b>	
	06000-714-010	COVER-REAR,A;NORYL PX1005 VO BGE	
	06000-715-010	COVER-REAR,B;NORYL PX1005 VO BGE	
	06052-701-610	DOOR-CONTROL;NORYL PX-1005 VO BGE	
	08033-734-910	LABEL-RATING;POLYESTER T0.166	
	<b>0M902-***.****</b>	<b>ASSY STAND;MU9511A*</b>	
	03053-300-410	GROUND WIRE ASSY;STAND SHIELD	
	03053-403-610	SIGNAL-CABLE;EXT-INT(600MM)	
	03053-608-310	GROUND-WIRE ASSY;GRN/YEL 450MM	
	03053-817-310	POWER-CORD,ASSY;LS-13L SVT 3/18AWG	USED 120V AC VERSION
	03053-817-810	POWER-CORD,ASSY;LS-13L HO5VV-F 3/0.75	USED 220V AC VERSION
	03354-706-410	SOCKET AC-INLET;AC008(0.8T)	
	04541-702-310	SHIELD-STAND;SECC T0.8	
	06074-700-710	FOOT;NEOPRENE RUBBER GRY	
	06634-701-810	CABLE-TIE;PLT.7M/T18S	
	06634-704-210	CLAMP-CABLE;A1050S H14 T0.8	
	07093-700-130	SCREW-M,HEX;M4X8 FE FZB	
	07118-530-083	SCREW-TAP,FH;2S-3X8 FE FZB	
	07128-540-101	SCREW-TAP,TH;2S-4X10 FE FZY	
	07128-540-101	SCREW-TAP,TH;2S-4X10 FE FZY	
	07148-230-081	SCREW-TAP,RH;2-3X8 FE FZY	
	07154-230-081	SCREW-TAP,PH;2S-3X8 FE FZY W/WASHER	
	07304-101-190	WASHER-PLAIN;165216 FE FZY	
	08300-702-010	STAND-BASE;NORYL PX1005 VO BGE	
	08300-703-010	STAND-TOP;NORYL PX1005 VO BGE	
	08300-704-010	STAND-PLATE;NORYL PX1005 VO BGE	
	08301-703-710	STAND-ASSY;MU9511	
	08302-701-010	STAND-STOPPER;ACCETAL WHT	



	<b>0M902-***-****</b>	<b>ASSY-CHASSIS;MU9511*</b>
	03053-606-510	CONN-SUB,ASSY;300MM(MD-1951U)
	03053-606-810	CONN-GRID,ASSY;200MM(MD-1951U)
	03053-606-910	CONN-B + ,ASSY;200MM (MD-1951U)
	03053-607-010	CONN-SUB,ASSY;200MM(MD-1951U)
	03054-649-120	CONNECTOR-GROUND,1P ASSY;200MM
	03933-701-410	BARRIER-SUB,PCB;PVC SHEETT0.8
	04034-701-010	MAGNET-RUBBER;FERRITE POWER 10GAUSS
	04034-701-020	MAGNET-RUBBER;FERRITE POWER 20GAUSS
	04034-701-030	MAGNET-RUBBER;FERRITE POWER 30GAUSS
	04034-701-110	MAGNET-RUBBER;FERRITE POWER 40GAUSS
	04034-701-120	MAGNET-RUBBER;FERRITE POWER 50 GAUSS
	06021-702-710	CHASSIS-FRAME;SECC T0.8
	06463-703-610	BOSS-SUPPORT;ABS;UBE;KJC V2 PLTNM 34187
SU + CH	07148-540-081	SCREW-TAP,RH;2S-4X8 FE FZY
	06604-706-910	HOLDER-WIRE;RICHICO STL-12-01-600
	06634-701-810	CABLE-TIE;PLT.7M/T1SS
MC + CH	07148-230-081	SCREW-TAP,RH;2-3X8 FE FZY
PCB + CH	07148-230-081	SCREW-TAP,RH;2-3X8 FE FZY
SUB-PC	07148-230-081	SCREW-TAP,RH;2-3X8 FE FZY
MC + CF	07148-230-081	SCREW-TAP,RH;2-3X8 FE FZY
PCB + CH	07148-230-081	SCREW-TAP,RH;2-3X8 FE FZY
	<b>0M903-***-****</b>	<b>ASSY PWB SUB;MU9511*</b>
VR402	01242-115-001	VR-SEMI;H1621C B4M
VR204	01246-101-180	VR-SEMI;67360-006/0004 1K-M
VR101	01246-101-181	VR-SEMI;67360-006/0007 10K-M
VR401	01246-101-181	VR-SEMI;67360-006/0007 10K-M
VR202	01246-101-182	VR-SEMI;67360-006/0011 220K-M
L302	02449-434-810	COIL-HOR,WIDTH;10UH
	03006-700-020	PCB-VR SUB;FR-4 DOUBLE 35X10
CN11A	03344-112-040	CONNECTOR-WAFER;5273-05A(MOLEX)
CN10A	03344-156-180	CONNECTOR-WAFER;5267-08A(MOLEX)
	<b>0M903-***-****</b>	<b>ASSY COVER FRONT;MU9511*</b>
FC + LED	07148-230-081	SCREW-TAP,RH;2-3X8 FE FZY
	<b>0M904-***-****</b>	<b>ASSY COVER-FRONT;MU9511A</b>
	06000-713-010	COVER-FRONT;NORY PX1005 VO BGE #50924
	07653-701-411	LENZ-LED;ACRYL CLEAR
	<b>0M904-***-****</b>	<b>ASSY PWB LED;MU9511*</b>
	02309-110-040	LED;LD701MG
	03006-700-040	PCB-LED;25.6X23, FR-4(S/S) MU9511
	03053-608-010	CONN-LED,ASSY;LD701MG,XH-2 600MM
	<b>0M903-***-****</b>	<b>ASSY-PWB, VIDEO;MU9511*</b>
IC113	02109-104-700	IC;KS74HCTLS86N
IC112	02119-103-480	IC;MC10H125P
	03053-300-610	SHIELD-WIRE ASSY;100MM MU9511

	03053-300-810	SHIELD, WIRE ASSY;0.16X5X24 120MM
	04542-709-810	SHIELD-CRT, PCB;SPTC T0.35
	<b>0M904-***.****</b>	<b>ASSY H/S VIDEO;MU9511*</b>
Q115	02149-302-580	TRANSISTOR;2SC3597
	05684-706-510	HEATSINK-VIDEO;A1050S H14 T1.0
	07048-130-101	SCREW-RH; + M3X10 FE FZY
	07208-113-001	NUT-HEX;1-M3 FE FZY
	<b>0M904-***.****</b>	<b>ASSY-PWB, VIDEO UNFIN;MU9511*</b>
R134	01043-827-201	R-METAL,OXIDE;RS 5P 200-J
R135	01043-827-201	R-METAL,OXIDE;RS 5P 200-J
R133	01045-527-471	R-METAL OXIDE;RS 2P 470-J
R136	01045-527-821	R-METAL,OXIDE;RS 2P 820-J
R127	01045-627-510	R-METAL,OXIDE;RS 3P 51-J
C138	01416-768-472	C-CERAMIC HK;DE 1510BEK 472Z 2K
C142	01609-403-670	C-ELECTROLYTIC;CE04W 350V 2.2M
C141	01609-404-100	C-ELECTROLYTIC;CE04W 63V 100M
IC114	02119-602-100	IC-REGULATOR;MC7905(SST)
Q116	02139-104-220	TRANSISTOR;MPS2222A
Q111	02139-401-230	TRANSISTOR;PN4258
Q112	02139-401-230	TRANSISTOR;PN4258
Q117	02139-601-550	TRANSISTOR;2N5550
FB111	02428-048-010	COIL-CHOKE;1.5UH + -20%
FB112	02429-048-010	COIL-CHOKE;1.5UH + -20%
FB113	02429-048-010	COIL-CHOKE;1.5UH + -20%
CN4A	03344-156-100	CONNECTOR-WAFER;5267-10A MOLEX
CN12A	03344-156-160	CONNECTOR-WAFER;5267-06A MOLEX
CN13A	03344-156-190	CONNECTOR-WAFER;5267-09A MOLEX
CN2A	03344-159-020	CONNECTOR-WAFER;5096-03C MOLEX
IC113	03354-705-920	SOCKET-IC;WSDIF-14PIN
IC112	03354-705-930	SOCKET-IC;WSDIF-16PIN
	03354-706-310	SOCKET-CRT;19MP MD-1503P
SG110	04569-002-210	SPARK GAP;DSP-301N
SG111	04569-002-210	SPARK GAP;DSP-301N
	<b>0M905-***.****</b>	<b>ASSY-PWB VIDEO AUTO;MU9511*</b>
J110	00509-400-116	WIRE-SO,COPPER;TA 0.6 SN
J111	00509-400-116	WIRE-SO,COPPER;TA 0.6 SN
J113	00509-400-116	WIRE-SO,COPPER;TA 0.6 SN
R126	00509-400-116	WIRE-SO,COPPER;TA 0.6 SN
R115	01018-277-103	R-CARBON;RD 1/4T 10K-J
R117	01018-277-105	R-CARBON;RD 1/4T 1M-J
R143	01018-277-111	R-CARBON;RD 1/4T 110-J
R145	01018-277-111	R-CARBON;RD 1/4T 110-J
R146	01018-277-111	R-CARBON;RD 1/4T 110-J
R142	01018-277-120	R-CARBON;RD 1/4T 12-J
R105	01018-277-181	R-CARBON;RD 1/4T 180-J

R129	01018-277-182	R-CARBON;RD 1/4T 1.8K-J	
R118	01018-277-222	R-CARBON;RD 1/4T 2.2K-J	
R147	01018-277-222	R-CARBON;RD 1/4T 2.2K-J	
R116	01018-277-223	R-CARBON;RD 1/4T 22K-J	
R144	01018-277-223	R-CARBON;RD 1/4T 22K-J	
R132	01018-277-223	R-CARBON;RD 1/4T 22K-J	
R109	01018-277-331	R-CARBON;RD 1/4T 330-J	
R111	01018-277-331	R-CARBON;RD 1/4T 330-J	
R113	01018-277-331	R-CARBON;RD 1/4T 330-J	
R114	01018-277-331	R-CARBON;RD 1/4T 330-J	
R128	01018-277-331	R-CARBON;RD 1/4T 330-J	
R139	01028-378-103	R-COMPOSITION;RC 1/2T 10K-K	
R141	01028-378-103	R-COMPOSITION;RC 1/2T 10K-K	
R137	01028-378-390	R-COMPOSITION;RC 1/2T 39-K	
R131	01028-378-390	R-COMPOSITION;RC 1/2T 39-K	
R138	01028-378-474	R-COMPOSITION;RC 1/2T 470K-K	
R148	01028-378-475	R-COMPOSITION;RC 1/2T 4.7M-J	
R125	01048-275-180	R-METAL,FILM;RM 1/4T 18-F	
R119	01048-275-220	R-METAL,FILM;RM 1/4T 22-F	
R121	01048-275-220	R-METAL,FILM;RM 1/4T 22-F	
R126	01048-275-220	R-METAL,FILM;RM 1/4T 22-F	
R124	01048-275-270	R-METAL,FILM;RM 1/4T 27-F	
R124	01048-275-829	R-METAL,FILM;RM 1/4T 8.2-F	
R112	01048-276-100	R-METAL,FILM;RM 1/4T 10-G	
R101	01048-277-471	R-METAL,FILM;RM 1/4T 470-J	
R102	01048-277-471	R-METAL,FILM;RM 1/4T 470-J	
R103	01048-277-471	R-METAL,FILM;RM 1/4T 470-J	
R104	01048-277-471	R-METAL,FILM;RM 1/4T 470-J	
C128	01407-017-101	C-CERAMIC,TEMP;CC45(T) SL 50V 100-J	
C129	01407-017-101	C-CERAMIC,TEMP;CC45(T) SL 50V 100-J	
C119	01407-017-101	C-CERAMIC,TEMP;CC45(T) SL 50V 100-J	
C131	01407-057-121	C-CERAMIC,TEMP;CC45(T) CH 50V 120-J	
C117	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z	
C115	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z	
C118	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z	
C122	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z	
C124	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z	
C125	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z	
C133	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z	
C136	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z	
C112	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z	
C114	01505-723-103	C-POLYESTER;CQ921M(T) 100V 0.01-J	
C137	01505-723-104	C-POLYESTER;CQ921M(T) 100V 0.1M-J	
C139	01505-723-104	C-POLYESTER;CQ921M(T) 100V 0.1M-J	
C135	01608-903-101	C-ELECTROLYTIC;CE04W(T) 16V 100M	
			CDC19M VIDEO CARD VERSION CDC19M VIDEO CARD VERSION SDA1280M2 VIDEO CARD VERSION
			SDA1280M2 VIDEO CARD VERSION

C126	01608-903-101	C-ELECTROLYTIC;CE04W(T) 16V 100M	
C123	01608-903-101	C-ELECTROLYTIC;CE04W(T) 16V 100M	
C116	01608-904-100	C-ELECTROLYTIC;CE04W(T) 25V 10M	
C132	01608-904-101	C-ELECTROLYTIC;CE04W(T) 25V 100M	
C121	01608-904-101	C-ELECTROLYTIC;CE04W(T) 25V 100M	
C113	01608-904-470	C-ELECTROLYTIC;CE04W(T) 25V 47M	
C134	01608-905-100	C-ELECTROLYTIC;CE04W(T) 35V 10M	
D101	02169-301-417	DIODE;1N4148(T)	
D102	02169-301-417	DIODE;1N4148(T)	
D103	02169-301-417	DIODE;1N4148(T)	
D104	02169-301-417	DIODE;1N4148(T)	
D105	02169-301-417	DIODE;1N4148(T)	
D106	02169-301-417	DIODE;1N4148(T)	
D107	02169-301-417	DIODE;1N4148(T)	
D108	02169-301-417	DIODE;1N4148(T)	
D109	02169-301-417	DIODE;1N4148(T)	
D111	02169-301-417	DIODE;1N4148(T)	
D112	02169-301-417	DIODE;1N4148(T)	
D113	02169-301-417	DIODE;1N4148(T)	
D114	02169-301-417	DIODE;1N4148(T)	
D115	02169-301-417	DIODE;1N4148(T)	
D116	02169-301-417	DIODE;1N4148(T)	
D117	02169-301-417	DIODE;1N4148(T)	
D118	02169-301-417	DIODE;1N4148(T)	
D121	02169-301-417	DIODE;1N4148(T)	
D118	02189-404-040	DIODE-ZENER;ZGP10-100	
L110	02429-858-310	COIL-PEAKING;0.47UH +-20%	
JWA	03008-700-030	PCB-VIDEO;FR-4 DOUBLE 110X120 MU9511	
GT2	03124-700-810	PIN-GT;14.2MM2.35PI	
R135	03124-700-810	PIN-GT;14.2MM 2.35PI	
R134	03124-700-810	PIN-GT;14.2MM 2.35PI	
GT1	03124-700-810	PIN-GT;14.2MM 2.35PI	
	<b>0M903-***-****</b>	<b>ASSY-BRKT,CRT;MU9511*</b>	
	04554-701-010	EARTH-PLATE;PBS3 SP-H T0.3	
	06834-703-910	RUBBER-CRT;NEOPRENE HB BWK	
P.GND	07048-140-081	SCREW-RH; + M4X8 FE.FZY	
BP + MC	07148-230-081	SCREW-TAP,RH;2-3X8 FE FZY	
	07128-540-101	SCREW-TAP,TH;2S-4X10 FE FZY	
CRT	07128-550-201	SCREW-TAP,TH;2S-5X20 FE FZY	
P.GND	07324-100-320	WASHER-TOOTHED;AB-T14.3,P18.5 FE FZY	
CRT	07334-700-710	WASHER-SPRING;SPC-1 T1.8 FZY2(19" CRT)	
	07622-702-510	KNOB-CONTROL;NORYL PX-1005	
	<b>0M904-***-****</b>	<b>ASSY CRT;MU9511*</b>	
	02019-150-810	CRT-MONOCHROME;CE755M20C104GKZ 	
	02439-057-010	DEFL-YOKE;TMD-5205 TOTOKU 	

	03053-300-310	GROUND-CRT,ASSY;MD-1951U	
	03054-643-110	CONNECTOR 4P ASSY;JST 4P-LV-	
	06634-701-810	CABLE-TIE;PLT.7M/T18S	
	<b>0M904-***-****</b>	<b>ASSY MOUNT,CRT;MU9511*</b>	
VR111	01201-900-010	VR-ROUND,SGL;18SN 20F B1K(M8)	
	01201-900-010	VR-ROUND,SGL;18SN 20F B1K(M8)	
	03053-606-410	CONN-POWER S/W ASSY;350MM	
	03053-607-110	CONN-VR,ASSY;400MM (MD-1951U)	
SW2	03529-703-010	SWITCH-PUSH;70100-000-0-0033	
	06600-700-010	BRKT-CRT,ASSY;MD-1951U	
	<b>0M904-***-****</b>	<b>ASSY-BRKT;POWER MU9511*</b>	
	03053-403-710	SIGNAL CABLE;INT ASSY (85M/M)	
	03053-404-310	CABLE-SIGNAL;85MM 5264-09, MU9511A	
	03053-606-710	CONN-AC,INPUT ASSY;100M(MD-1951U)	
	03054-223-030	GND-WIRE,ASSY;GRN/YEL,L-100mm	
	03354-707-110	SOKET-AC,INLET;I133-S22 NOISE FILTER U/C	
	06612-709-110	BRACKET-POWER;SECC T1.0	
PC + BP	07118-530-083	SCREW-TAP,FH;2S-3X8 FE FZB	
SC + BP	07148-530-081	SCREW-TAP,RH;2S-3X8 FE FZY	
	<b>0M903-***-****</b>	<b>ASSY-PWB, MAIN;MU9511*</b>	
C102	01508-513-471	C-POLYSTYRENE;CQ922M 50V 470-J	
IC101	02109-104-600	IC;SN74LS221	
IC603	02109-104-850	IC-CMOS TIMER;TLC555M(TI)	
IC301	02109-307-050	IC-CMOS PLL;MC14046B	
IC604	02119-601-940	IC-PWM CONTROLLER;UC3842	
CN3	03006-900-010	H/V REGULATOR MODULE;15" 29P64 ⚠	
F601	04709-088-080	FUSE;51S 250V 2.5A 20MMU/C ⚠	
F601	04709-084-950	FUSE;50T 250V 2.5A 20MM-C(SEMKO) ⚠	
	08114-874-640	LABEL-FUSE;T2.5A-250V ⚠	
	<b>0M904-***-****</b>	<b>ASSY H/S TR;MU9511*</b>	
Q601	02149-601-700	FET;MTP4N85(WITH MICA) MOTOROLA ⚠	
Q601	03914-100-340	PLATE-MICA;5-13X19 T0.09 RECT	
	03934-103-110	INSULATOR-TR;4.5-8D 2-2H N68 V-O	
	05683-707-510	HEATSINK-IC;A1050S-H14 T1.6	
	07048-130-121	SCREW-RH; + M3X12 FE FZY	
	07208-113-001	NUT-HEX;1-M3 FE FZY	
	07304-700-920	WASHER-PLAIN;954810 FE FZW	
	07304-701-110	WASHER-REC.;SBC-1 T1.5 NI	
	<b>0M904-***-****</b>	<b>ASSY H/S IC;MU9511*</b>	
IC201	02119-101-200	IC-VERT;TDA1670	
IC201	05682-704-410	HEATSINK-IC;A1050S T2.0	
	07108-126-041	SCREW-TAP PH;2S-3X6 FE FZY W/WASHER	
	<b>0M904-***-****</b>	<b>ASSY H/S FBT;MU9511*</b>	
Q303	02149-302-280	TRANSISTOR;MJH16010A(WITH MICA) ⚠	
Q303	04542-707-310	SHIELD-CASE,FBT;A1050S T1.5	

CDC19M VIDEO CARD VERSION  
SDA1280M2 VIDEO CARD VERSION

USED 120V AC VERSION  
USED 220V AC VERSION  
USED 220V AC VERSION

	06673-702-310	SPRING-TR(A);STS301 T0.4
	<b>0M804-***-****</b>	<b>ASSY-H/S DIODE;MU9511*</b>
D303	02169-301-880	DIODE;MUR8100 (MOTOROLA) ⚠
	05683-708-010	HEATSINK-TR,VIDEO;A1050P H14 T1
	07048-130-101	SCREW-RH; + M3X10 FE FZY
	07208-113-001	NUT-HEX;1-M3 FE FZY
	07304-700-920	WASHER-PLAIN;954810 FE FZW
	07304-701-110	WASHER-REC.;SBC-1 T1.5 NI
	<b>0M904-***-****</b>	<b>ASSY-PWB, MAIN UNFIN;MU9511*</b>
R321	01028-378-474	R-COMPOSITION;RC 1/2T 470K-K
R621	01038-217-033	R-WIRE;RW IL 0.33-J
R302	01039-427-820	R-CEMENT,WIRE;RP 3P 82-J
R313	01045-427-221	R-METAL,OXIDE;RS 1P 220-J
R212	01045-427-301	R-METAL,OXIDE;RS 1P 300-J
R607	01045-627-154	R-METAL,OXIDE;RS 3P 150K-J
R632	01045-627-154	R-METAL,OXIDE;RS 3P 150K-J
R617	01045-627-503	R-METAL,OXIDE;RS 3P 50K-J
R631	01045-627-503	R-METAL,OXIDE;RS 3P 50K-J
R622	01085-427-682	R-METAL,OXIDE;RS 1P 6.8K-J(S)
R623	01085-427-682	R-METAL,OXIDE;RS 1P 6.8K-J(S)
R209	01085-527-151	R-METAL,OXIDE;RS 2P 150-J(S)
VR601	01241-108-002	VR-SEMI;CET 92A B500
VR201	01241-108-007	VR-SEMI;CET 92A B10K
VR203	01241-108-007	VR-SEMI;CET 92A B10K
VR301	01241-108-007	VR-SEMI;CET 92A B10K
VR302	01241-110-005	VR-SEMI;CET 117A B50K
C314	01416-618-102	C-CERAMIC,HK;CK45B 1KV 1000-K
C315	01416-618-102	C-CERAMIC,HK;CK45B 1KV 1000-K
C403	01416-618-102	C-CERAMIC,HK;CK45B 1KV 1000-K
C637	01416-649-472	C-CERAMIC,HK;DE7150F 472M VA-1-KC ⚠
C638	01418-649-472	C-CERAMIC,HK;DE7150F 472M VA-1-KC ⚠
C318	01416-780-103	C-CERAMIC,HK;CK45 E2KV 0.01UF-P
C405	01418-780-103	C-CERAMIC,HK;CK45 E2KV 0.01UF-P
C406	01416-780-103	C-CERAMIC,HK;CK45 E2KV 0.01UF-P
C407	01418-780-103	C-CERAMIC,HK;CK45 E2KV 0.01UF-P
C619	01416-780-103	C-CERAMIC,HK;CK45 E2KV 0.01UF-P
C409	01416-780-103	C-CERAMIC,HK;CK45 E2KV 0.01UF-P
C621	01419-901-220	C-CERAMIC,HK;CK45 B 1KV 220-K
C639	01461-137-806	C-CERAMIC,AC;DE 7100F 222MVAI ⚠
C640	01461-137-806	C-CERAMIC,AC;DE 7100F 222MVAI ⚠
C641	01461-137-806	C-CERAMIC,AC;DE 7100F 222MVAI ⚠
C642	01461-137-806	C-CERAMIC,AC;DE 7100F 222MVAI ⚠
C612	01502-323-682	C-POLYPROPYLENE;CQ922M 100V 6800-J
C305	01502-513-152	C-POLYPROPYLENE;CQ922M 50V 0.0015M-J
C202	01502-523-473	C-POLYPROPYLENE;CQ922M 100V 0.047M-J

C210	01502-523-563	C-POLYPROPYLENE;CF922M 100V 0.056UF-J	
C316	01502-553-223	C-POLYPROPYLENE;CQ922M 630V 0.022M-J ▲	
C313	01502-573-392	C-POLYPROPYLENE;CQ922M 1.6KV 3900P-J ▲	CDC19M VIDEO CARD VERSION
C312	01502-573-392	C-POLYPROPYLENE;CQ922M 1.6KV 3900P-J ▲	CDC19M VIDEO CARD VERSION
C313	01502-573-222	C-POLYPROPYLENE;CQ922M 1.6KV 2200P-J ▲	SDA1280M2 VIDEO CARD VERSION
C312	01502-573-472	C-POLYPROPYLENE;CQ922M 1.6KV 4700P-J ▲	SDA1280M2 VIDEO CARD VERSION
C317	01507-543-274	C-POLYPROPYLENE;CQ922M 400V 0.27M-J	
C201	01517-323-104	C-M,POLYESTER;CF922 100V 0.1M-J	
C310	01517-323-109	C-M,POLYESTER;CF922M 100V 1.0M-J	
C204	01517-323-224	C-M,POLYESTER;CF922M 100V 0.22M-J	
C207	01517-323-473	C-M,POLYESTER;CF 922M 100V 0.047UF-J	
C601	01535-828-474	C-M,PAPER;PME271M 647(0.47UF) ▲	
C602	01535-828-474	C-M,PAPER;PME271M,647(0.47UF) ▲	
C603	01535-829-472	C-M,PAPER;PME271Y 447(0.0047UF) ▲	
C604	01535-829-472	C-M,PAPER;PME271Y 447(0.0047UF) ▲	
C633	01607-905-102	C-ELEC 105°C;CE04W 35V 1000UF KM	
C631	01607-908-331	C-ELEC 105°C;CE04W 100V330UF 105°C RA/KM	
C632	01607-908-331	C-ELEC 105°C;CE04W 100V330UF 105°C RA/KM	
C610	01607-912-221	C-ELEC105°C;CE04W 400V 220UF 105°C HA	
C209	01609-401-530	C-ELECTROLYTIC;CE04W 16V 2200M	
C303	01609-402-100	C-ELECTROLYTIC;CE04W 35V 100M	
C635	01609-404-100	C-ELECTROLYTIC;CE04W 63V 100M	
C636	01609-404-100	C-ELECTROLYTIC;CE04W 63V 100M	
C634	01609-404-100	C-ELECTROLYTIC;CE04W 63V 100M	
C205	01609-404-100	C-ELECTROLYTIC;CE04W 63V 100M	
IC605	02109-104-450	IC-OPTO COUPLER;TIL113	
IC401	02119-601-420	IC-SHUNT REGULATOR;TL431C	
IC601	02119-601-420	IC-SHUNT REGULATOR;TL431C	
IC606	02119-601-420	IC-SHUNT REGULATOR;TL431C	
IC302	02119-601-700	IC-REGULATOR ;MC7812C,SST	
IC102	02119-602-010	IC-REGULATOR;MC7805(SST)	
IC602	02119-901-261	IC-OPTION COUPLER;4N25 (MOTOROLA) ▲	
Q301	02139-104-220	TRANSISTOR;MPS2222A	
Q602	02139-104-220	TRANSISTOR;MPS2222A	
Q304	02139-104-290	TRANSISTOR;PN2907	
Q201	02139-204-060	TRANSISTOR;MPSU01	
Q401	02139-305-200	TRANSISTOR;2SC3675	
Q302	02139-307-060	TRANSISTOR;VN0606M	
D605	02169-210-040	DIODE;2KBP06M(GI)	
V601	02189-102-010	VARISTOR;V150-LA10A	
V602	02189-102-010	VARISTOR;V150-LA10A	
RT601	02189-601-290	NTC THERMISTOR;10SP010M	
RT602	02189-601-290	NTC THERMISTOR;10SP010M	
FB301	02429-048-010	COIL-CHOKE;1.5UH + -20%	
T601	02429-647-810	COIL-LINE,FILTER;39UH(125X32)	

L401	02449-735-010	COIL-HOR,MOD;EE-1614S (MD-1951U)	
L301	02449-735-110	COIL-LINEARITY;3-8UH (MD-1951U)	
T301	02849-032-710	TRANS-HOR,DRIVE;E12218S (MD-1951U)	
T401	02849-130-310	TRANS-FLYBAK;MSU1FDJ37 ▲	
T603	02879-004-110	TRANS-S/W, MODE;PQ-3535 (MD-1951U) ▲	
T602	02899-004-310	TRANS-SYNC;3MH (11X16MM) ▲	
CN11	03344-112-040	CONNECTOR-WAFER;5273-05A(MOLEX)	
CN3	03344-112-080	CONNECTOR-WAFER;5273-09A	
CN8	03344-131-140	CONNECTOR-WAFER;B2B-XH (2P 2.5MM)	
CN5	03344-155-940	CONNECTOR-PIN BASE;B4P-LV-TN	
CN4	03344-156-100	CONNECTOR-WAFER;5267-10A MOLEX	
CN14	03344-156-130	CONNECTOR-WAFER;5267-03A MOLEX	
CN10	03344-156-150	CONNECTOR-WAFER;5267-05A MOLEX	
CN1	03344-159-020	CONNECTOR-WAFER;5096-03C MOLEX	
CN2	03344-159-020	CONNECTOR-WAFER;5096-03C MOLEX	
CN6	03344-159-030	CONNECTOR-WAFER;5096-04C MOLEX	
IC101	03354-705-930	SOCKET-IC;WSDIF-16PIN	
IC301	03354-705-930	SOCKET-IC;WSDIF-16PIN	
IC603	03354-706-000	SOCKET-IC;DICS-8AT	
IC604	03354-706-000	SOCKET-IC;DICS-8AT	
F601	03364-700-210	HOLDER-FUSE;FC51E,20M/M FUSE	
	<b>0M905-***-****</b>	<b>ASSY PWB MAIN AUTO;MU9511*</b>	
R601	01016-377-224	R-CARBON;RD 1/2T 220K-J(S)	
R303	01018-277-100	R-CARBON;RD 1/4T 10-J	
R317	01018-277-102	R-CARBON;RD 1/4T 1K-J	
R319	01018-277-102	R-CARBON;RD 1/4T 1K-J	
R404	01018-277-102	R-CARBON;RD 1/4T 1K-J	
R407	01018-277-102	R-CARBON;RD 1/4T 1K-J	
R605	01018-277-102	R-CARBON;RD 1/4T 1K-J	
R620	01018-277-102	R-CARBON;RD 1/4T 1K-J	
R318	01018-277-103	R-CARBON;RD 1/4T 10K-J	
R610	01018-277-103	R-CARBON;RD 1/4T 10K-J	
R619	01018-277-104	R-CARBON;RD 1/4T 100K-J	
R603	01018-277-104	R-CARBON;RD 1/4T 100K-J	
R215	01018-277-104	R-CARBON;RD 1/4T 100K-J	
R609	01018-277-104	R-CARBON;RD 1/4T 100K-J	
R413	01018-277-105	R-CARBON;RD 1/4T 1M-J	
R414	01018-277-105	R-CARBON;RD 1/4T 1M-J	
R213	01018-277-122	R-CARBON;RD 1/4T 1.2K-J	
R150	01018-277-153	R-CARBON;RD 1/4T 15K-J	
R201	01018-277-153	R-CARBON;RD 1/4T 15K-J	
R406	01018-277-183	R-CARBON;RD 1/4T 18K-J	
R311	01018-277-220	R-CARBON;RD 1/4T 22-J	
R208	01018-277-221	R-CARBON;RD 1/4T 220-J	
R629	01018-277-221	R-CARBON;RD 1/4T 220-J	



R151	01018-277-222	R-CARBON;RD 1/4T 2.2K-J	
R305	01018-277-222	R-CARBON;RD 1/4T 2.2K-J	
R306	01018-277-222	R-CARBON;RD 1/4T 2.2K-J	
R307	01018-277-222	R-CARBON;RD 1/4T 2.2K-J	
R320	01018-277-222	R-CARBON;RD 1/4T 2.2K-J	
R606	01018-277-222	R-CARBON;RD 1/4T 2.2K-J	
R608	01018-277-222	R-CARBON;RD 1/4T 2.2K-J	
R402	01018-277-224	R-CARBON;RD 1/4T 220K-J	
R618	01018-277-229	R-CARBON;RD 1/4T 2.2-J	
R211	01018-277-242	R-CARBON;RD 1/4T 2.4K-J	
R205	01018-277-244	R-CARBON;RD 1/4T 240K-J	
R207	01018-277-244	R-CARBON;RD 1/4T 240K-J	
R403	01018-277-272	R-CARBON;RD 1/4T 2.7K-J	
R405	01018-277-273	R-CARBON;RD 1/4T 27K-J	
R312	01018-277-332	R-CARBON;RD 1/4T 3.3K-J	
R206	01018-277-334	R-CARBON;RD 1/4T 330K-J	
R611	01018-277-392	R-CARBON;RD 1/4T 3.9K-J	
R324	01018-277-471	R-CARBON;RD 1/4T 470-J	
R202	01018-277-472	R-CARBON;RD 1/4T 4.7K-J	
R203	01018-277-472	R-CARBON;RD 1/4T 4.7K-J	
R204	01018-277-472	R-CARBON;RD 1/4T 4.7K-J	
R613	01018-277-474	R-CARBON;RD 1/4T 470K-J	
R301	01018-277-561	R-CARBON;RD 1/4T 560-J	
R152	01018-277-562	R-CARBON;RD 1/4T 5.6K-J	
R304	01018-277-682	R-CARBON;RD 1/4T 6.8K-J	
R602	01018-277-682	R-CARBON;RD 1/4T 6.8K-J	
R314	01018-277-689	R-CARBON;RD 1/4T 6.8-J	
R310	01018-277-822	R-CARBON;RD 1/4T 8.2K-J	
R309	01018-277-823	R-CARBON;RD 1/4T 82K-J	
R315	01018-377-331	R-CARBON;RD 1/2T 330-J	
R316	01018-377-331	R-CARBON;RD 1/2T 330-J	
R409	01018-377-334	R-CARBON;RD 1/2T 330K-J	
R410	01018-377-334	R-CARBON;RD 1/2T 330K-J	
R411	01018-377-334	R-CARBON;RD 1/2T 330K-J	
R408	01018-377-334	R-CARBON;RD 1/2T 330K-J	
R323	01018-377-470	R-CARBON;RD 1/2T 47-J	
R401	01018-377-752	R-CARBON;RD 1/2T 7.5K-J	
R626	01048-275-103	R-METAL,FILM;RM 1/4T 10K-F	
R628	01048-275-123	R-METAL,FILM;RM 1/4T 12K-F	
R308	01048-275-203	R-METAL,FILM;RM 1/4T 20K-F	
R614	01048-275-472	R-METAL,FILM;RM 1/4T 4.7K-F	
R612	01048-275-513	R-METAL,FILM;RM 1/4T 51K-F	
R322	01048-275-753	R-METAL,FILM;RM 1/4T 75K-F	
R630	01048-276-823	R-METAL,FILM;RM 1/4T 82K-G	
R625	01048-277-225	R-METAL,FILM;RM 1/4T 2.2M-J	

R624	01048-277-225	R-METAL,FILM;RM 1/4T 2.2M-J
R210	01048-277-229	R-METAL,FILM;RM 1/4T 2.2-J
R627	01048-277-303	R-METAL,FILM;RM 1/4T 30K-J
R214	01048-375-082	R-METAL,FILM;RM 1/2T 0.82-F
R615	01048-375-393	R-METAL,FILM,RM 1/2T 39K-F
R616	01048-375-393	R-METAL,FILM;RM 1/2T 39K-F
R604	01048-375-393	R-METAL,FILM;RM 1/2T 39K-F
R412	01058-070-000	R-ZERO OHM;ZERO OHM
C608	01417-318-331	C-CERAMIC HK;CK45(T) B 50V 330-K
C644	01417-318-331	C-CERAMIC HK;CK45(T) B 50V 330-K
C611	01417-318-471	C-CERAMIC HK;CK45(T) B 50V 470-K
C620	01417-318-471	C-CERAMIC HK;CK45(T) B 50V 470-K
C101	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z
C206	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z
C302	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z
C304	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z
C606	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z
C622	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z
C624	01417-344-104	C-CERAMIC,HK;CK45(T) F50V 0.1M-Z
C614	01505-723-102	C-POLYESTER;CQ921M(T) 100V 0.001-J
C607	01505-723-102	C-POLYESTER;CQ921M(T) 100V 0.001-J
C103	01505-723-103	C-POLYESTER;CQ921M(T) 100V 0.01-J
C307	01505-723-103	C-POLYESTER;CQ921M(T) 100V 0.01-J
C319	01505-723-103	C-POLYESTER;CQ921M(T) 100V 0.01-J
C402	01505-723-103	C-POLYESTER;CQ921M(T) 100V 0.01-J
C613	01505-723-104	C-POLYESTER;CQ921M(T) 100V 0.1M-J
C625	01505-723-104	C-POLYESTER;CQ921MIT) 100V 0.1M-J
C626	01505-723-104	C-POLYESTER;CQ921M(T) 100V 0.1M-J
C627	01505-723-104	C-POLYESTER;CQ921M(T) 100V 0.1M-J
C628	01505-723-104	C-POLYESTER;CQ921M(T) 100V 0.1M-J
C629	01505-723-104	C-POLYESTER;CQ921M(T) 100V 0.1M-J
C630	01505-723-104	C-POLYESTER;CQ921M(T) 100V 0.1M-J
C404	01505-723-104	C-POLYESTER;CQ921M(T) 100V 0.1M-J
C308	01505-723-223	C-POLYESTER;CQ921M(T) 100V 0.022-J
C311	01505-723-223	C-POLYESTER;CQ921M(T) 100V 0.022-J
C105	01608-903-101	C-ELECTROLYTIC;CE04W(T) 16V 100M
C301	01608-903-470	C-ELECTROLYTIC;CE04W(T) 16V 47M
C617	01608-904-100	C-ELECTROLYTIC;CE04W(T) 25V 10M
C623	01608-904-100	C-ELECTROLYTIC;CE04W(T) 25V 10M
C615	01608-904-100	C-ELECTROLYTIC;CE04W(T) 25V 10M
C634	01608-904-101	C-ELECTROLYTIC;CE04W(T) 25V 100M
C401	01608-905-479	C-ELECTROLYTIC;CE04W(T) 35V 4.7M
C203	01608-906-047	C-ELECTROLYTIC;CE04W(T) 50V 0.47M
C309	01608-906-109	C-ELECTROLYTIC;CE04W(T) 50V 1M
C616	01608-906-109	C-ELECTROLYTIC;CE04W(T) 50V 1M

C643	01608-906-109	C-ELECTROLYTIC;CE04W(T) 50V 1M
C104	01608-908-109	C-ELECTROLYTIC;CE04W(T) 50V 1M
C618	01608-906-339	C-ELECTROLYTIC;CE04W(T) 50V 3.3M
C605	01608-906-470	C-ELECTROLYTIC;CE04W(T) 50V 47M
C306	01608-906-470	C-ELECTROLYTIC;CE04W(T) 50V 47M
D202	02169-101-490	DIODE;1N4937GP
D301	02169-101-490	DIODE;1N4937GP
D302	02169-101-490	DIODE;1N4937GP
D612	02169-101-490	DIODE;1N4937GP
D613	02169-101-490	DIODE;1N4937GP
D615	02169-101-490	DIODE;1N4937GP
D616	02169-101-490	DIODE;1N4937GP
D617	02169-101-490	DIODE;1N4937GP
D618	02169-101-490	DIODE;1N4937GP
D619	02169-101-490	DIODE;1N4937GP
D620	02169-101-490	DIODE;1N4937GP
D305	02169-206-020	DIODE;RGP 01-12
D306	02169-210-177	DIODE;BA159(T)
D403	02169-210-177	DIODE;BA159(T)
D404	02169-210-177	DIODE;BA159(T)
D405	02169-210-177	DIODE;BA159(T)
D610	02169-210-177	DIODE;BA159(T)
D611	02169-210-177	DIODE;BA158(T)
D402	02169-210-177	DIODE;BA159(T)
D201	02169-301-417	DIODE;1N4148(T)
D304	02169-301-417	DIODE;1N4148(T)
D401	02169-301-417	DIODE;1N4148(T)
D602	02169-301-417	DIODE;1N4148(T)
D603	02169-301-417	DIODE;1N4148(T)
D606	02169-301-417	DIODE;1N4148(T)
D607	02169-301-417	DIODE;1N4148(T)
D614	02169-301-417	DIODE;1N4148(T)
D601	02169-301-417	DIODE;1N4148(T)
D604	02169-401-590	DIODE-ZENER;BZX 79C 5V1
D608	02169-401-590	DIODE-ZENER;BZX 79C 5V1
D609	02169-401-590	DIODE-ZENER;BZX 79C 5V1
D621	02169-406-247	DIODE-ZENER;1N5242B(T)
JWA	03006-700-010	PCB-MAIN;FR-4 DOUBLE 300X220 MD1951U
G1	03124-700-810	PIN-GT;14.2MM2.35PI
TP1	03124-700-810	PIN-GT;14.2MM 2.35PI
	03124-700-810	PIN-GT;14.2MM 2.35PI
	<b>0M901-***-****</b>	<b>ASSY PACKING;MU9511*</b>
	08611-717-210	PACKING-CASE;CB-DW3 WHT(MD-1951U)
	08653-702-210	PE-BAG;PE SHEET T0.015
	08711-718-310	CUSHION;EXPENDED LDPE 45M (MD-1951U)

<p><b>0M901-***-****</b></p> <p>03053-404-410</p> <p>03053-815-610</p> <p>03054-812-510</p> <p>03054-809-710</p> <p>03054-812-520</p> <p>08124-710-210</p> <p>08136-700-010</p> <p>08136-700-020</p> <p>08136-700-030</p> <p>08136-700-040</p>	<p><b>ASSY ACCESSORY;MU9511*</b></p> <p>CABLE-SIGNAL;1200MM CONN(9P MALE)</p> <p>POWER-CORD;LS-14/LS-13 SVT 18AWGx3C 4FT</p> <p>POWER-CORD;LP-34(A)/LS-13 HO5 6FT</p> <p>POWER-CORD KP-550,GTSA-3 0.75MM</p> <p>POWER-CORD,ASSY;EXT-LP 31 HS-B</p> <p>CARD-WARRANTY;MM-1464W</p> <p>INSTRUCTION;MU9511</p> <p>INSTRUCTION;MU9511MU9511F</p> <p>INSTRUCTION;MU9511MU9511G</p> <p>INSTRUCTION;MU9511MU9511A</p>	<p>IMTEC-1910DP</p> <p>USED 220V AC VERSION</p> <p>MU9511AU ONLY USED</p> <p>USED 120V AC VERSION</p> <p>IMTEC-1910DP</p> <p>MU9511F,MU9511AU</p> <p>MU9511G</p> <p>MU9511A</p>
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## A'SSY CODE NO. BY MODEL

<p><b>MU9511A 19" MONOMONITOR</b>            0M901-000-9320 ASSY-MONO MONITOR            0M901-000-9330 ASSY-PACKING            0M901-000-9340 ASSY-ACCESSORY            0M902-000-8670 ASSY-CHASSIS            0M902-000-6690 ASSY-STAND            0M902-000-6680 ASSY-COVER,REAR            0M903-000-7550 ASSY-PWB,MAIN            0M903-000-5720 ASSY-PWB,SUB            0M903-000-7460 ASSY-BRKT,CRT            0M903-000-5740 ASSY-COVER,FRONT            0M903-000-7450 ASSY-PWB,VIDEO            0M904-000-5990 ASSY-PWB,MAIN UNFIN            0M904-000-4760 ASSY-HEAT SINK,TR            0M904-000-4770 ASSY-HEAT SINK,IC            0M904-000-4780 ASSY-SHIELD,FBT            0M904-000-4930 ASSY-HEATSINK,DIODE            0M904-000-4790 ASSY-CRT            0M904-000-4800 ASSY-MOUNTING,CRT            0M904-000-5870 ASSY-BRACKET,POWER            0M904-000-4820 ASSY-COVER,FRONT            0M904-000-4830 ASSY-PWB,LED            0M904-000-4840 ASSY-HEATSINK,VIDEO            0M904-000-5680 ASSY-PWB,VIDEO UNFIN            0M905-000-3130 ASSY-PWB, MAIN AUTO            0M905-000-3830 ASSY-PWB, VIDEO AUTO</p>	<p>0M904-000-4810 ASSY-BRACKET,POWER            0M904-000-5990 ASSY-COVER,FRONT            0M904-000-4830 ASSY-PWB,LED            0M904-000-4840 ASSY-HEATSINK,VIDEO            0M904-000-4850 ASSY-PWB,VIDEO UNFIN            0M905-000-3130 ASSY-PWB, MAIN AUTO            0M905-000-3140 ASSY-PWB, VIDEO AUTO</p>
<p><b>IMTEC-1910DP 19" MONO MONITOR</b>            0M901-001-0650 ASSY-MONO MONITOR            0M901-001-0660 ASSY-PACKING            0M901-001-0980 ASSY-ACCESSORY            0M902-000-6670 ASSY-CHASSIS            0M902-000-6690 ASSY-STAND            0M902-000-7670 ASSY-COVER,REAR            0M903-000-5710 ASSY-PWB,MAIN            0M903-000-5720 ASSY-PWB,SUB            0M903-000-5730 ASSY-BRKT,CRT            0M903-000-7670 ASSY-COVER,FRONT            0M903-000-5750 ASSY-PWB,VIDEO            0M904-000-4750 ASSY-PWB,MAIN UNFIN            0M904-000-4760 ASSY-HEAT SINK,TR            0M904-000-4770 ASSY-HEAT SINK,IC            0M904-000-4780 ASSY-SHIELD,FBT            0M904-000-4930 ASSY-HEATSINK,DIODE            0M904-000-4790 ASSY-CRT            0M904-000-4800 ASSY-MOUNTING,CRT</p>	<p><b>1920M 19" MONO MONITOR</b>            0M901-001-2710 ASSY-MONO MONITOR            0M901-001-2530 ASSY-PACKING            0M901-001-2700 ASSY-ACCESSORY            0M902-000-8950 ASSY-CHASSIS            0M902-000-6690 ASSY-STAND            0M902-000-8980 ASSY-COVER,REAR            0M903-000-7550 ASSY-PWB,MAIN            0M903-000-5720 ASSY-PWB,SUB            0M903-000-7460 ASSY-BRKT,CRT            0M903-000-7740 ASSY-COVER,FRONT            0M903-000-7450 ASSY-PWB,VIDEO            0M904-000-5990 ASSY-PWB,MAIN UNFIN            0M904-000-4760 ASSY-HEAT SINK,TR            0M904-000-4770 ASSY-HEAT SINK,IC            0M904-000-4780 ASSY-SHIELD,FBT            0M904-000-4930 ASSY-HEATSINK,DIODE            0M904-000-4790 ASSY-CRT            0M904-000-4800 ASSY-MOUNTING,CRT            0M904-000-5870 ASSY-BRACKET,POWER            0M904-000-6030 ASSY-COVER,FRONT            0M904-000-4830 ASSY-PWB,LED            0M904-000-4840 ASSY-HEATSINK,VIDEO            0M904-000-5860 ASSY-PWB,VIDEO UNFIN            0M905-000-3130 ASSY-PWB, MAIN AUTO            0M905-000-3830 ASSY-PWB, VIDEO AUTO</p>
<p><b>MU9511G 19" MONO MONITOR</b>            0M901-000-9810 ASSY-MONO MONITOR            0M901-000-9330 ASSY-PACKING            0M901-001-1870 ASSY-ACCESSORY            0M902-000-8660 ASSY-CHASSIS            0M902-000-7410 ASSY-STAND            0M902-000-7020 ASSY-COVER,REAR            0M903-000-7560 ASSY-PWB,MAIN            0M903-000-5720 ASSY-PWB,SUB            0M903-000-7460 ASSY-BRKT,CRT            0M903-000-5740 ASSY-COVER,FRONT            0M903-000-7450 ASSY-PWB,VIDEO</p>	<p><b>MU9511G 19" MONO MONITOR</b>            0M901-000-9810 ASSY-MONO MONITOR            0M901-000-9330 ASSY-PACKING            0M901-001-1870 ASSY-ACCESSORY            0M902-000-8660 ASSY-CHASSIS            0M902-000-7410 ASSY-STAND            0M902-000-7020 ASSY-COVER,REAR            0M903-000-7560 ASSY-PWB,MAIN            0M903-000-5720 ASSY-PWB,SUB            0M903-000-7460 ASSY-BRKT,CRT            0M903-000-5740 ASSY-COVER,FRONT            0M903-000-7450 ASSY-PWB,VIDEO</p>

0M904-000-5900	ASSY-PWB,MAIN UNFIN	0M902-000-7410	ASSY-STAND
0M904-000-4760	ASSY-HEAT SINK,TR	0M902-000-6680	ASSY-COVER,REAR
0M904-000-4770	ASSY-HEAT SINK,IC	0M903-000-6020	ASSY-PWB,MAIN
0M904-000-4780	ASSY-SHIELD,FBT	0M903-000-5720	ASSY-PWB,SUB
0M904-000-4930	ASSY-HEATSINK,DIODE	0M903-000-5730	ASSY-BRKT,CRT
0M904-000-4790	ASSY-CRT	0M903-000-5740	ASSY-COVER,FRONT
0M904-000-4800	ASSY-MOUNTING,CRT	0M903-000-5750	ASSY-PWB,VIDEO
0M904-000-5870	ASSY-BRACKET,POWER	0M904-000-4750	ASSY-PWB,MAIN UNFIN
0M904-000-4820	ASSY-COVER,FRONT	0M904-000-4760	ASSY-HEAT SINK,TR
0M904-000-4830	ASSY-PWB,LED	0M904-000-4770	ASSY-HEAT SINK,IC
0M904-000-4840	ASSY-HEATSINK,VIDEO	0M904-000-4780	ASSY-SHIELD,FBT
0M904-000-5860	ASSY-PWB,VIDEO UNFIN	0M904-000-4930	ASSY-HEATSINK,DIODE
0M905-000-3130	ASSY-PWB, MAIN AUTO	0M904-000-4790	ASSY-CRT
0M905-000-3830	ASSY-PWB, VIDEO AUTO	0M904-000-4800	ASSY-MOUNTING,CRT
<b>MU9511F</b>	<b>19" MONO MONITOR</b>	0M904-000-4810	ASSY-BRACKET,POWER
0M901-001-0670	ASSY-MONO MONITOR	0M904-000-4820	ASSY-COVER,FRONT
0M901-001-1730	ASSY-PACKING	0M904-000-4830	ASSY-PWB,LED
0M901-000-9820	ASSY-ACCESSORY	0M904-000-4840	ASSY-HEATSINK,VIDEO
0M902-000-7010	ASSY-CHASSIS	0M904-000-4850	ASSY-PWB,VIDEO UNFIN
0M902-000-7410	ASSY-STAND	0M905-000-3130	ASSY-PWB, MAIN AUTO
0M902-000-7660	ASSY-COVER,REAR	0M905-000-3140	ASSY-PWB, VIDEO AUTO
0M903-000-6020	ASSY-PWB,MAIN	<b>MU9511TF</b>	<b>19" MONO MONITOR</b>
0M903-000-5720	ASSY-PWB,SUB	0M901-001-2520	ASSY-MONO MONITOR
0M903-000-5730	ASSY-BRKT,CRT	0M901-000-9330	ASSY-PACKING
0M903-000-5740	ASSY-COVER,FRONT	0M901-001-1870	ASSY-ACCESSORY
0M903-000-5750	ASSY-PWB,VIDEO	0M902-000-8660	ASSY-CHASSIS
0M904-000-4750	ASSY-PWB,MAIN UNFIN	0M902-000-7410	ASSY-STAND
0M904-000-4760	ASSY-HEAT SINK,TR	0M902-000-8960	ASSY-COVER,REAR
0M904-000-4770	ASSY-HEAT SINK,IC	0M903-000-7560	ASSY-PWB,MAIN
0M904-000-4780	ASSY-SHIELD,FBT	0M903-000-5720	ASSY-PWB,SUB
0M904-000-4930	ASSY-HEATSINK,DIODE	0M903-000-7460	ASSY-BRKT,CRT
0M904-000-4790	ASSY-CRT	0M903-000-5740	ASSY-COVER,FRONT
0M904-000-4800	ASSY-MOUNTING,CRT	0M903-000-7450	ASSY-PWB,VIDEO
0M904-000-4810	ASSY-BRACKET,POWER	0M904-000-5900	ASSY-PWB,MAIN UNFIN
0M904-000-4820	ASSY-COVER,FRONT	0M904-000-4760	ASSY-HEAT SINK,TR
0M904-000-4830	ASSY-PWB,LED	0M904-000-4770	ASSY-HEAT SINK,IC
0M904-000-4840	ASSY-HEATSINK,VIDEO	0M904-000-4780	ASSY-SHIELD,FBT
0M904-000-4850	ASSY-PWB,VIDEO UNFIN	0M904-000-4930	ASSY-HEATSINK,DIODE
0M905-000-3130	ASSY-PWB, MAIN AUTO	0M904-000-4790	ASSY-CRT
0M905-000-3140	ASSY-PWB, VIDEO AUTO	0M904-000-4800	ASSY-MOUNTING,CRT
<b>MU9511AU</b>	<b>19" MONO MONITOR</b>	0M904-000-5870	ASSY-BRACKET,POWER
0M901-001-1580	ASSY-MONO MONITOR	0M904-000-4820	ASSY-COVER,FRONT
0M901-000-9330	ASSY-PACKING	0M904-000-4830	ASSY-PWB,LED
0M901-001-1540	ASSY-ACCESSORY	0M904-000-4840	ASSY-HEATSINK,VIDEO
0M902-000-7010	ASSY-CHASSIS	0M904-000-5860	ASSY-PWB,VIDEO UNFIN

0M905-000-3130	ASSY-PWB, MAIN AUTO
0M905-000-3830	ASSY-PWB, VIDEO AUTO
<b>MU9511F(NO)</b>	<b>19" MONO MONITOR</b>
0M901-001-2540	ASSY-MONO MONITOR
0M901-001-2550	ASSY-PACKING
0M901-001-1870	ASSY-ACCESSORY
0M902-000-8970	ASSY-CHASSIS
0M902-000-7410	ASSY-STAND
0M902-000-7660	ASSY-COVER,REAR
0M903-000-7560	ASSY-PWB,MAIN
0M903-000-5720	ASSY-PWB,SUB
0M903-000-7460	ASSY-BRKT,CRT
0M903-000-7680	ASSY-COVER,FRONT
0M903-000-7450	ASSY-PWB,VIDEO
0M904-000-5900	ASSY-PWB,MAIN UNFIN
0M904-000-4760	ASSY-HEAT SINK,TR
0M904-000-4770	ASSY-HEAT SINK,IC
0M904-000-4780	ASSY-SHIELD,FBT
0M904-000-4930	ASSY-HEATSINK,DIODE
0M904-000-4790	ASSY-CRT
0M904-000-4800	ASSY-MOUNTING,CRT
0M904-000-5870	ASSY-BRACKET,POWER
0M904-000-5990	ASSY-COVER,FRONT
0M904-000-4830	ASSY-PWB,LED
0M904-000-4840	ASSY-HEATSINK,VIDEO
0M904-000-5860	ASSY-PWB,VIDEO UNFIN
0M905-000-3130	ASSY-PWB, MAIN AUTO
0M905-000-3830	ASSY-PWB, VIDEO AUTO

SCHEMATIC DIAGRAM

MODEL NO: MU9511

CHASSIS NO: JWA

WARNING : BEFORE SERVICING THIS CHASSIS READ THE "X-RAY RADIATION PRECAUTION" SAFETY PRECAUTION AND "PRODUCT SAFETY" NOTICE IN MANUAL

WARNING : \*THIS EQUIPMENT CONTAINS SAFETY CRITICAL COMPONENTS. ALL PARTS SHOWN IN THE SHADED AREAS OF THE SCHEMATIC ARE IMPORTANT TO SAFETY. REPLACE SAFETY-CRITICAL COMPONENT ONLY WITH MANUFACTURER'S RECOMMENDED PARTS LIST FOR EXACT REPLACEMENTS.\*

CAUTION : \*THE SHADED AREA AND MARKS IN THE SCHEMATIC DIAGRAM AND PARTS LIST COMPONENTS THAT HAVE SPECIAL CHARACTERISTICS IMPORTANT IN THE ORIGINAL CIRCUIT OR SPECIFIED IN THE PARTS LIST. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE PRODUCT SAFETY NOTICE. DO NOT DEGRADE IN THE SAFETY OF THE EQUIPMENT THROUGH IMPROPER SERVICING.

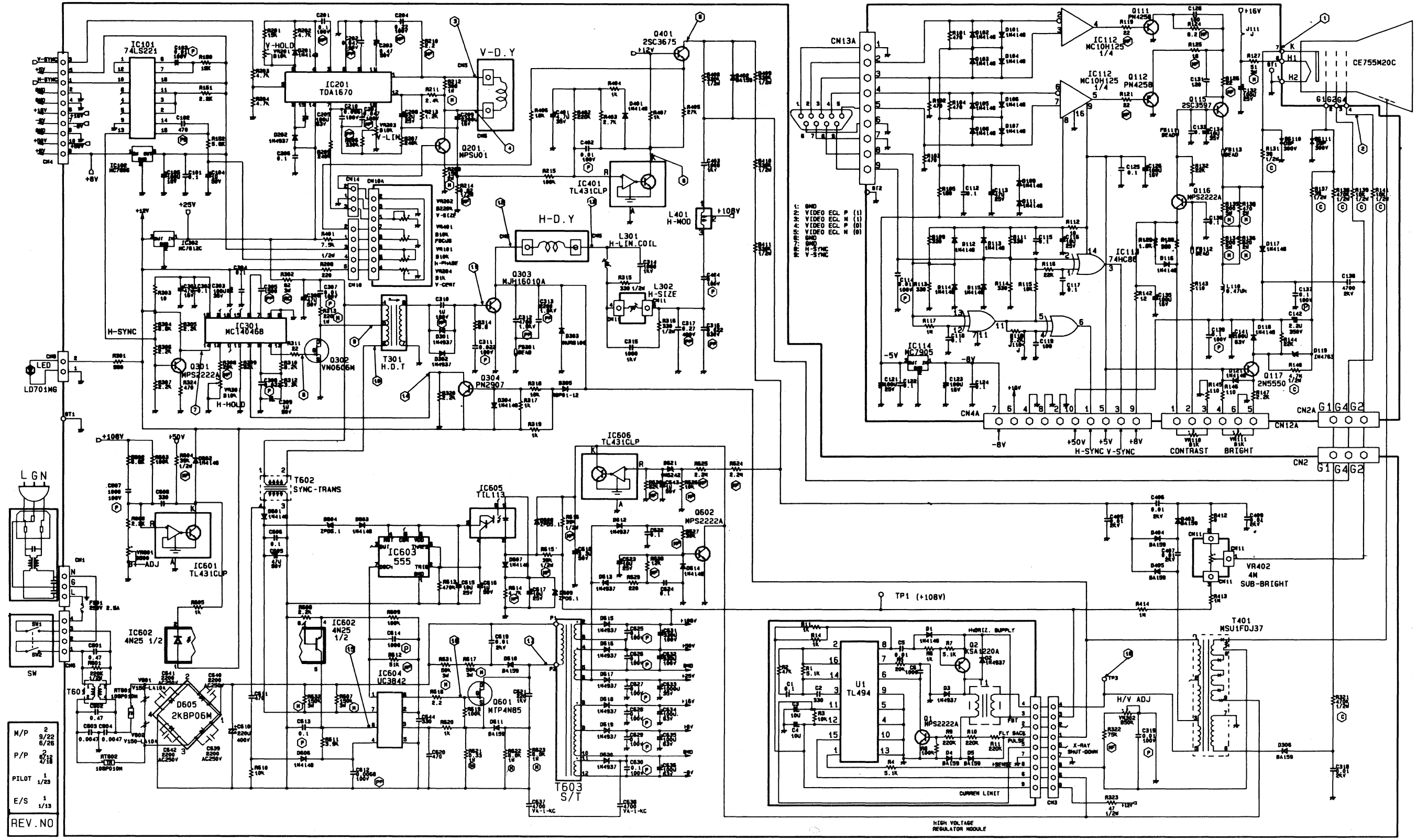
NOTE

- RESISTANCE IS SHOWN IN OHM K=1,000 M=1,000,000. RATED POWER OF RESISTER NOT NOTED IN SCHEMATIC DIAGRAM S 1/4W
- CAPACITANCE IS SHOWN IN UF P=UF. RATED VOLTAGE OF CONDENSER NOT NOTED IN SCHEMATIC DIAGRAM S 50V

3. ABBREVIATION B SYMBOL

- ⊕ R-COMPOSITION ⊕ R-METAL FILM
- ⊕ TANTALUM CAPACITOR ⊕ R-METAL OXIDE
- ⊕ C-POLYESTER ⊕ R-CEMENT
- ⊕ NON POLAR CAPACITOR ⊕ R-FUSIBLE
- ⊕ C-METAL POLYESTER ⊕ C-POLYSTYRENE
- ⊕ C-POLYPROPYLENE ⊕ R-WIRE

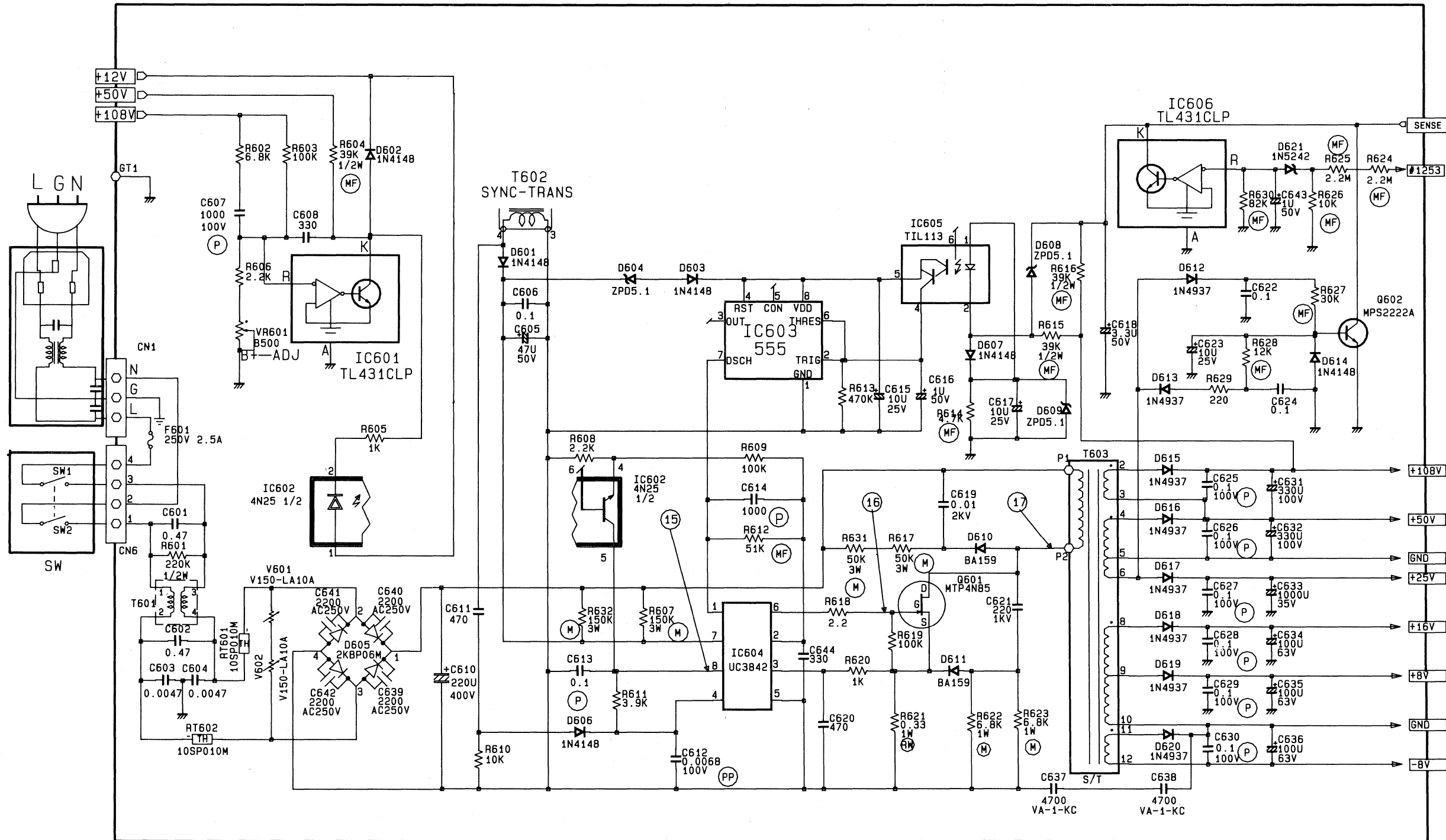
- VOLTAGE IS READ WITH V.T.V.M. FROM INDICATED POINT TO SIGNAL GROUND AND WAVEFORM TAKEN USING PERSONAL WITH ALL.
- THIS SCHEMATIC DIAGRAM IS SUBJECT TO CHANGE WITHOUT NOTICE FOR FAR FURTHER IMPROVEMENT.



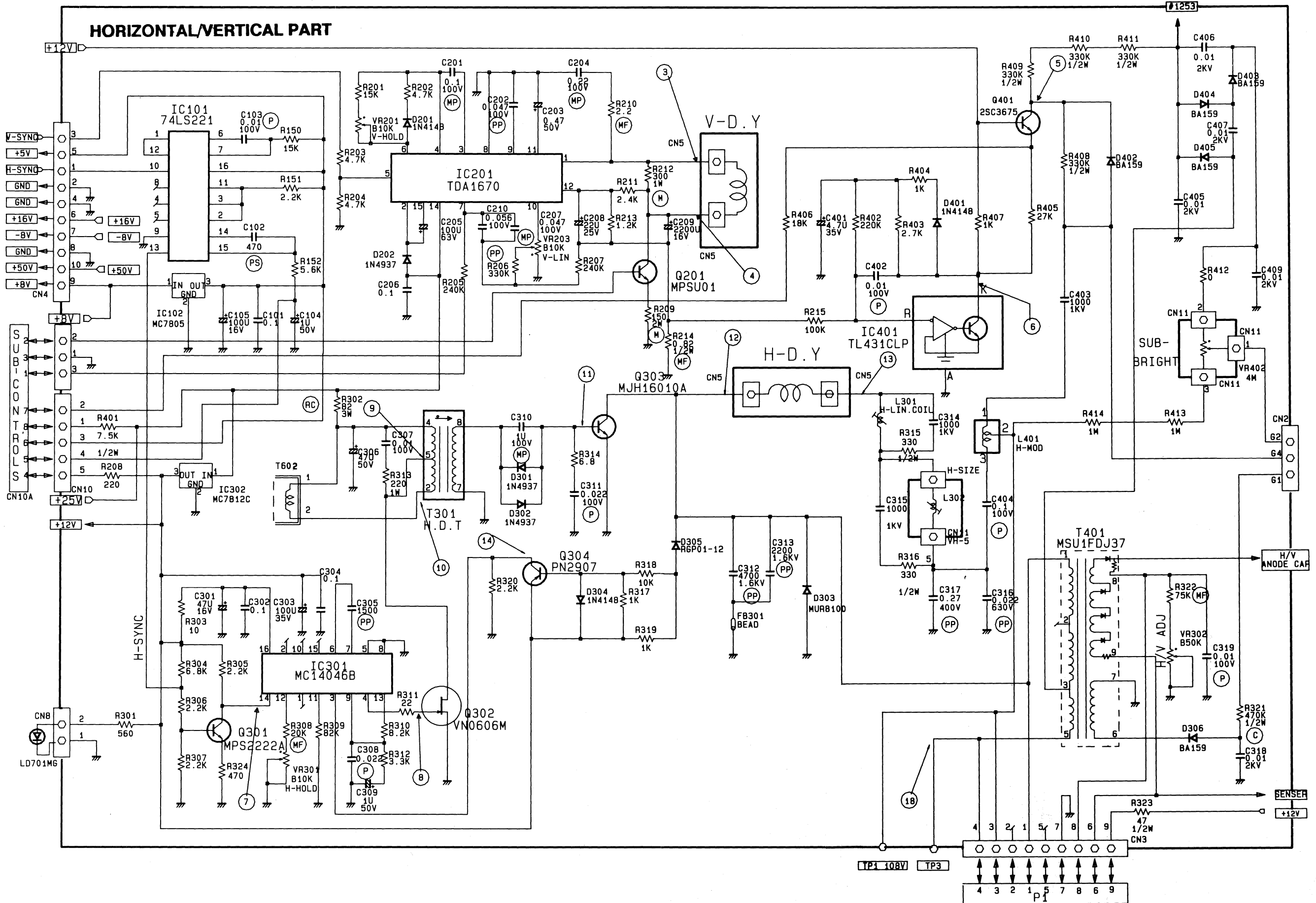
M/P	2	9/25
P/P	2	8/25
PILOT	1	1/23
E/S	1	1/13
REV. NO		



# POWER PART

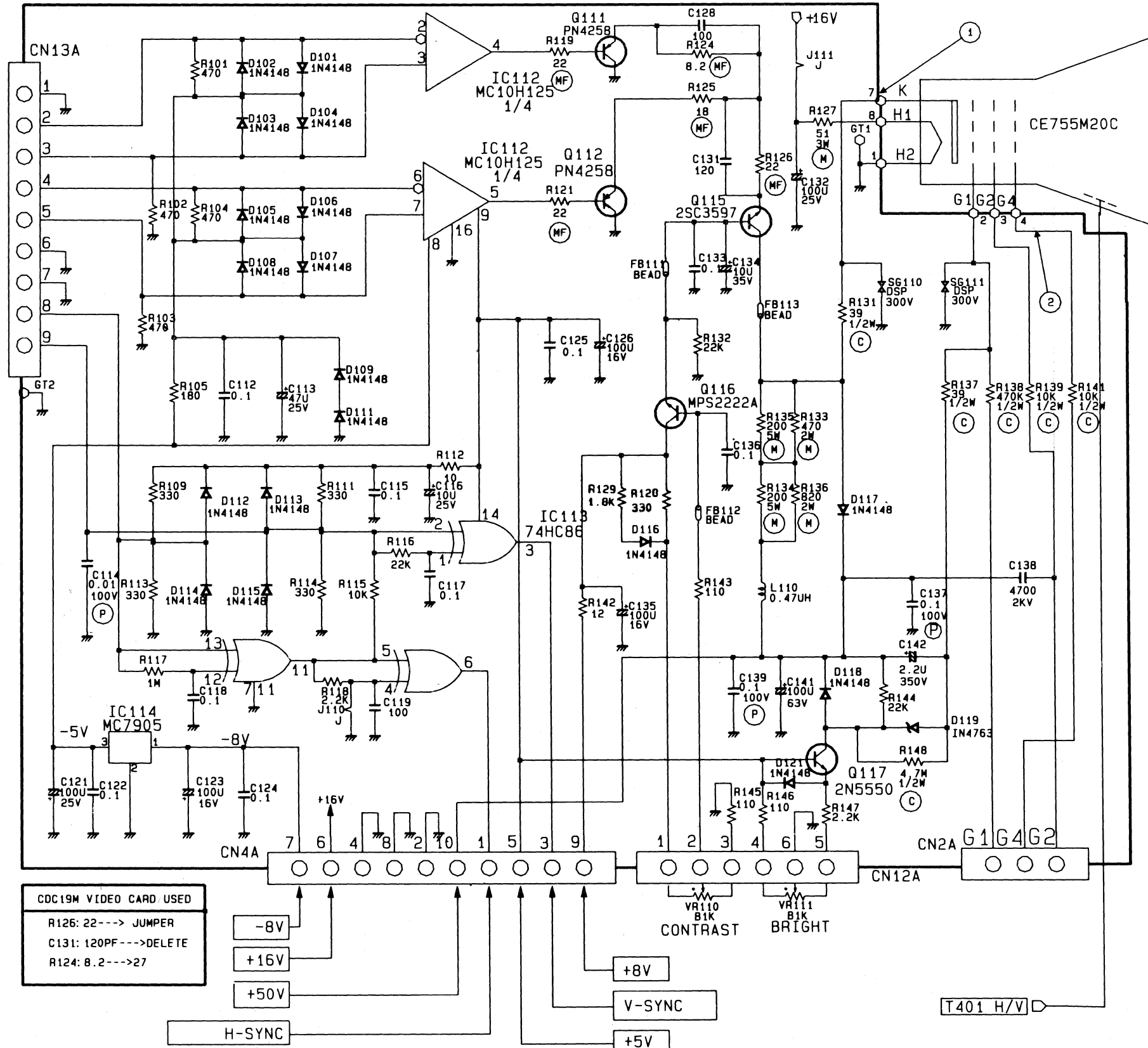
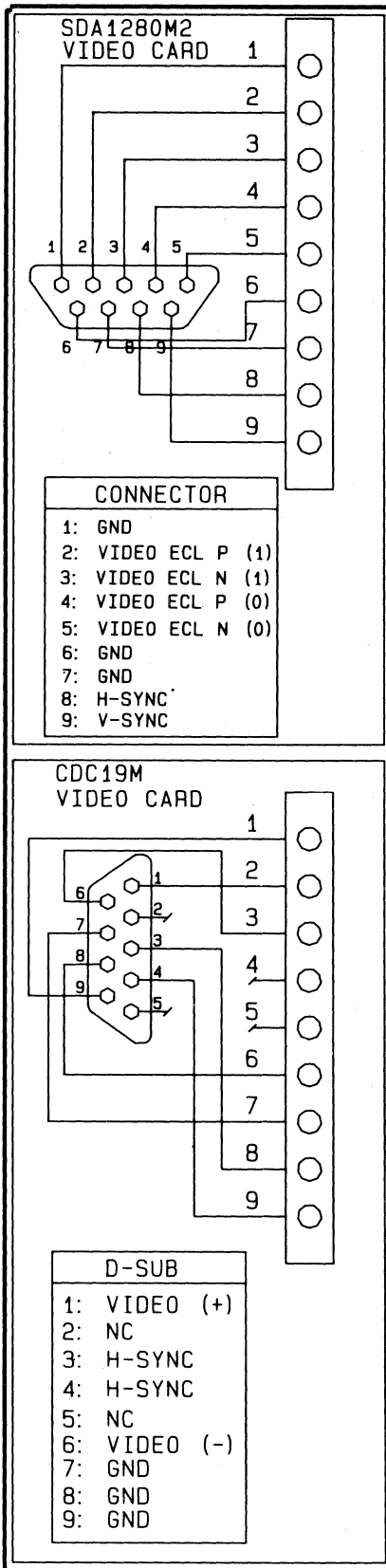


**HORIZONTAL/VERTICAL PART**



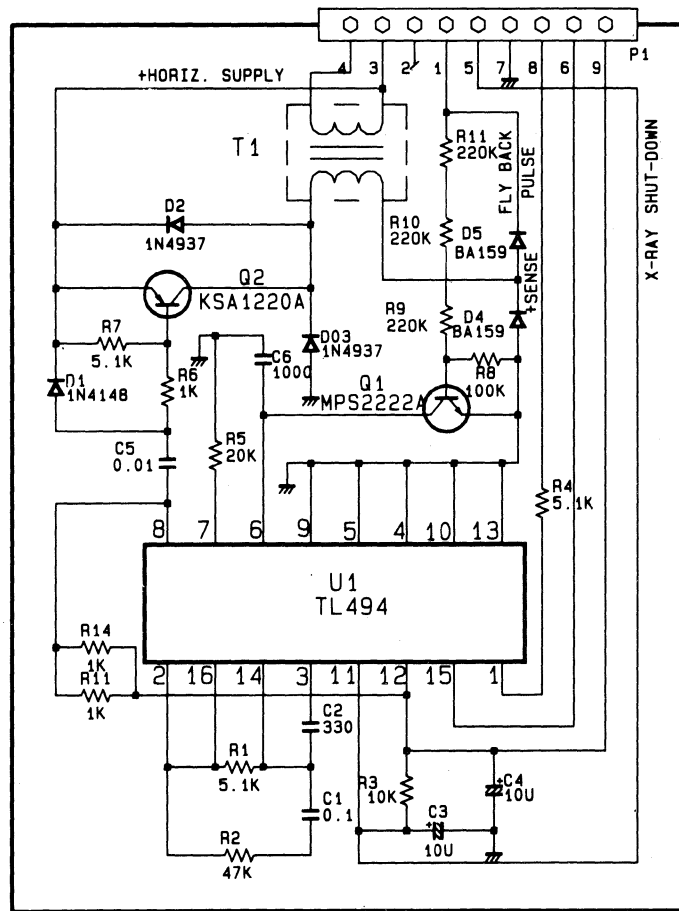
# VIDEO PART

## PIN CONNECTION

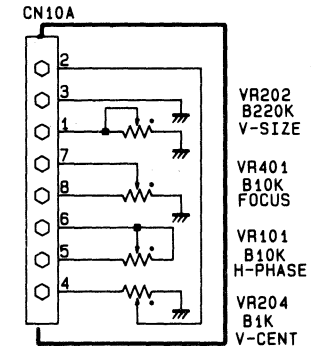


**SUB/HIGH VOLTAGE MODULAR PART**

**HIGH VOLTAGE REGULATOR**



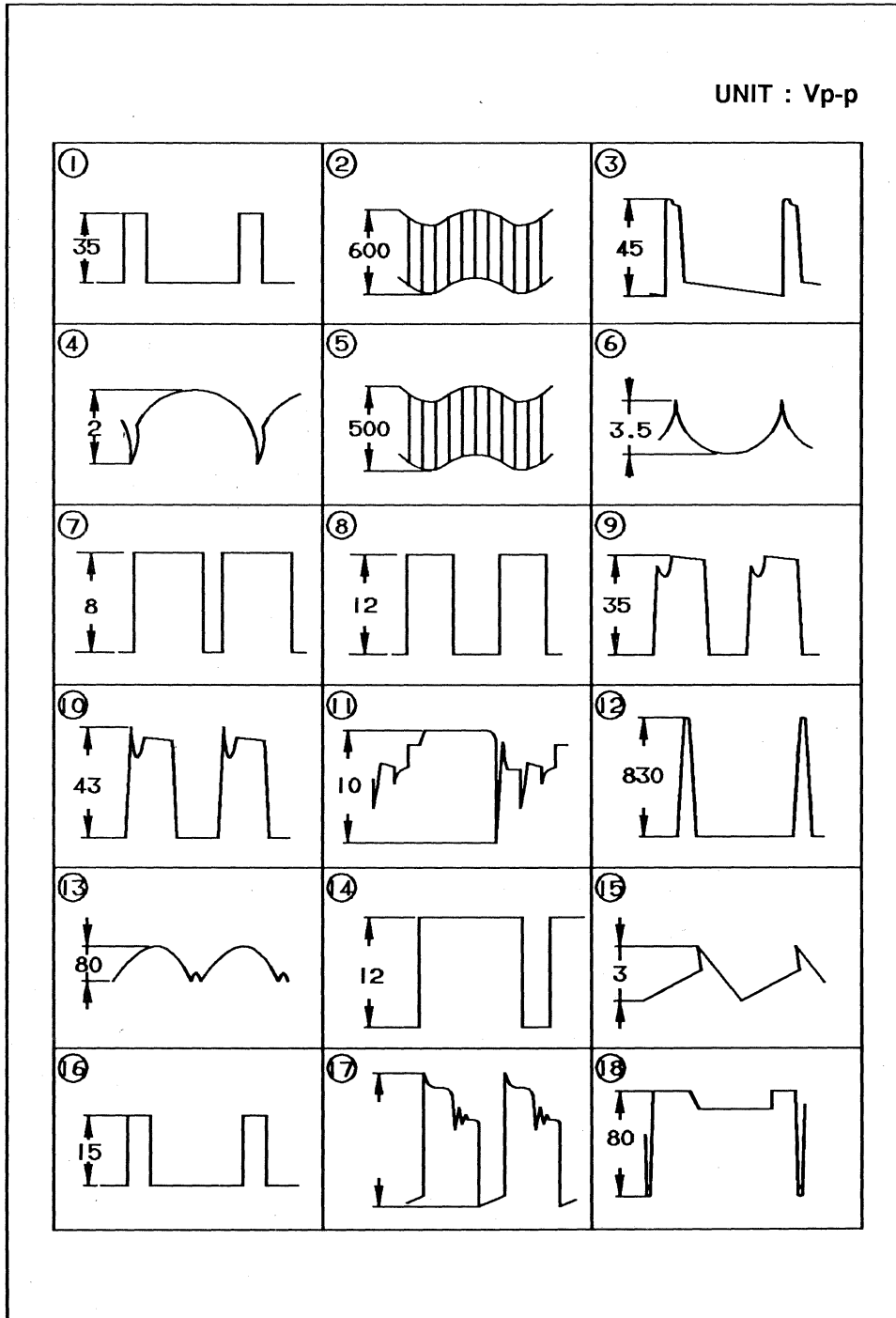
**SUB-CONTROL**



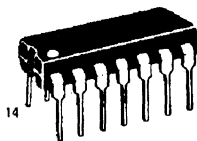

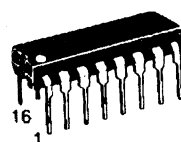

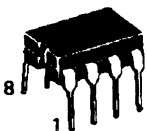

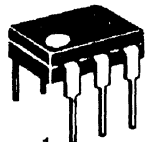

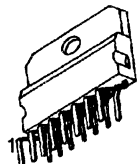
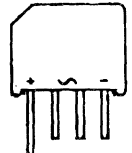



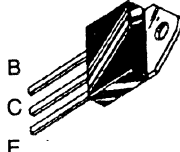

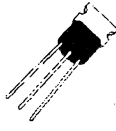

# WAVEFORMS

## WAVEFORM MEASUREMENT CONDITIONS

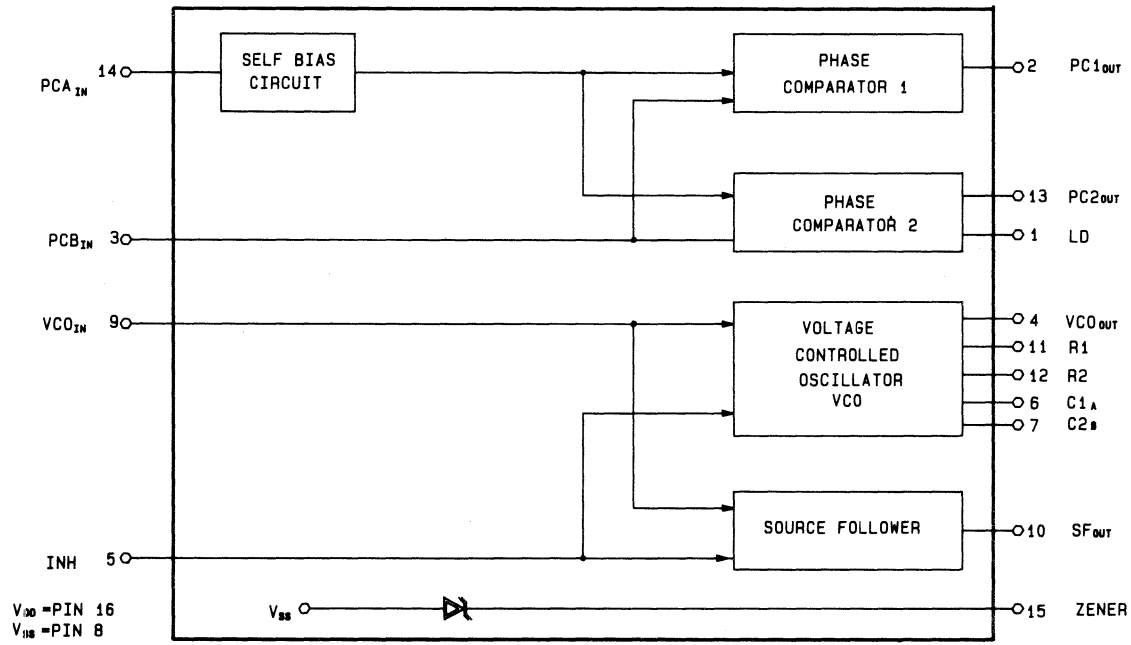
1. The voltage level and waveform at each point are given below on 120V/AC power when this set is connected to a personal computer with a signal input at a white pattern with contrast max.
2. Indicates the waveform check points. (In the chart, waveforms are measured from the point indicated to chassis ground.)



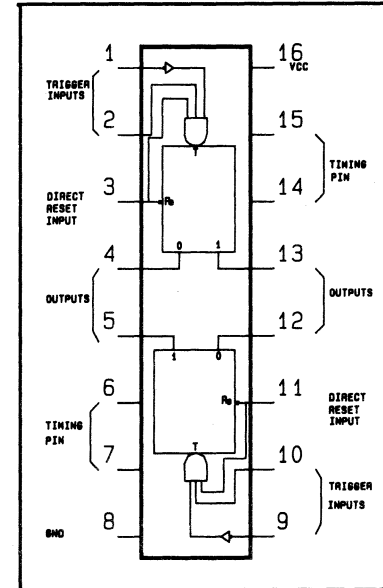
## SEMICONDUCTOR LEAD IDENTIFICATION

	74HC86	IC113		MUR8100	D303
	74LS221 MC10H125 MC14046B	IC101 IC112 IC301		TL431	IC401 IC606 IC601
	UC3842 TLC555M	IC604 IC603		MPS2222A 2N5550 PN2907 PN4258	Q116,Q602,Q301 Q117 Q304 Q111,Q112
	TIL113 4N25	IC606 IC602		MPSU01	Q201
	TDA1670	IC201		2KBP06M	D605
	MC7805 MC7812	IC102 IC302		2SC3597	Q115
	MC7905	IC114		MJH16010A	Q303
	2SC3597	Q115		VN0606M	Q302
	MTP4N85	Q601			

MC14046B  
LOW-POWER COMPLEMENTARY MOS

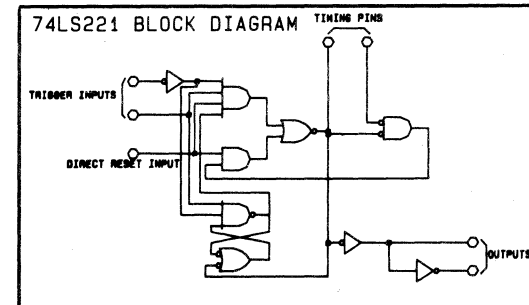
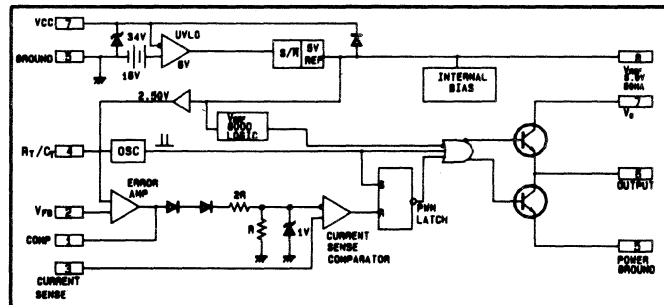


74LS221  
EACH MONOSTABLE MULTIVIBRATOR

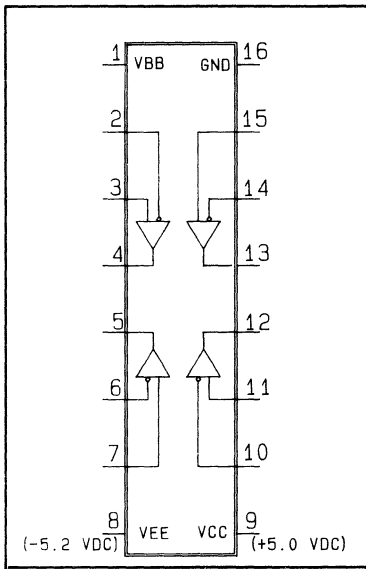


I.C INNER BLOCK DIAGRAM.

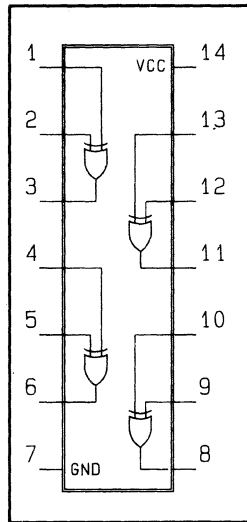
UC3842  
OFF-LINE CURRENT MODE PWM CONTROLLER



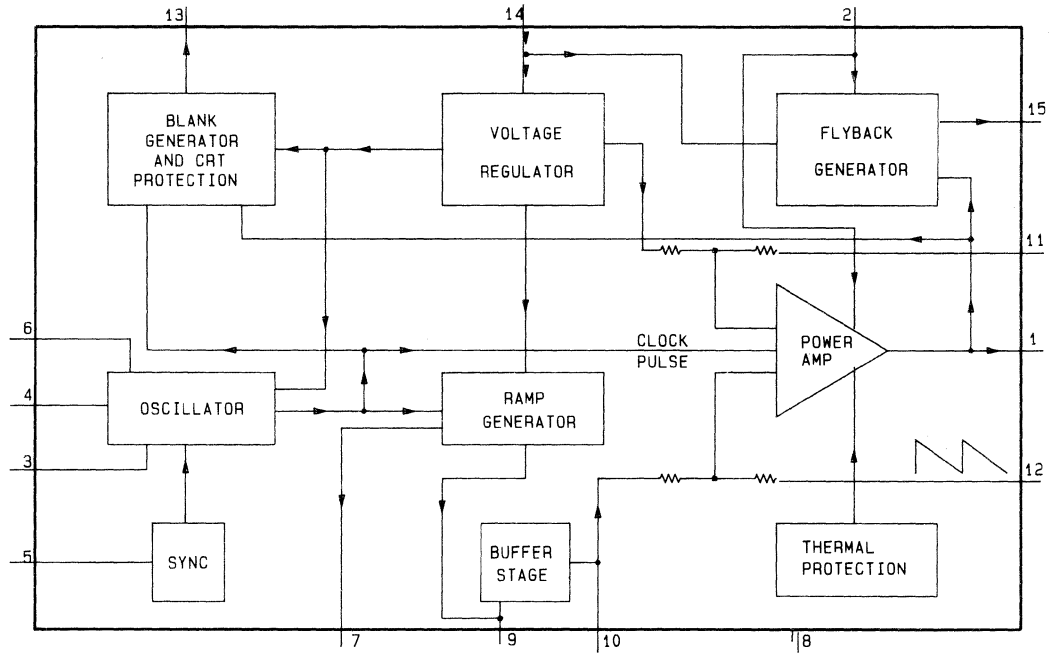
MC10H125  
QUAD MECL-TO-TTL  
TRANSLATOR



74HC86  
HC TTL QUAD XOR



TDA1670A





# MEMO





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