General Partner
Technical world®

Service Manual Monitoare PC

HANSOL. B-17AL.
HANSOL. MAZELLAN 17PX

1. Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock and X-ray exposure.

1-1 Safety precautions

1-1-1 Warnings

1. For continued safety, do not attempt to modify the circuit board.

2. Disconnect the AC power before servicing.

3. With AC power applied, semiconductor heat sinks are potential shock hazards.

1-1-2 Servicing the High Voltage System and CRT

1. 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. (Disconnect the AC line cord from the AC outlet.)

2. Do not lift the CRT by the neck.

3. Handle the CRT only while wearing shatterproof goggles and after completely discharging the high voltage anode.

1-1-3 X-Rays and High Voltage Limits

1. Keep the high voltage below the specified maximum level. Be sure all service personnel are aware of the procedures and instructions covering X-rays.
   The only potential source of X-ray in current solid state display monitors is the CRT.
   However, the CRT does not emit measurable X-ray radiation if the high voltage is as specified in the fire and shock hazard instruction. Only when high voltage is excessive are X-rays capable of penetrating the shell of the CRT, including the lead in glass material.

2. It is essential that service technicians have an accuarate high voltage meter available at all times. Check the calibration of this meter periodically.

3. High voltage should always be kept at the rated value, no higher. Operation at high voltage may cause failure of the CRT or high voltage circuitry and, under certain conditions, may produce X-rays in excess of acceptable levels.

4. When the high voltage regulator is operating properly, there is no possibility of an X-ray problem. Test the brightness and use a meter to monitor the high voltage each time a color monitor is serviced. Make sure the high voltage does not exceed its specified value and that it is regulating correctly.

5. The CRT is especially designed to prohibit X-ray emissions. To ensure continued X-ray protection, replace the CRT only with one of the same type or an equivalent of the original. Carefully reinstall the CRT shields and mounting hardware; these also provide X-ray protection.

6. When troubleshooting a monitor with excessively high voltage, avoid being unnecessarily close to the monitor. Do not operate the monitor for longer than is necessary to locate the cause of excessive voltage.

1-1-4 Fire and Shock Hazard

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

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts inside the monitor.

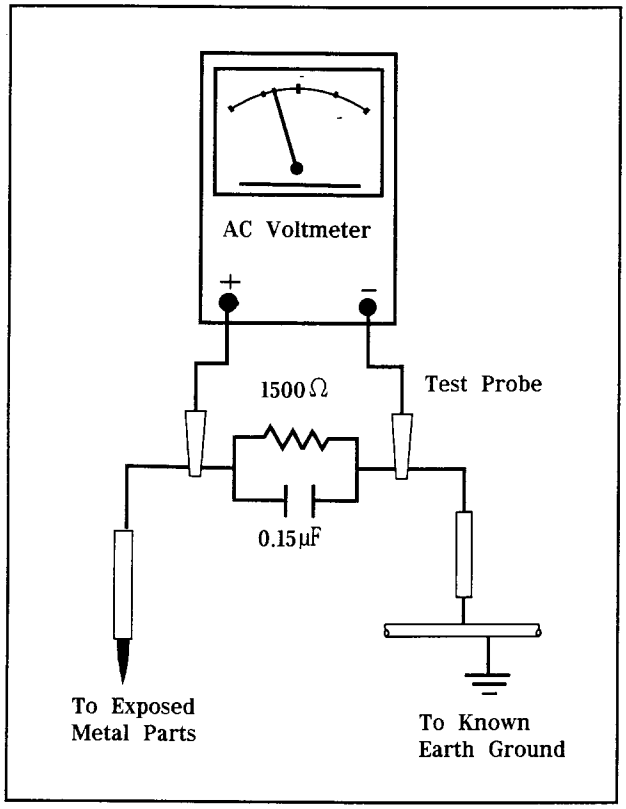


Figure 1-1. Leakage Current Test Circut

2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor network, mechanical insulators, etc.

3. To be sure that no shock hazard exists, check for leakage current in the following manner:

   a. Plug the AC line cord directly into a 120 Volt AC outlet.(Do not use an isolation transformer for this test)

   b. Using two clip leads, connect a 1.5kΩ, 10 watt resistor paralleled by a 0.15μF capacitor in series with an exposed metal cabinet part and a known earth ground, such as an electrical conduit or electrical ground connected to an earth ground.

   c. Use a SSVM or VOM with 1000 ohms per-volt or higher sensitivity to measure the AC voltage drop accross the resistor (see Figure 1-1).

   d. Connect the resistor to an exposed metal part having a return path to the chassis(metal cabinet, screw heads, knobs, shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.

   e. Any reading of 5.25 Volt RMS(this corresponds to 3.5 milliampere AC) or more is excessive and indicates a potential shock hazard. Correct the shock hazard before returning the monitor to the user.

1-1-5 Product Safety Notices

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with componets rated for higher voltage, wattage, etc. A substitute replacement that does not have the same safety characteristics as the recommended replacement part may create shock, fire and / or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1-2 Servicing Precautions

WARNING : An electrolytic capacitor installed with the wrong polarity might explode.

Caution : Before servicing instruments covered by this service manual and its supplements, read and follow the Safety Precautions section of this manual.

Note : If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

1-2-1 General Servicing Precautions

1. Servicing precautions are printed on the cabinet, and should be followed closely.

2. Always unplug the unit's AC power cord from the AC power source before attempting to :
(a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in paralled with an electrolytic capacitor.

3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.

4. After servicing, always check that the screws, components and wiring have been correctly reinstalled Make sure that the portion around the serviced part has not been damaged.

5. Check the insulation between the blades of the AC plug and accessible conductive parts(exampls: metal panels, input terminals and earphone jacks).

6. Insulation Checking Procedure : Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter(500 V) to the blades of the AC plug.

   The insulation resistance between each blade of the AC plug and accessible conductive parts(see above) should be greater than 1 megohm.

7. Never defeat any of the +B voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

8. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3 Electrostatically Sensitive Devices(ESD) Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices(ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground.
   Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.

2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.

3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.

4. Use only a grounded-tip soldering iron to solder ESDs.

5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.

6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.

7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution : Be sure no power is applied to the chassis or circuit and observe all other safety precautions.

8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

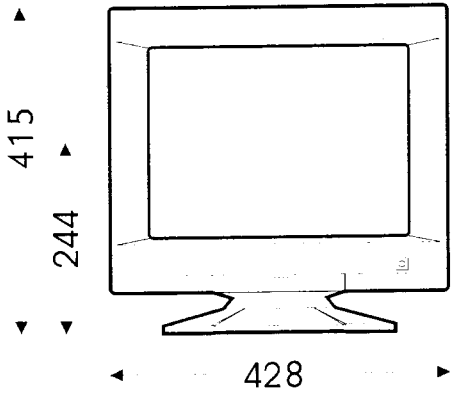
2. Product Specifications

2-1 Specifications

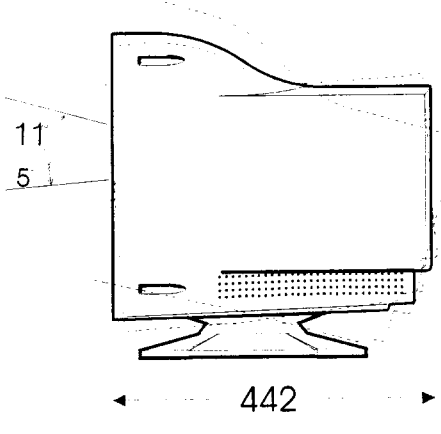
Item	Description
Picture Tube :	17-Inch (43Cm) : 16-Inch(41Cm) Visual, Full square/flat face tube, 90° deflection, 0.26mm Dot pitch, Semi-tint, Non-glare, Anti-reflection and Anti-static charge coating.
Scanning Frequency	Horizontal : 30KHz to 85KHz(Automatic) Vertical : 50Hz to 120Hz(Automatic)
Display Colors Analog input	Unlimited Colors
Maximum Resolution	Horizontal : 1280 Dots Vertical : 1024 Lines
Input Video Signal	Analog 0.714 Vp-p positive at 75Ω internally terminated
Input Sync Signal	Separate Sync :TTL level positive/negative Syne-on-Green : Composite Sync 0.286 Vp-p± 5%/negative(video on Vp-p Positive) Composite Sync : TTL level Positive/negative
Maximum Pixel Clock	135 MHz
Active Display	Horizontal : 306mm ± 3mm(4:3 ratio) Vertical : 230mm ± 3mm
Imput Voltage	100~240V AC±10%, 60Hz/50Hz±3Hz
Power Consumption	120 Watt(Max)
Dimensions Unit(WxHxD) Carton(WxHxD)	16.8×16.37×17.4 Inchs (427×415×442mm) 21.4×20.9×21.8 Inchs (544×530×553mm)
Weight	Net/Gross : 42.2 lbs (19kg)/48.8 lbs(22Kg)
Environmental Considerations	Operating Temperature : 32° F to 104° F(0° C to 40° C)] Humidity : 10% to 80% Storage Temperature : -4° F to 140° F(-20° C to 60° C) Humidity : 5% to 95%
CRT Code No	38250001 (Toshiba) : ARCAS coating

- The B17AL Complies with SWEDAC (MPRII) recommendations for reduced elecrostatic fields.
- Designs and specifications are subject to change without prior notice.

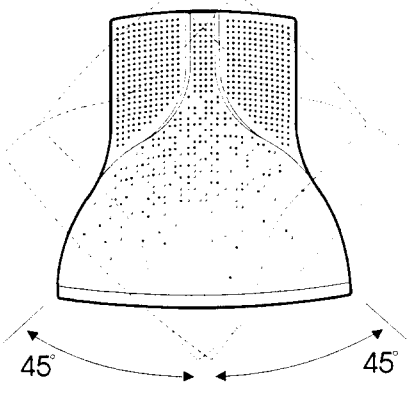
■ FRONT VIEW



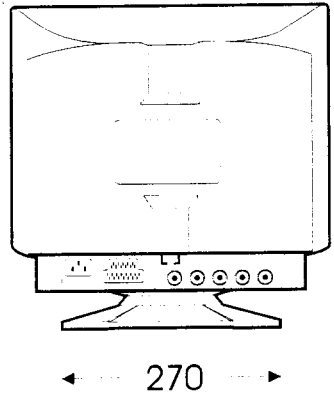
■ SIDE VIEW



■ TOP VIEW

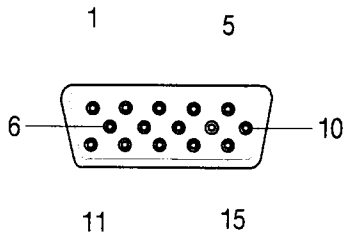


■ REAR VIEW



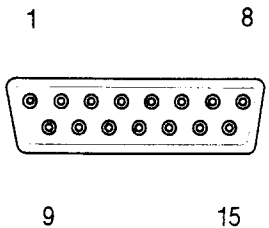
2-3 Pin Assignment Table D-Sub 15 Pin Connectior

The 15-pin D-sub connector(male) of the signal cable (IBM systems) :



Pin No.	Assignment
1	Video
2	Green Video
3	Blue Video
4	Frame Ground
5	N.C
6	Red Video Ground
7	Green Video Ground
8	Blue Video Ground
9	N/C
10	Ground
11	Ground
12	SDA
13	H.Sync
14	V.Sync
15	SCL

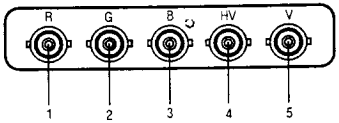
The 15-pin D-sub connector(male) of the adapter (Apple Macintosh systems) :



Pin No.	Assignment
1	Red Ground
2	Red Video
3	H-Sync
4	Sensor 0
5	Green Video/Sync-on-Green
6	Green Ground
7	Sensor 1
8	N.C
9	Blue Video
10	Sensor 2
11	Ground
12	V.Sync
13	Blue Ground
14	Ground
15	N.C

2-4 BNC Connectors

BNC connectors are used with a coaxial cable for improved signal transmission. Better signal transmission becomes critical at high frequencies such as those required for 1280×1024 resolution. Most video boards that operate at 1280×1024 resolution recommend using coaxial cable with BNC connectors. The five BNC connectors on the rear of the monotor can accept Red, Green, and Blue video. Composite sync can be applied separately, or combined with the Green video signal(commonly referred to as "composite sync-on-green").
If composite sync-on-green is used, only three of the five BNC connectors are used. The connectors are labeled accordingly.



BNC Signal Input Type

Pin Assignment	Signals		
	Sync-on-Green	Composite Sync	Separtate Sync
1	Red	Red	Red
2	Green+Sync	Green	Green
3	Blue	Blue	Blue
4	Not used	H/V Comp. Sync	H-Sync
5	Not used	Not used	V-Sync

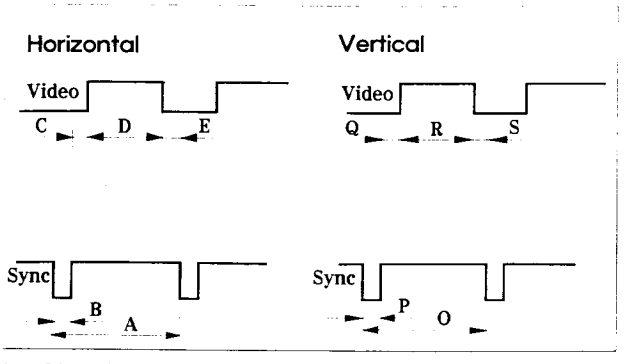
2-5 Timing Chart

This section of the service manual describes the timing that the computer industry recognizes as standard for computer-generated video signals.

Table 2-1 Timing Chart

Timing \ Mode	VGA2/70 Hz 720×400	VGA3/60 Hz 640×480	640/66.667 Hz 640×480	640/75 Hz 640×480	800/75 Hz 800×600	832/74.551 Hz 832×624
fH(kHz)	31.469	31.469	35.000	37.500	46.875	49.726
A psec	31.778	31.778	28.571	26.667	21.333	20.110
B psec	3.813	3.813	2.116	2.032	1.616	1.117
C psec	1.907	1.907	3.175	3.810	3.232	3.910
D psec	25.422	25.422	21.164	20.317	16.162	14.524
E psec	0.636	0.636	2.116	0.508	0.323	0.559
fv(Hz)	70.09	59.940	66.667	75.000	75.000	74.551
O msec	14.268	16.683	15.000	13.333	13.333	13.413
P msec	0.064	0.064	0.086	0.080	0.064	0.06
Q msec	0.858	0.794	1.114	0.427	0.448	0.784
R msec	13.155	15.761	13.714	12.800	12.800	12.549
S msec	0.191	0.064	0.086	0.027	0.021	0.02
Clock Frequency (MHz)	28.322	25.175	30.240	31.500	49.500	57.284
Polarity H.Sync	Negative	Negative	Negative	Negative	Positive	Negative
V.Sync	Positive	Negative	Negative	Negative	Positive	Negative
Remark	Separate	Separate	Separate	Separate	Separate	Separate

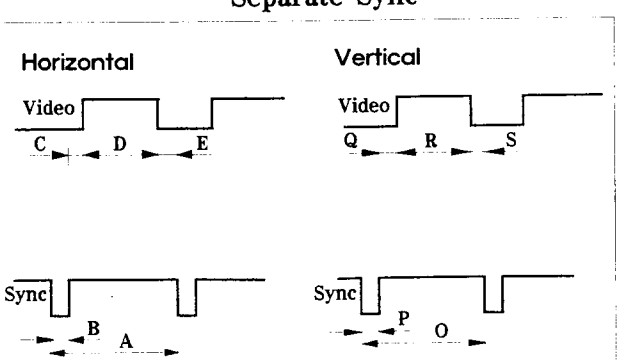
Separate Sync



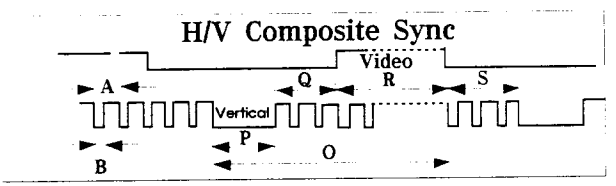
A : Line time total
B : Sync width
C : Back porch
D : Active time
E : Front porch
O : Frame time total
P : Sync width
Q : Back porch
R : Active time
S : Front porch

Timing \ Mode	1024/75 Hz 1024×768	1024/60 Hz 1024×768	1024/70 Hz 1024×768	1280/75 Hz 1280×1024	800/120 Hz 800×600	1152/75 Hz 1152×870
fH(kHz)	60.023	48.363	56.476	79.976	76.923	68.681
A psec B psec C psec D psec E psec	16.660 1.219 2.235 13.003 0.203	20.677 2.092 2.462 15.754 0.369	17.707 1.813 1.920 13.653 0.320	12.504 1.067 1.837 9.481 0.119	13.000 1.100 1.400 10.000 0.500	14.560 1.280 1.440 11.520 0.320
fv(Hz)	75.029	60.004	70.069	75.025	120.192	75.062
O msec P msec Q msec R msec S msec	13.328 0.050 0.466 12.795 0.017	16.666 0.124 0.600 15.880 0.062	14.272 0.106 0.513 13.599 0.053	13.329 0.038 0.475 12.804 0.013	8.320 0.195 0.247 7.800 0.078	13.322 0.044 0.568 12.667 0.044
Clock Frequency (MHz)	79.750	65.000	75.000	135.000	80.000	100.000
Polarity H.Sync V.Sync	 Positive Positive	 Negative Negative	 Negative Negative	 Positive Positive	 Positive Positive	 Negative Negative
Remark	Separate	Separate	Separate	Separate	Composite (Sync-on-green+ Composite)	Separate

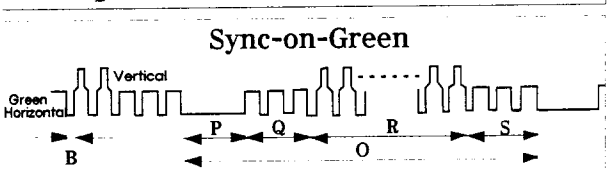
Separate Sync



H/V Composite Sync



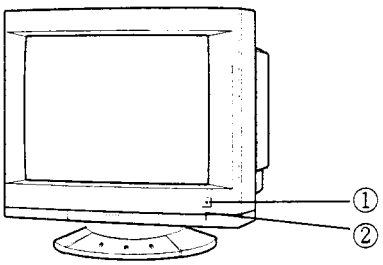
Sync-on-Green

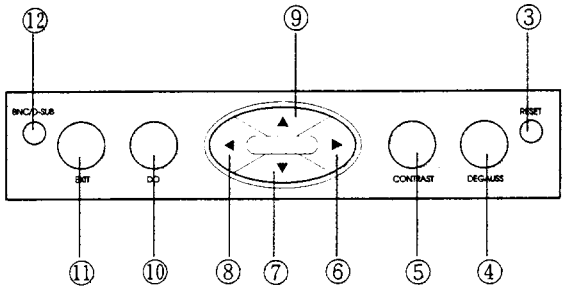


A : Line time total
B : Sync width
C : Back porch
D : Active time
E : Front porch
O : Frame time total
P : Sync width
Q : Back porch
R : Active time
S : Front porch

3 Operating Instructions

3-1 Front View and Controls Panel





Location	Symbol	Description
1	⏻	Power Button
2	▭	Power Indicator LED(Dual Color)
3	RESET	Recall Button
4	DEGAUSS	Degauss Button
5	CONTRAST	Contrast Control Button
6	〈	Position-Right shift, SIZE-H narrow
7	∨	Position-bottom shift, SIZE-V short
8	〉	Position-Left Shift, SIZE-H wide
9	∧	Position-Top Shift, SIZE-V tall
10	Do	To the main menu, To the sub menu
11	Exit	- Exits the OSD controls - To the main Menu
12	BNC/D-SUB	BNC/D-Sub Button

On screen Display

This monitor features an On Screen Display(OSD) that shows infomation about the display settings. The OSD appears on the screen when you select a Do button. "ON SCREEN MENU" controls include the following extended controls such as size, position, Geometry, color Adjust, Brightness and contrast utilities. Adjust are saved instantly. The currently addressed control can be reset to factory settings by pressing the Reset button.

3-2 Display Power Management Signaling (DPMS)

This monitor is EPA Energy Star compliant and NUTEK compliant when used with a computer equipped with the VESA DPMS function. If your computer system cannot support a display power management function, you may purchase an optional DPMS software program to Take advantage of the power saving function. Please contact Hansol or your dealer, for more information.

Table 3-1 Display Power Management Signaling(DPMS) Standard

State / Item	Normal Operation	Standby Mode	Suspend Mode Position A1	Power off Mode Position A2
Horizontal Sync Vertical Sync Video	Active Active Active	Inactive Active Blanked	Active Inactive Blanked	Inactive Inactive Blanked
Power indicator	Green	Green	Green/Amber	Yellow/Binking
Power Consumption	120W(Max) 100W(nominal)	Less than 80W	Less than 30W	Less than 8W

For Energy conservation turn your monitor off when the monitor is not needed, or when leaving it unattended for long periods.

The monitor automatically returns to the normal operation state when horizontal and vertical sync returns. This occurs when you move your mouse or press a key on your keyboard.

4. Disassembly and Reassembly

This section of the service manual describes the disassembly and reassembly procedure for the Mazellan 17PX(B17AL) monitor.

WARNING : This monitor contains electrostatically sensitive devices. Use caution when handling any components.

4-1 Disassembly

4-1-1 Cabinet Removal

1. With a pad beneath it, stand monitor on its front with the CRT faceplate facing downward and the base closest to you. Make sure nothing will damage the CRT faceplate.

2. Working from the back of the monitor, remove the 6 screws, and then remove the Rear housing.

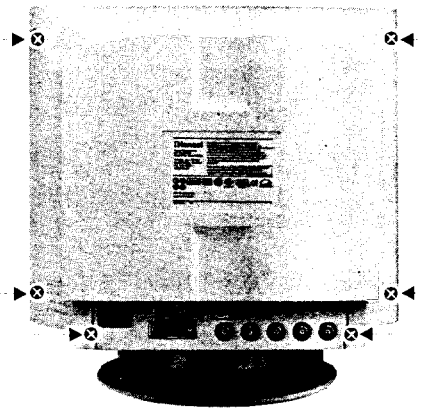
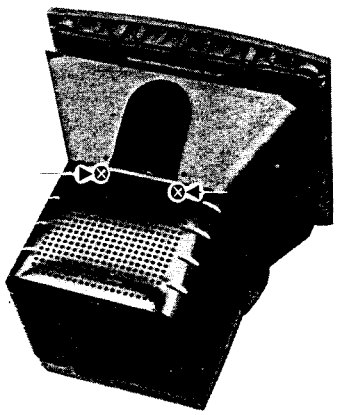


Fig 1

3. Remove the 2 screws on the top of the Shield Cover.



4. Remove the 8 screws on each side of the Shield and the 2 screws from back of the Shield.

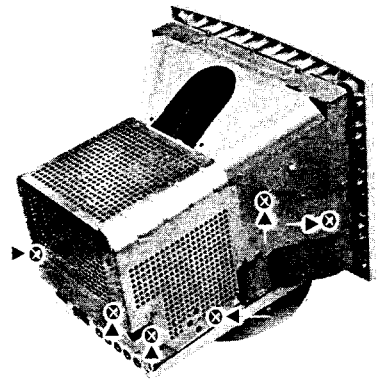
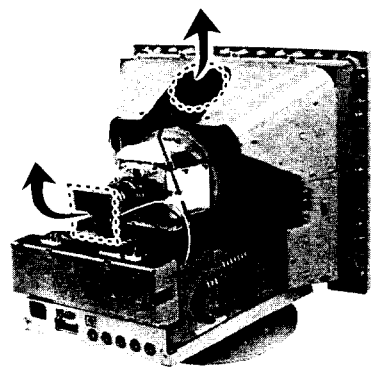


Fig 3

5. Remove the Shield Cover.

4-1-2 Main PCB and Video PCB Removal

1. Remove the Anode Cap. (Be careful.!!)
2. Remove the CN102 (Degausing connector)
3. Remove the connector CN602 in the Socket PCB.
4. Remove the Socket PCB from the CDT



5. Remove the LED screw and the 2 screws on both sides of Bottom Cover.
6. Remove the Bottom Cover.
7. Remove the 2 screws between CRT Chassis and Bottom Chassis.

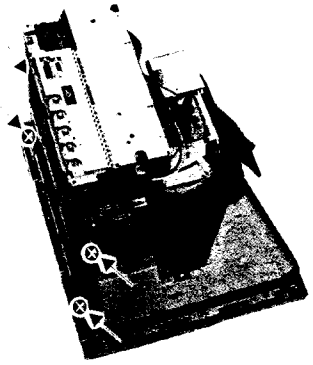


Fig 5

8. Remove the CN502 between Main PCB and Control PCB and the CN301, CN201, CN302 as pulling the Video PCB and Main PCB assembly.
9. Remove the CN104. (LED connector)

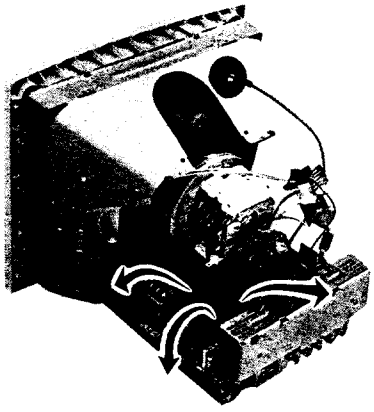


Fig 6

4-1-3 Main PCB and Video PCB Division

1. Remove the connectors CN408 and CN409 on the Video PCB.
2. Remove the connector CN410 on the Video PCB.
3. Remove the 2 screws on both sides of Bottom Chassis.
4. Lift off the Video PCB assembly and divide it from the Main PCB.
5. Remove the 2 screws in the Inlet Socket and the 6 screws between Main PCB and Bottom Chassis.
6. Remove the Bottom Chassis from the Main PCB.

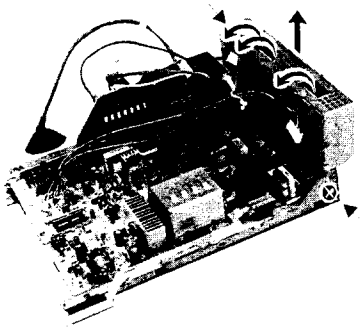


Fig 7

4-1-4 CRT Removal

1. Remove the 10 screws around CRT Chassis.
2. Remove the CRT Chassis and Degaussing Coil.
3. Remove the 4 screws of Bezel.

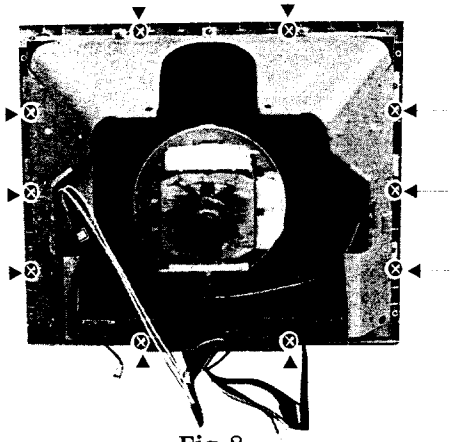


Fig 8

4. Remove the CRT ground wire.

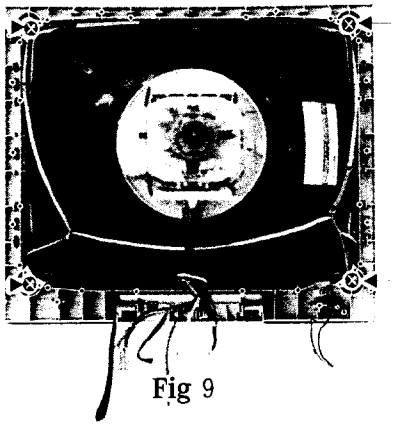


Fig 9

5. Remove the Bezel

Caution : 1. Do not lift the CRT by the neck.
2. If you will be reinstalling this CRT to the monitor, be sure to place the CRT face down on a protective pad.

4-2 Reassembly

Caution : Always use a preotective pad under the CRT to protect its faceplate.

4-2-1 CRT Reassembly

1. If removed, replace the ground Assembly.
2. Position the CRT on the Bezel and replace the 4 screws.
3. Replace the Degaussing Coil on the CRT Chassis.
4. Reposition the CRT chassis and Degaussing Coil.
5. Replace its 10 screws.
6. Replace the LED screw on the Bezel.

4-2-2 Main PCB and Video PCB Combination

1. Position the Main PCB on the Bottom Chassis and replace the 6 screws.
2. Reposition the Inlet Socket and replace the 2 screws.
3. Reposition the Video PCB and replace the 2 screws in the Bottom Chassis.
4. Replace the Bottom Cover.
5. Reconnect the Power Link in the Bottom Chassis.

4-2-3 Main PCB and Video PCB Reassembly

1. Reconnect the Connector CN502, CN301,CN201, CN302, CN104.

2. Reconnect the Connector CN102.
3. Put the assembly and replace the 2 screws on both sides of Bottom Cover.
4. Replace the 2 screws between CRT chassis and Bottom Chassis.
5. Reconnect the CRT PCB on the CRT.
6. Reconnect the Connector CN410 on the Video PCB.
7. Reconnect the Connector CN408, CN409 on the Video PCB.
8. Reconnect the Connector CN602 on the Socket PCB.
9. Replace the Anode CAP.

4-2-4 Cabinet Ressembly

1. Replace the Shield Cover and its 12 screws.
2. Lay the monitor down on its faceplate.
3. Replace the Rear Cover and the 6 screws.
4. Set monitor on its stand and make sure the CRT faceplate was not scratched or otherwise damaged.

5. Alignment and Adjustments

This section of the service manual explains how to make permanent adjustments to the monitor.

5-1 General Instructions

5-1-1 Before Making Adjustments

5-1-1(a) ORIENTATION

When servicing, always face monitor to the east.

5-1-1(b) MAGNETIC FIELDS

Whenever possible, use magnetic field isolation equipment such as a Helmholtz field to surround the monitor. If a Helmholtz foeld is not available frequently degauss the unit under test.

Caution: Other electrical equipment may cause external magnetic fields which may interfere with monitor performance.

Use an external degaussing coil to limit magnetic build up on the monitor. If an external degaussing coil is not available, use the internal degaussing circuit. However, do not use the internal degaussing circuit more than once per 30 minutes.

5-1-1(c) TEST AND BURN-IN MODE

Remove the signal cable from the monitor. Warm it up for 30 minutes before servicing the monitor.

5-1-1(d) WARM-UP TIME

The monitor must be on for 30 minutes before starting alignment. Warm-up time is especially critical in color temperature and white balance adjustments.

5-1-1(e) SIGNAL

Analog, 0.714 Vp-p positive at 75 ohm termination
Sync:Separate/composite
(TTL level negative/positive)

Sync-on-Green:
Composite sync,0.286 Vp-p negative
(Video:0.714 Vp-p positive)

5-1-1(f) SCANNING FREQUENCY

Horizontal : 30㎑ to 85㎑(Automatic)
Vertical : 50Hz to 120Hz(Automatic)

Unless otherwise specified, adjust to 1280×1024 mode (H:79.976㎑, V:75Hz) signals.
Refer to Table 2-1

5-1-1(g)+B 195V LINE ADJUSTMENT

Signal: 1280×1024(H:79.976㎑ and V:75Hz)
Display image: Full white pattern
Contrast: Maximum
Brightness: Maximum

Adjust VR101 to DC 195 V± 1V at 304 collector and GND.

5-1-1(h) HIGH VOLTAGE ADJUSTMENT

Signal: 1280×1024(H:79.976kHz and V: 75Hz
Contrast: Maximum
Brightness: Maximum

Adjust VR701 to 26kV ± 0.2kV.

5-1-1(i) CENTER RASTER

Adjust SW301 so that back raster comes to center when you apply a signal of H:79.976㎑/V:75Hz.

5-1-1(j) BRIGHTNESS AND CONTRAST

Unless otherwise specified, adjust on control Box:
Brightness: Maximum
Contrast: Maximum

5-1-2 Required Equipment

The following equipment may be necessary for adjustment procedures:

5-1-2-(a) Display Cpmtrol Adjustment

1. Non-metallic(-)screwdriver:1.5㎜
   Non-metallic(-)screwdriver:3㎜

2. Philips(+)screwdriver:3㎜
3. Non-metallic hex key:2.5㎜
4. Digital Multimeter(DMM), or
   Digital Voltmeter(DVM)
5. Signal generator,or
   Computer with a video board 1280×1024 @75Hz
   Required software:
   DisplayMate for Windows from Sonera Tachnologies

5-1-3(b) Color Adjustments

1. Color analyzer, or any luminance measurement equipment

5-1-3 After Making Adjustments

After finishing all adjustments, test monitor in all directions. If, for example, the monitor does not meet adjustment specifications when facing north, reposition the monitor to face the east and readjust it. This time, try for an adjustment closer to the ideal setting within the tolerance range. Test the unit again in all directions. If the monitor again fails to meet specifications, contact your Regional After Service Center for possible CRT replacement.

5-2 Display Control Adjustments

5-2-1 Centering

Centering means to position the center point of the display in the middle of the display area. Horizontal size and position and vertical size and position control the centering of the display.

CONDITIONS

Scanning frequency:	79.976㎑/75Hz
Display image:	Crosshatch pattern
Brightness:	Maximum
Contrast:	Maximum

Adjust the horizontal size and vertical size to their optimal settings: (4:3ratio) 306㎜(H)×230㎜(V)

Adjust the horizontal position and vertical position to ≤ 6.0 and 4.0㎜ of the center point of the screen.

| A-B | ≤ 6.0㎜
| C-D | ≤ 4.0㎜

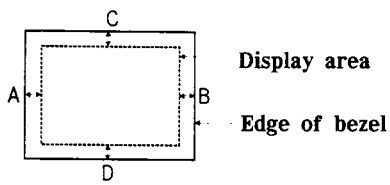


Fig. 5-1 Centering

5-2-2 Linearity

Linearity affects the symmetry of images as they display on the screen. Unless each row or column of blocks in a crosshatch pattern is of equal size, or within the tolerances shown in Tables 5-1, the image appears distorted, elongated or aquashed. Linearity is controlled both horizontally and vertically.

CONDITIONS

Scanning frequency:	79.976㎑/75Hz
Display image:	Crosshatch pattern
Brightness:	Maximum
Contrast:	Maximum

5-2-2(a) Horizontal Linearity Adjustment

This monitor offers only vertical linearity adjustments. Horizontal Linearity is fixed in the chassis and is not adjustable. If the monitor does not meet the tolerances as listed in Tables 5-1, contact your Regional After Service Center for possible CRT replacement.

5-2-2(b) Vertical Linearity Adjustment

To adjust Vertical Linearity, refer to Tables 5-1 for the tolerance range.

Table 5-1

Horizontal	7%MAX
Vertical	7%MAX

$$\frac{\text{MAX-MIN}}{\text{MEAN}} \times 100$$

5-2-3 Trapezoid Adjustment

CONDITIONS

Scanning frequency: 79.976kHz/75Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

At the trapezoidal on the geometry menu, push 「▶」 button or 「◀」 button to make the image or the test pattern rectangular.

| A-B | < 2.5mm | C-D | < 2.5mm

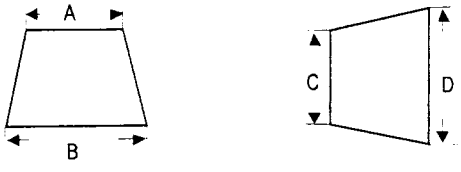


Fig. 5-2 Trapezoid

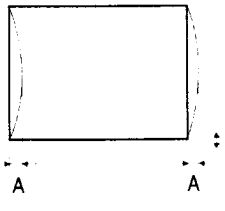
5-2-4 Pinbalance Adjustment

CONDITIONS

Scanning frequency: 79.976kHz/75Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

At the pinbalance on the geometry menu, push 「▶」 button or 「◀」 button to make the image or the test pattern rectanglar.

2.0mm ≤ A



5-2-5 Parallelogram Adjustment

CONDITIONS

Scanning frequency: 79.976kHz/75Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

At the pinbalnce on the parallelogram menu, push 「▶」 button, or 「◀」 button to make the image or the test pattern rectanglar.

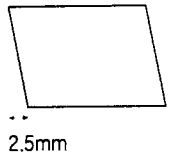


Fig. 5-3 Parallelogram

5-2-6 Side Pincushion Adjustment

CONDITIONS

Scanning frequency: 79.976kHz/75Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

At the Side Pincushion on the geometry menu, push the 「▶」 button, or 「◀」 button to make the image or the test pattern rectanglar.

| C1 | , | C2 | ≤ 2mm, | D1 | , | D2 | ≤ 2.0mm

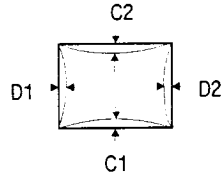


Fig. 5-4 Pincushion

5-2-7 Tilt Adjustment

CONDITIONS

Scanning frequency: 79.976kHz/75Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

At the Rotation on the geometry menu, push 「▶」 button, or 「◀」 button to make the image or the test pattern rectanglar.

Use mechanical adjustment if correction needed is >1mm.

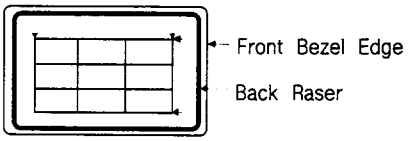


Fig. 5-5 CRT Tilt Adjustment

5-2-8 Degauss

The degaussing circuit can effectively function only once per 30 minutes. If available, use an external degaussing coil during servicing. No adjustments are available for the degaussing circuit.

5-3 Color Adjustments

Note: To make color adjustments you must have one of the following configurations:

1. Signal Generator.
2. Display Mate for windows software from Sonera Technologies.

Before making adjustmants check that the video signals are as follows:

Video:Analog 0.714 Vp-p (at 75Ω termination).
Sync :Separate TTL level.
Unless otherwise specified, use 1280×1024 signal (79.976㎑/75㎐) for the adjustments.

5-3-1 Color Adjustment

CONDITIONS

Scanning frequency:	79.976㎑/75㎐
Display image:	Crosshatch pattern
Brightness:	Maximum
Contrast:	Maximum

At the user mode of color, Adjust on the color adjust menu, select R,G,B and push 「▶」 button or 「◀」 butten to make the ideal color.

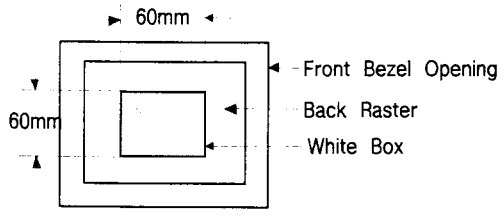


Fig.5-6 White Box Pattern

5-3-2 Video gain adjust

Push the EXIT button and 「▶」 button simultaneously. Then, gain adjust menu is appear. Select color R,G,B and push 「▶」 button or 「◀」 button to make the ideal color.

5-3-3 Focus Adjustment

CONDITIONS

Scanning frequency:	79.976㎑/75㎐(1280×1024)
Display image:	Crosshatch pattern
Brightness:	Maximum
Contrast:	Maximum

PROCEDURE

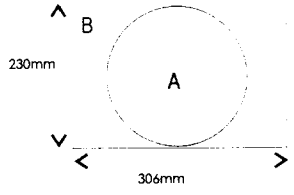
1. Adjust Focus VR on FBT to display sharpest image possible.
2. Use Locktite to seal Focus VR in position.

5-4 Convergence Adjustments

Misconvergence occurs when one or more of the electron beams in a multi beam CRT fail to meet the other beams at a specified point.

Table 5-2 Misconvergence Tolerances

Position	Error in mm	CRT Dot Pitch	Remark
Center(A)	0.3	0.26	$\geq$ 800×600 Resolution
Edge(B)	0.4	0.26	$\leq$ 800×600 Resolution



5-4-1 Static (Center) Convergence

Static convergence involves the alignment of the red, blue and green lines in the center area of the display. See "Dynamic Convergence" for alignment of the color fields around the edges of the display.

CONDITIONS

Orientation : Monitor facing east
Warm-up : 30 minutes
Display image : Crosshatch pattern
Tolerances : See Table 5-2

As shown in Figure 5-8, the CRT used in these monitors has the same magnet cofiguration as shown in Table 5-3 below.

Table 5-3 Magnet Configurations

CRT Manufacturer	Magnet Order from Front of CRT
Toshiba	Convergence bow, two-pole, four-pole, six-pole

Use the following steps to correct any static misconvergence:

1. Locate the pair of 4-pole magnet rings.
2. Unlock the rings and rotate the individual rings (change the spacing between tabs) to converge the vertical red and blue lines.
3. Rotate the pair of rings (maintaining the spacing between tabs) to converge the horizontal red and blue lines.
4. After completing the red and blue center convergence adjustment, locate the pair of 6-pole magnet rings.
5. Rotate the individual rings (change the spacing between tabs) to converge the vertical red and blue (magenta) and green lines.
6. Rotate the pair of rings (maintaining the spacing between tabs) to converge the horizontal red and blue (magenta) and green lines. Don't rotate the 2-pole magnets, as they adjust for color purity.
7. Mark the correct position for the magnets and apply a small line of glue to hold the magnets in place. Lock the rings in place.

5-4-2 Dynamic (Edge) Convergence

Use the following procedure to correct minor dynamic (edge) misconvergence. If, after using this procedure, dynamic misconvergence is still greater than the tolerance around the periphery of the display area, contact the Regional After Service Center for possible CRT replacement.

1. Make sure the display is not affected by external magnetic fields.

2. Make sure the static convergence is properly adjusted.

3. Strategically place small magnetic strips on the back of the CRT to correct the misconvergence. Be careful not to remove the paper protecting the adhesive on the magnetic strip until you are satisfied with their placement and the dynamic convergence.

4. When you are satisfied with the convergence around the edge of the CRT, permanently glue the magnets to the back of the CRT.

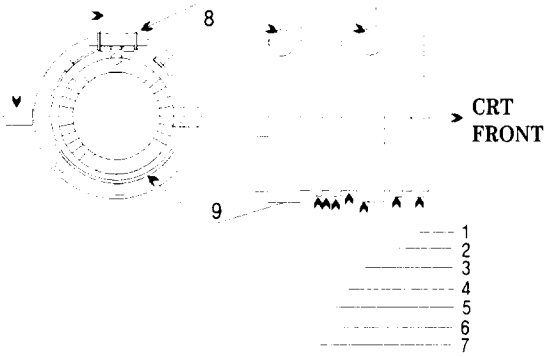


Fig. 5-8 Magnet Configuration

1 2 Pole
2 Bow Magnet
3 Locking
4 Spacer
5 6-Pole Magnet
6 Spacer
7 4-Pole Magnet
8 Set-up Bolt
9 Band
10 Tabs

Red, and Blue Alignment (4-Pole Magnet Movement)

V-line		H-line	
Beam Displacement	4-Pole magnet Displacement	Beam Displacement	4-Pole magnet Displacement
B → ← R		B / R	
R → ← B		R / B	
B / R		B ← → R	
R / B		R ← → B	

Red, Blue and Green Alignment (6-Pole Magnet Movement)

V-line		H-line	
Beam Displacement	4-Pole magnet Displacement	Beam Displacement	4-Pole magnet Displacement
M → G		M / G	
G ← M		G / M	
M / G		M → G	
G / M		G ← M	

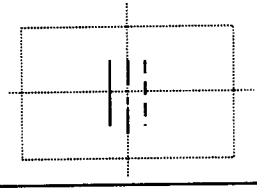
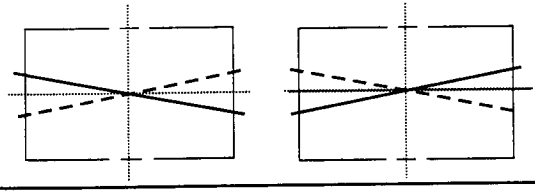
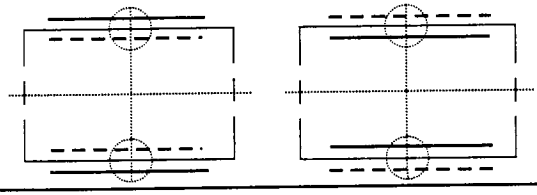
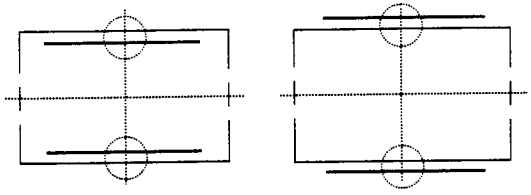
Fig. 5-9 Magnet Movements

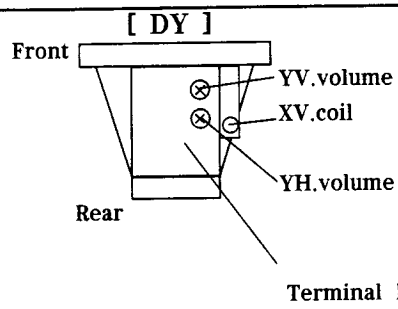
5-5 Balance Convergence Adjustments

CONDITIONS

Orientation : Monitor facing east
Display Image : Crosshatch pattern mixed with RGB colors.
Required Tools : + Screwdriver Hex Key

※ Red ——— Blue - - - - - - Green— - —

Marks	Mis-convergence pattern	Procedure/Remarks
Static Conv		· Re-checking of statc Conv Best adjustment →White(Zero) · By purity Conv. magnet (4 poles and 6 poles)
XV		· Positions→Right Side · Cross pattern of red and blue · Using XV.Coil→Clockwise or Anti-clockwise by core driver
Yv		· Positions→T.B · Plus or minus pattern of red and blue · Using YV.volume→Clockwise or Anti-clockwise by core driver
Y_H		· Positions→T.B · Plus or minus pattern of red/blue(M) and green · Using YH.volume→Clockwise or Anti-clockwise by core driver



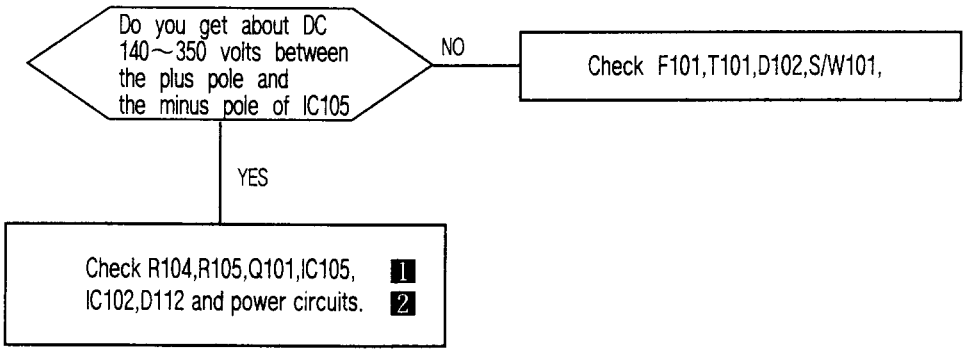
· The positions of adjustment coil and volumes (XV, YV, YH) on the terminal board are different depending on DY types.

6. Troubleshooting

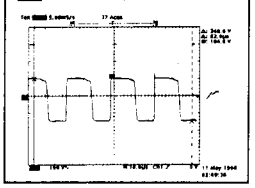
Notes : Check the following circuits.

- No raster appears: Power circuit, horizontal output circuit, High Voltage control circuit and High Voltage output circuit.
- High voltage develops but no raster appears: Video output circuits.
- High Voltage does not develop:High Voltage output circuits.

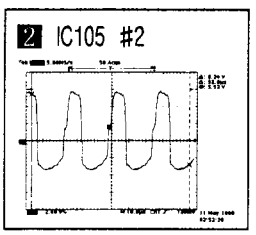
6-1 No Power



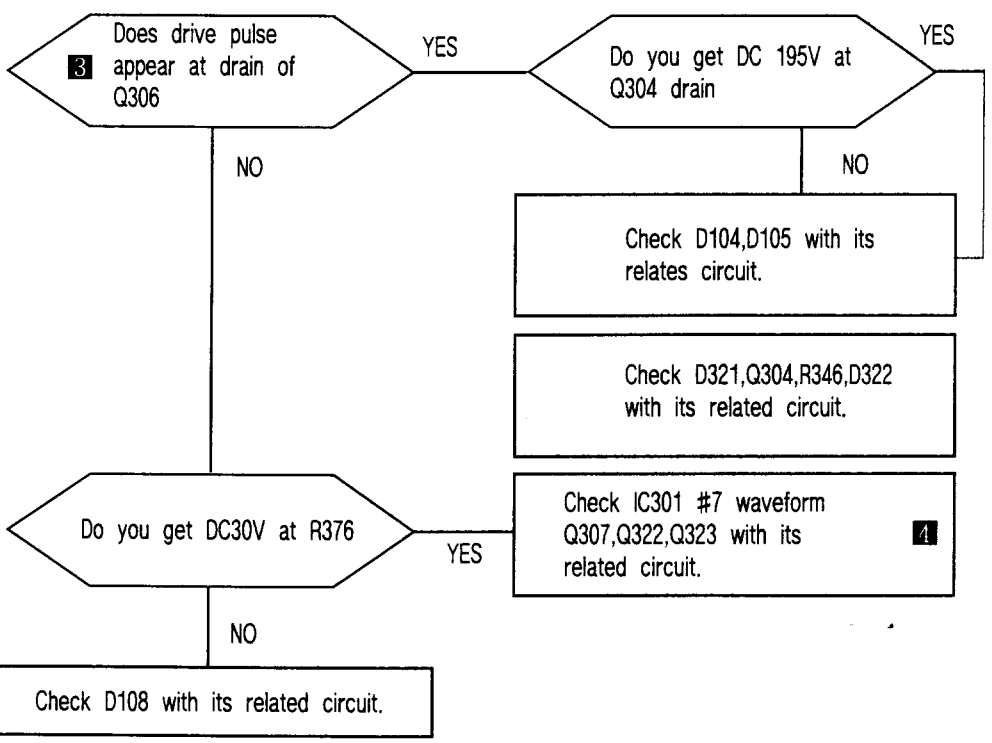
1 IC105 #3



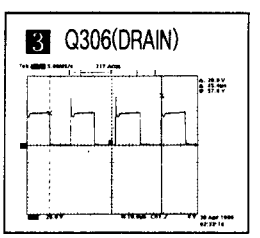
2 IC105 #2



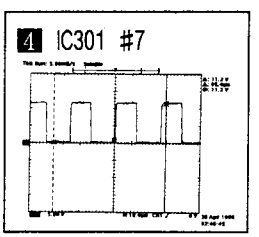
6-2 No Raster(1)



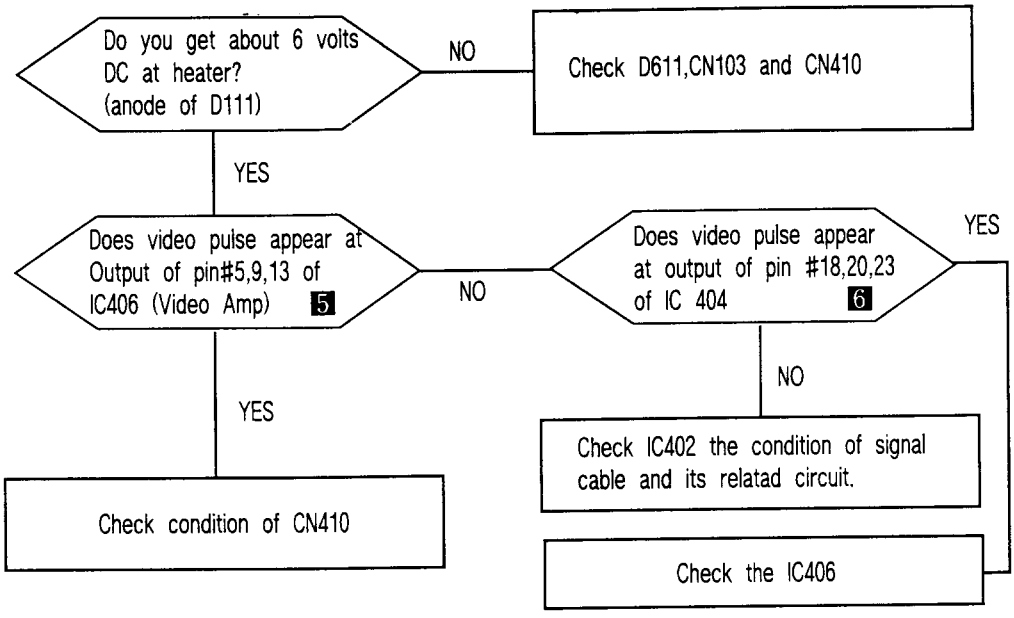
3 Q306(DRAIN)

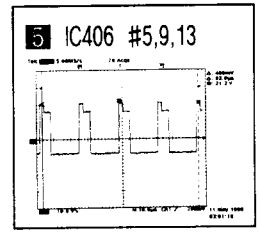


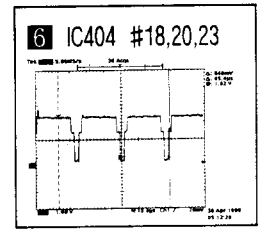
4 IC301 #7



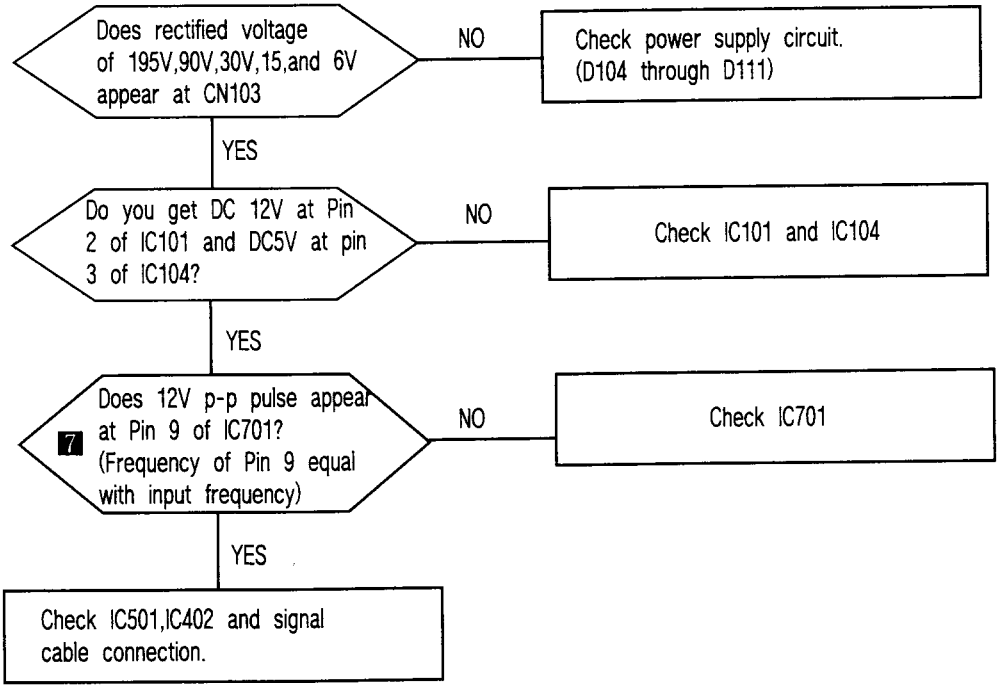
6-3 No Raster(2)

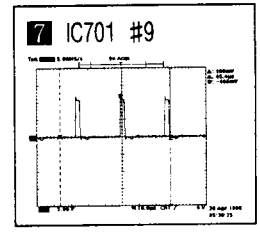




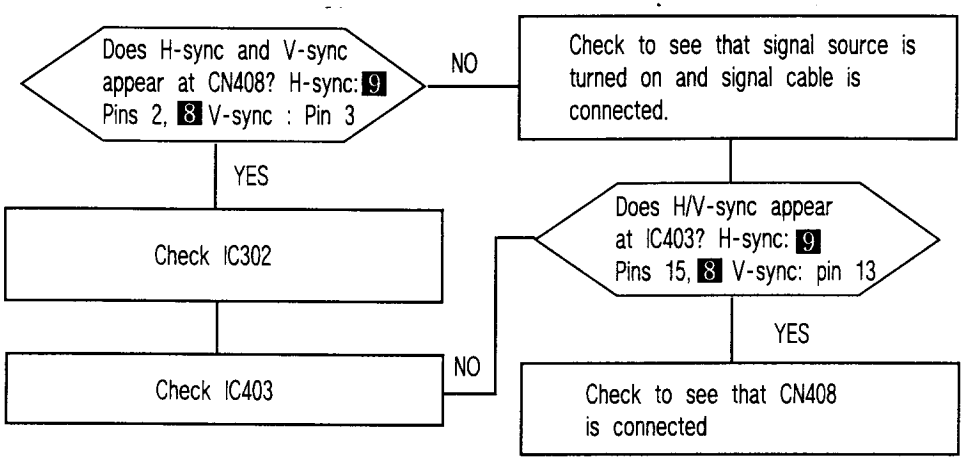


6-4 No Raster(3)

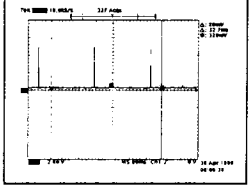




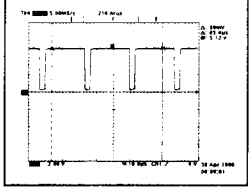
6-5 No Raster (4)



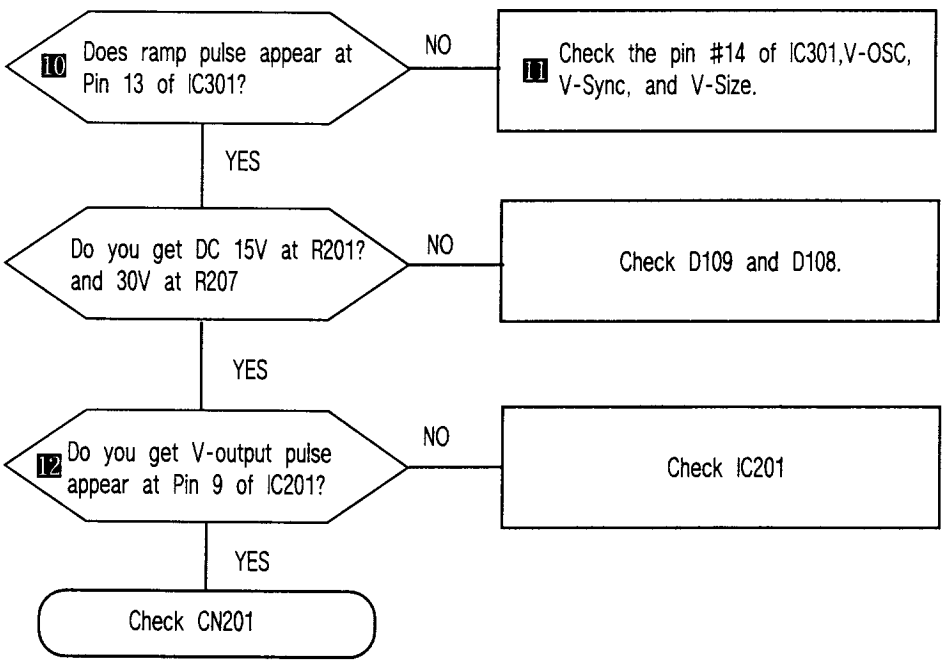
8 V-SYNC
#3 of CN408
#13 of IC403



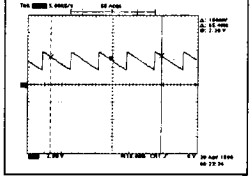
9 H-SYNC
#2 of CN408
#15 of IC403



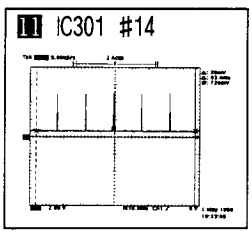
6-6 Horizontal Line On Raster



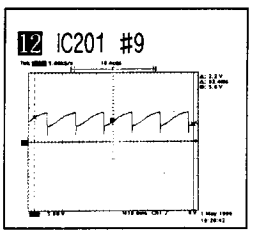
10 IC301 #13



11 IC301 #14



12 IC201 #9



6-7 Vertical Line On Raster

Does square wave form appear at drain of Q306

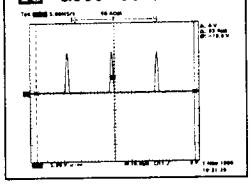
Check R350 and R376. and do you get about DC 30 volts at R376

13 Does collector pulse appear at collector of Q308

Check R331,Q304,R346

Check CN301 and its related circuit.

13 Q308 Collector



6-8 Raster Appears But Picture Does Not Show

Do you get 90V at Pin 3 of CN409

NO

Check the power supply circuits.

YES

14 Does video Pulse appear at Pind 5, 8 and 11 of IC404?

NO

Check the signal cable or video input circuit (IC402 and IC104)

YES

6 Does video pulse appear at pins 23,20 and 18 of IC404?

NO

Check the video pre-AMP circuits IC404

YES

5 Does video pules appear at pin 5,9 and 13 of IC406

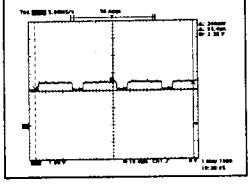
NO

Check the video output circuit.(IC406,HIC401)

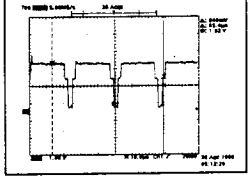
YES

Does video pulse appear at the CRT cathode and CRT

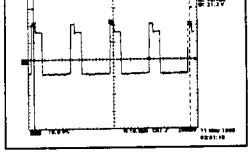
14 IC404 #5, 8, 11



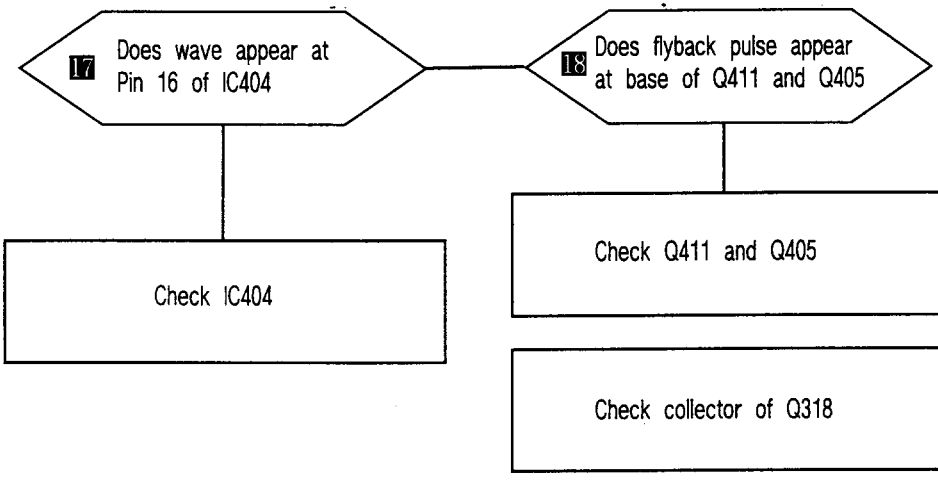
6 IC404 #23.20,18



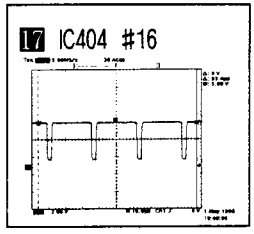
5 IC406 #5, 9, 13



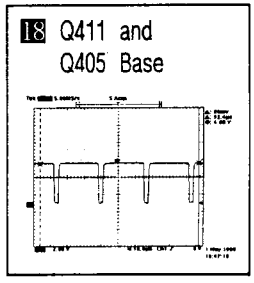
6-9 OSD Appear But OSD Does Not Blank



17 IC404 #16



18 Q411 and Q405 Base



6-10 No S-Correction Value Each Mode

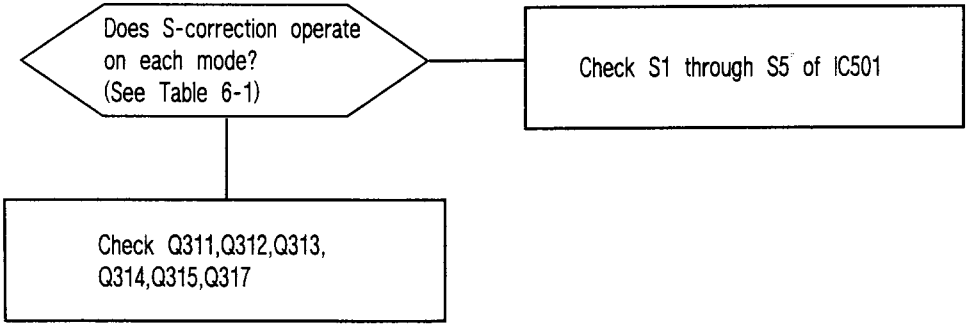


Table 6-1

	30K~36.4K	36.5K~41.9K	42K~51.9K	52K~61.9K	62K~71.9K	72K~OVER
S1	H	H	H	H	H	L
S2	H	H	H	H	L	L
S3	H	H	H	H	L	L
S4	H	H	L	L	L	L
S5	H	L	L	L	L	L
S6	L	L	L	L	L	H

6-11 No Specific Color Appears

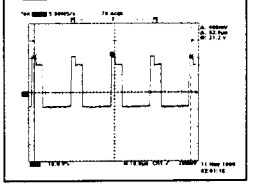
The raster is red or cyan.

5 Check the video pulse at pin 5 of the IC406

The raster is green magenta

5 Check the video pulse at pin 9 of the IV406

5 IC406 #5, 9, 13



The raster is blue or yellow

5 Check the video pulse at pin 13 of the IC406

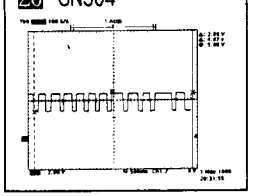
6-12 Function Key Doesn't Operate

Does the signal wave of 20 CN504 appear when you press the function button?

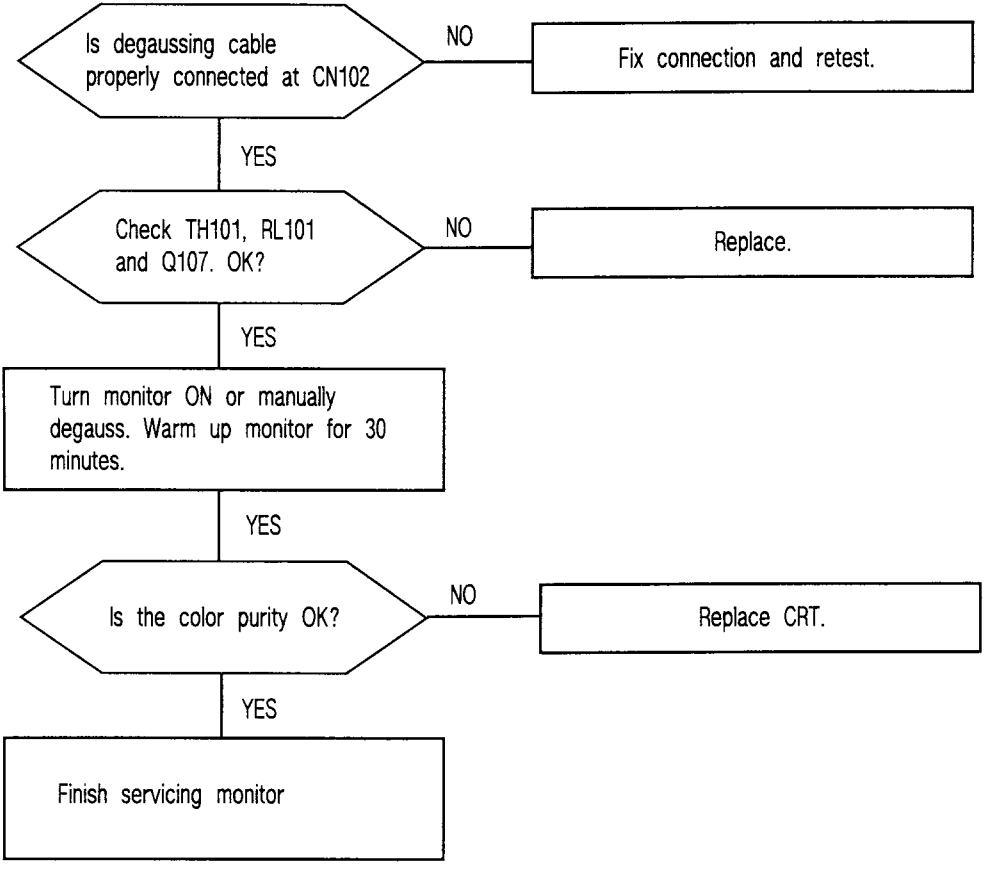
NO → Replace CN504

YES → Check tact switch IC501

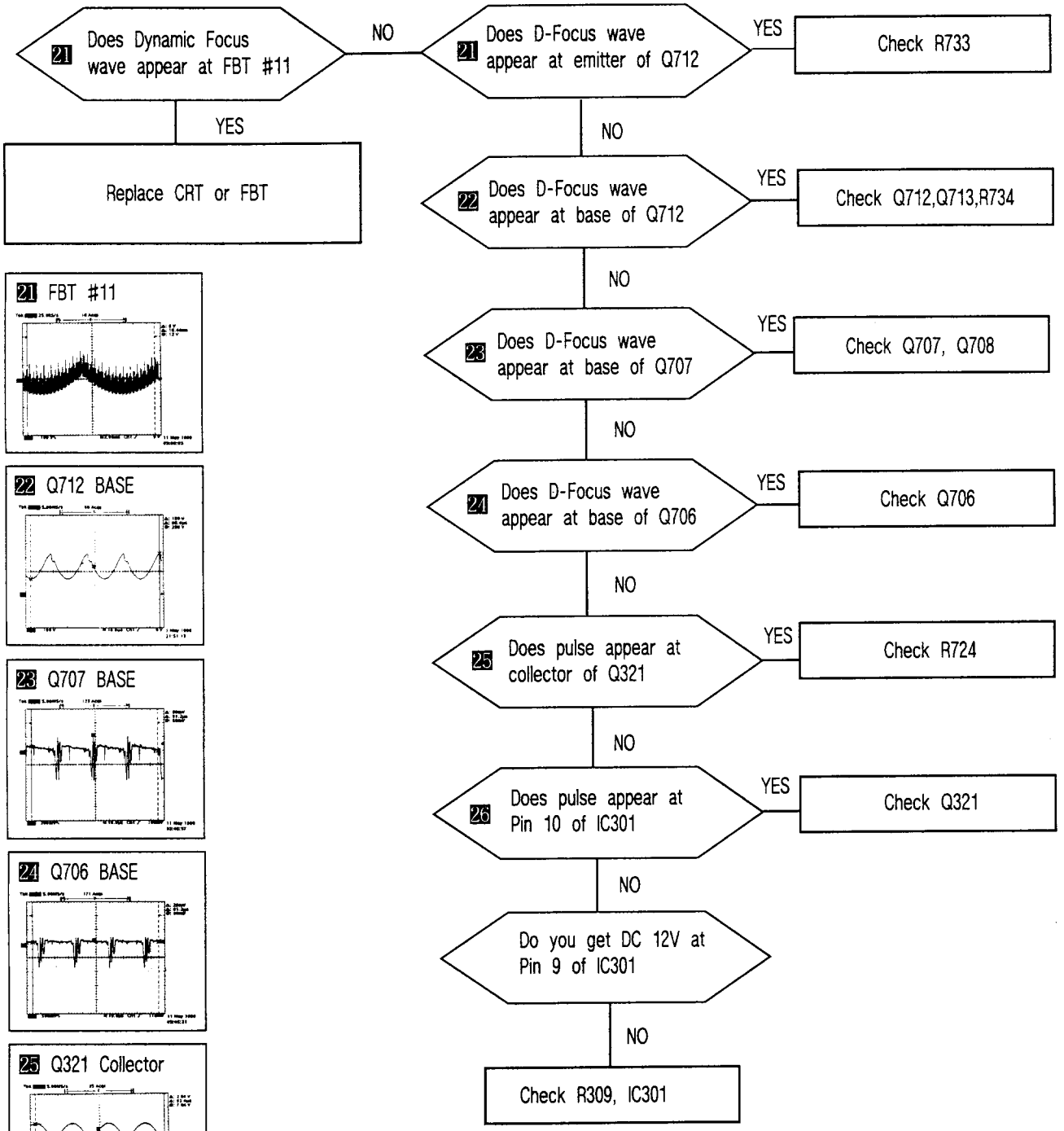
20 CN504



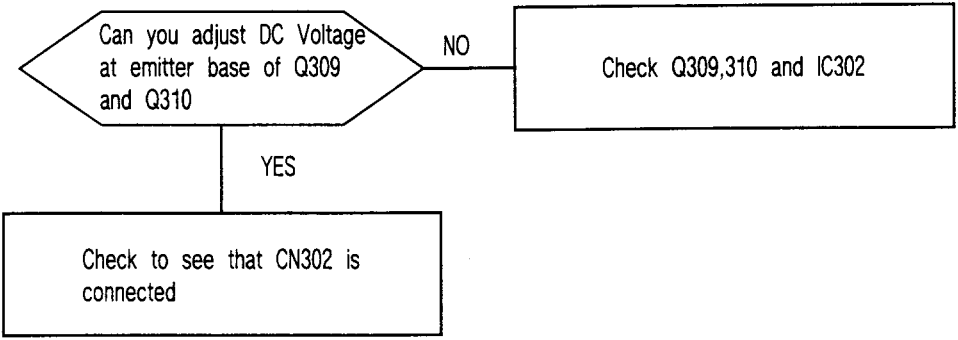
6-13 Color Purity Failure

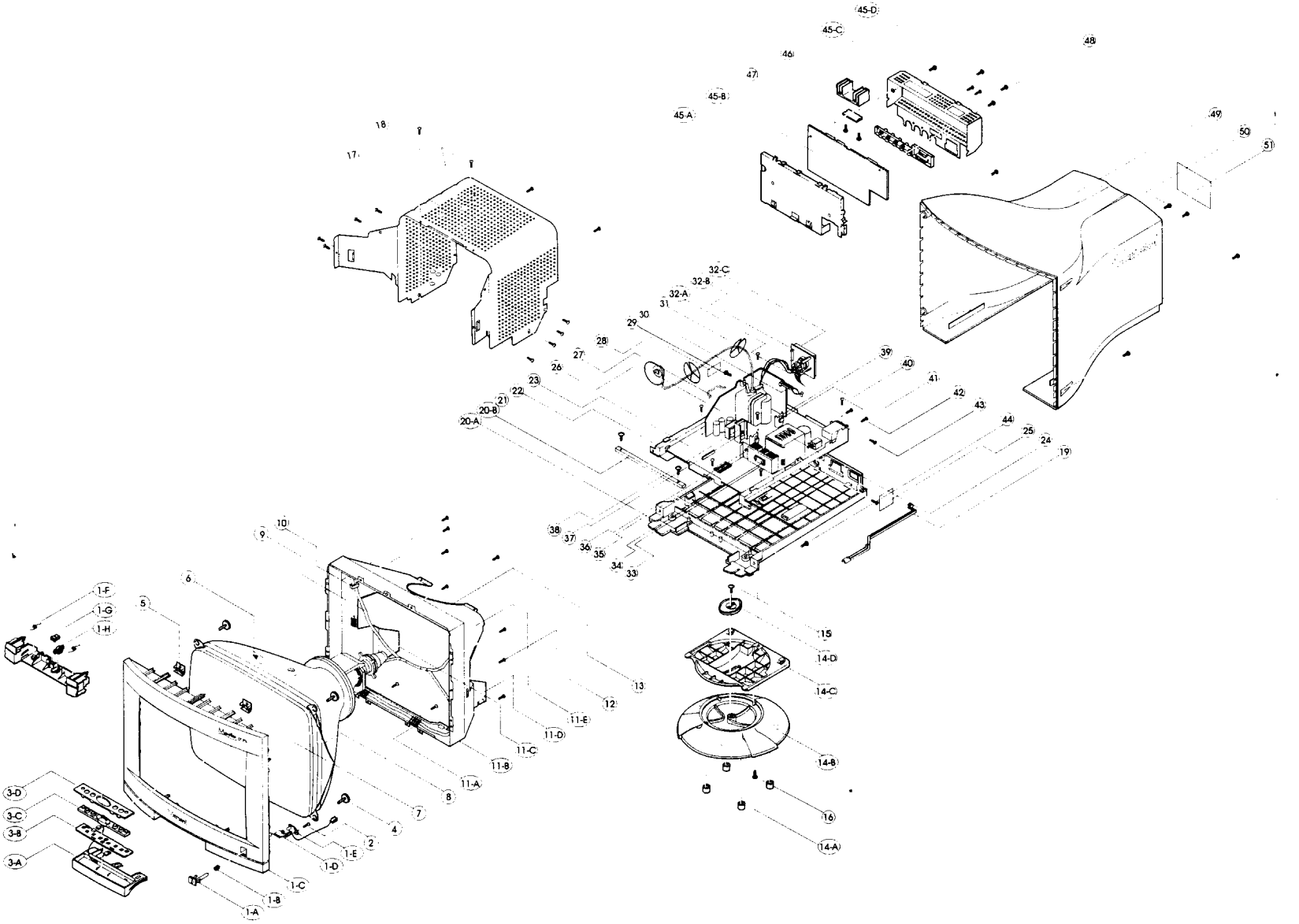


6-14 Double Focus(1)



6-15 Rotation Does not Operate




45-D
45-C
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45-B
45-A
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32-C
32-B
32-A
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20-B
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14-D
14-C
14-B
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14-A
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11-E
11-D
11-C
11-B
11-A
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7
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1-F
1-G
1-H
3-D
3-C
3-B
3-A
1-E
1-D
1-C
1-B
1-A

No.	Description	Code No.	Specification	Q'TY	Remarks
1	ASS'Y-FRONT BEZEL	09214262		1	
1-A	POWER KNOB	62214208AA	VE0856, C7425	1	
1-B	POWER KNOB SPRING	75210001AA	SUS304 0.5 ϕ	1	
1-C	FRONT BEZEL	62214201AA	VE0856, C7425	1	
1-D	LED LAMP	62214210AA	PC(CLEAR)	1	
1-E	PCB, LED			1	
1-F	DOOR SPRING	75110001AA	SUS304 0.65 ϕ	2	
1-G	PUSH LATCH	65214201AA	LA701-6	1	
1-H	DAMPER	65214202AA	DP802	1	
2	TAPPING, BH 3×8	69672001AA		1	
3	ASS'Y-CONTROL BOX	05214203		1	
3-A	CONTROL REAR	62214207AA	VE0856, C7425	1	
3-B	PCB, FRONT	39214203AA		1	
3-C	KEY PAD	62214222AA	SILICON RUBBER	1	
3-D	CONTROL FRONT	62214206AA	VE0856, C7425	1	
4	TAPPING, TH 5X25	69572001AA	WASHER+RUBBER	4	
5	CRT GTOUND TOP	63214210AA	PBSS	2	
6	WARNING LABEL (C)			1	
7	17" COLOR CRT	38250001	M41LDL27XX04, TOSHIBA	1	
8	CRT GND BRAID WIRE	49210007AA		2	
9	ASS'Y D-COIL	34219001		1	
10	WIRE SADDLE	65214205AA	DAWS-1N-1	2	
11	ASS'Y-CRT CHASSIS	09214261		1	
11-A	CRT GROUND	63214211AA	PBSS	4	
11-B	CRT CHASSIS (B)	63214202AA	EGI	1	
11-C	SIDE PLATE (R)	63214208AA	EGI	1	
11-D	SIDE PLATE (L)	63214209AA	EGI	1	
11-E	CRT CHASSIS (A)	63214203AA	EGI	1	
12	TAPPING, TH 4×15	69572002AA		10	
13	COVER BUSHING	65214206AA	DACB-08	4/3	
14	ASS'Y-STAND	09214264		1	
14-A	FOOT RUBBER	62214221AA	P.V.C RUBBER	4	
14-B	STAND BASE	62214203AA	VE0856, C7425	1	
14-C	STAND NECK	62214204AA	VE0856, C7425	1	
14-D	STAND HOLDER	62214211AA	ACETAL	1	
15	TAPPING, TH 4×15	69572002AA		1	
16	TAPPING, TH 4×15	69572002AA		1	
17	REAR CHASSIS	63214204AA	AL	1	
18	TAPPING, BH3×8	69672001AA		12	
19	POWER LINK	62214209AA	VE0856, C7425	1	

No.
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20-A
20-B
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32-A
32-B
32-C
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45-A
45-B
45-C
45-D
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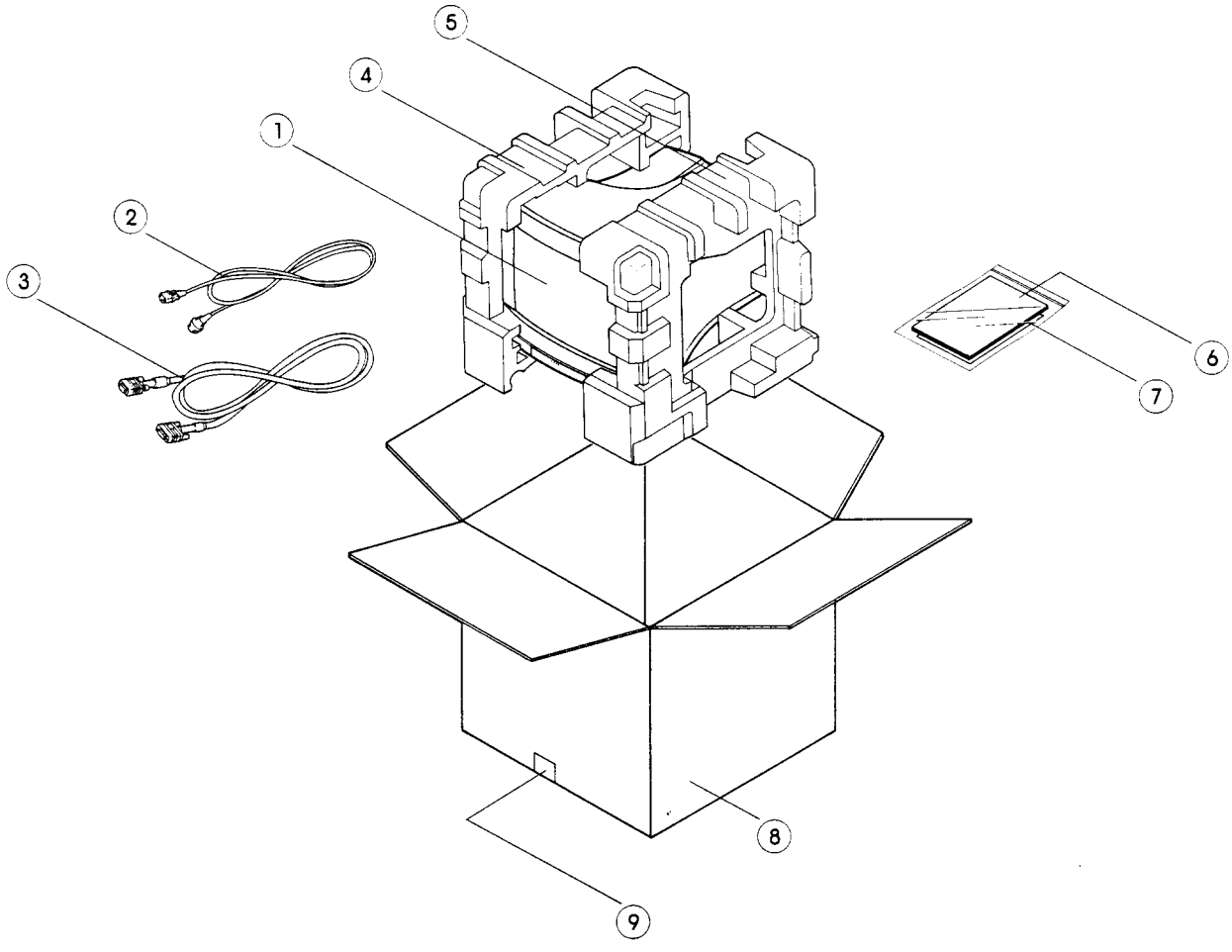
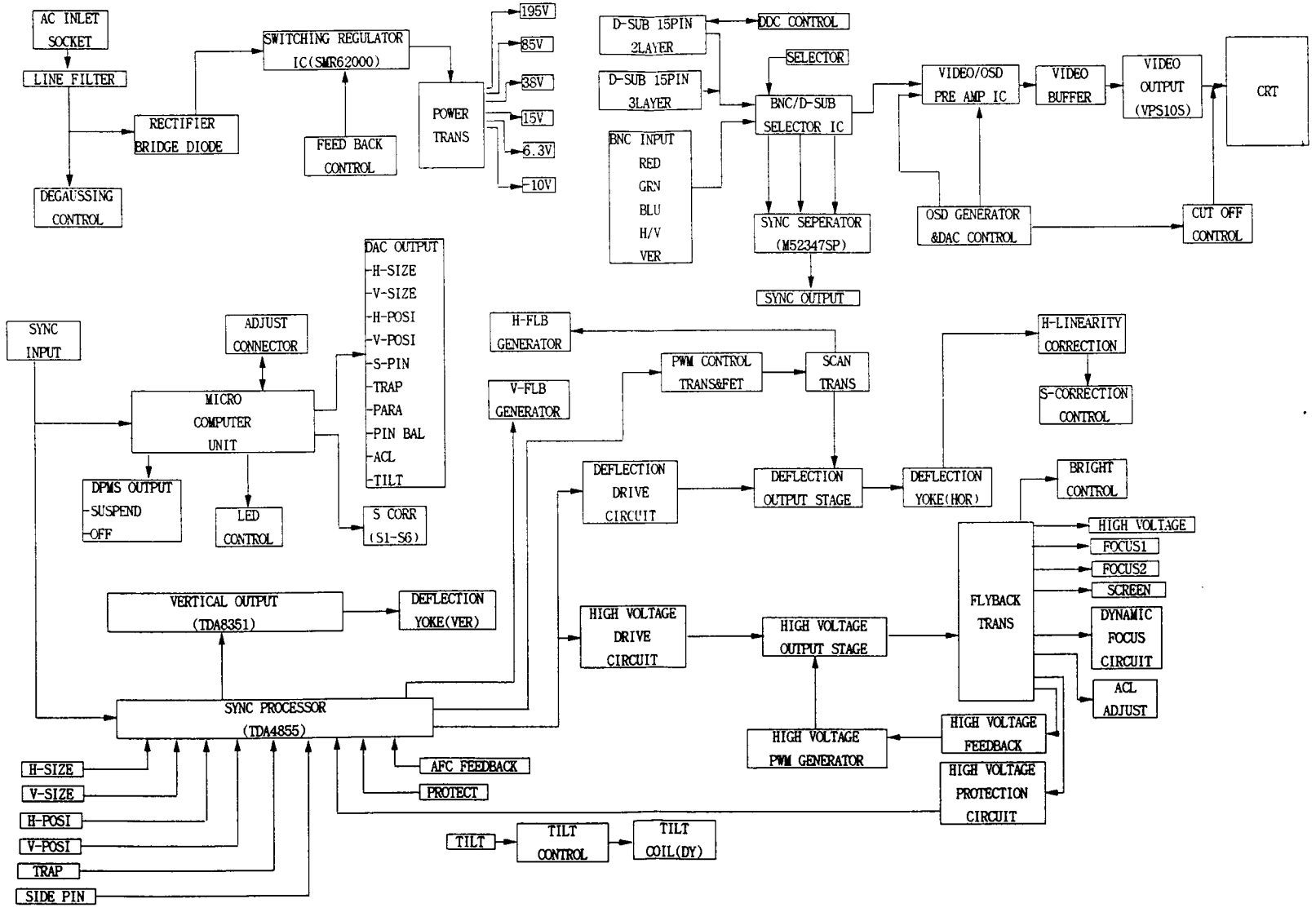
No.	Description	Code No.	Specification	Q'TY	Remarks
20	ASS'Y-BOTTOM BASE	09214263		1	
20-A	BOTTOM COVER	62214205AA	VE0856, C7425	1	
20-B	SUPPORT BRACKET	63214213AA	EGI	1	
21	TAPPING, TH 4×15	69572002AA		2	
22	BOTTOM CHASSIS	63214201AA	EGI	1	
23	PCB, MAIN	39214201AA	330×247×1.6t	1	
24	HEAT SINK-SMPS	64219002AA	AL	1	
25	WARNING LABEL (A)	92211405AA		1	
26	HEAT SINK-FBT	64219001AA	AL	1	
27	SPRING (CLIP)	75410001AA	SUS304	4	
28	WARNING LABEL (B)	92211406AA		1	
29	TAPPING, TH 4×15	69572002AA		1	
30	TWIST LOCK STANDOFF	65214204AA	DASTL-12NB	1	
31	FING INSULATOR	65214203AA	DARI-4151	2	
32	ASS'Y-SOCKET COVER	09214265		1	
32-A	SOCKET GROUND	63214214AA	PBSS	1	
32-B	PCB, SOCKET	39214204AA	60×70×1.6t	1	
32-C	SOCKET SHIELD CASE	63214212AA	SPTE	1	
33	HEAT SINK	64219005AA	AL	1	
34	MACHINE, BH 3×10 W/W			2	
35	HEAT SINK	64219007AA	CRS (25×49)	1	
36	TAPPING, BH 3×8	69672001AA		1	
37	MACHINE, BH 3×10			1	
38	HEAT SINK	64219004AA	AL (23.5×15×45)	1	
39	HEAT SINK	64219003AA	CRS (20×34)	2	
40	TAPPING, BH 3×8	69672001AA		2	
41	TAPPING, BH 3×8	69672001AA		8	
42	TAPPING, FH 3×8	69272001AA		2	
43	TAPPING, BH 3×8	69672001AA		4	
44	TAPPING, TH 3×8	69572002AA		2	
45	ASS'Y-VIDEO	05214202		1	
45-A	VIDEO CASE BOTTOM	63214207AA	EGI	1	
45-B	PCB, VIDEO	39214202AA	247×120×1.6t	1	
45-C	BNC CASE	63214205AA	SPTE	1	
45-D	VIDEO CASE	63214206AA	AL	1	
46	HEAT SINK-VIDEO	64219006AA	AL (68×25×31)	1	
47	MACHINE, BH 3×10 W/W			2	
48	TAPPONG, BH 3×8	69672001AA		6	
49	REAR HOUSING	62214202AA	VE0856, C7425	1	
50	TAPPING, TH 4×15, WHITE	69572002AA	WHITE	6	
51	PRODUCT LABEL	92211401AA		1	

8. Packing & Unpacking

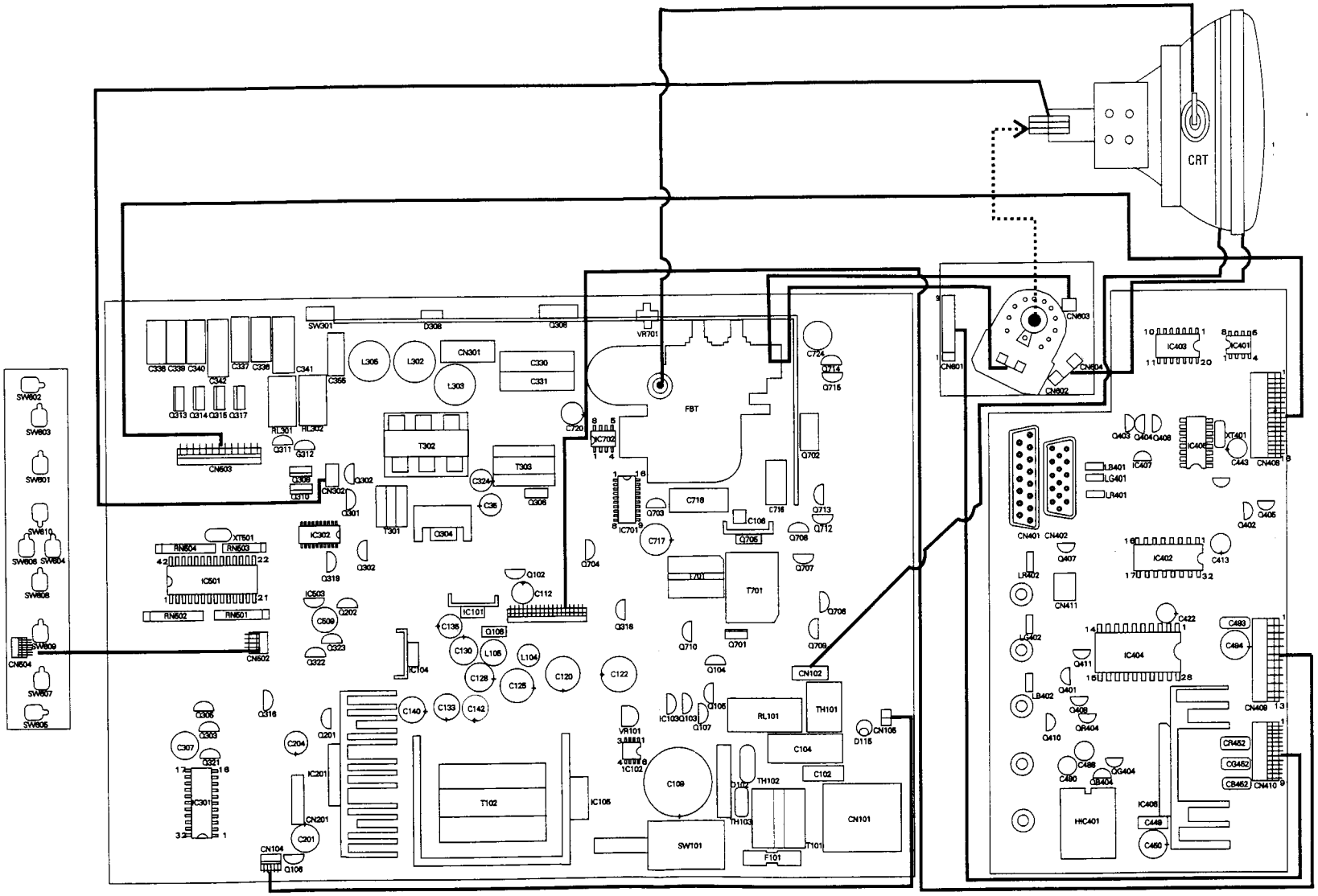


No.	Description	Code No.	Specification	Q'TY	Remarks
1	MONITOR UNIT			1	
2	POWER CORD			1	
3	SIGNAL CABLE			1	
4	CUSHION 'L'	93211344AA	EPS	1	
5	CUSHION 'R'	93211345AA	EPS	1	
6	USER'S MANUAL	94214202AA	PAPER	1	
7	WARRANTY CARD	94214206AA	PAPER	1	
8	CARTON BOX	93211242AA	DW-3	1	
9	MASKING TAPE			1	

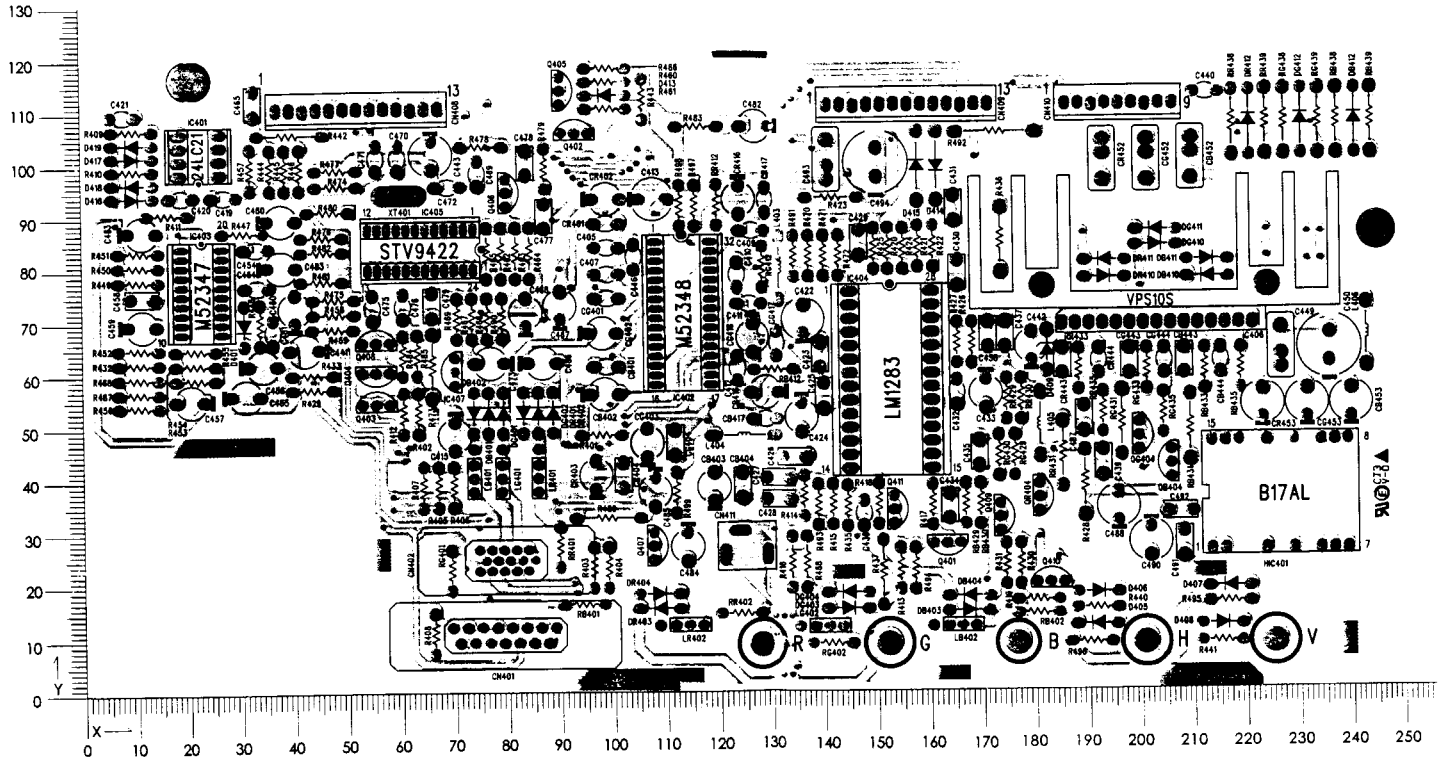
9. Block Diagram



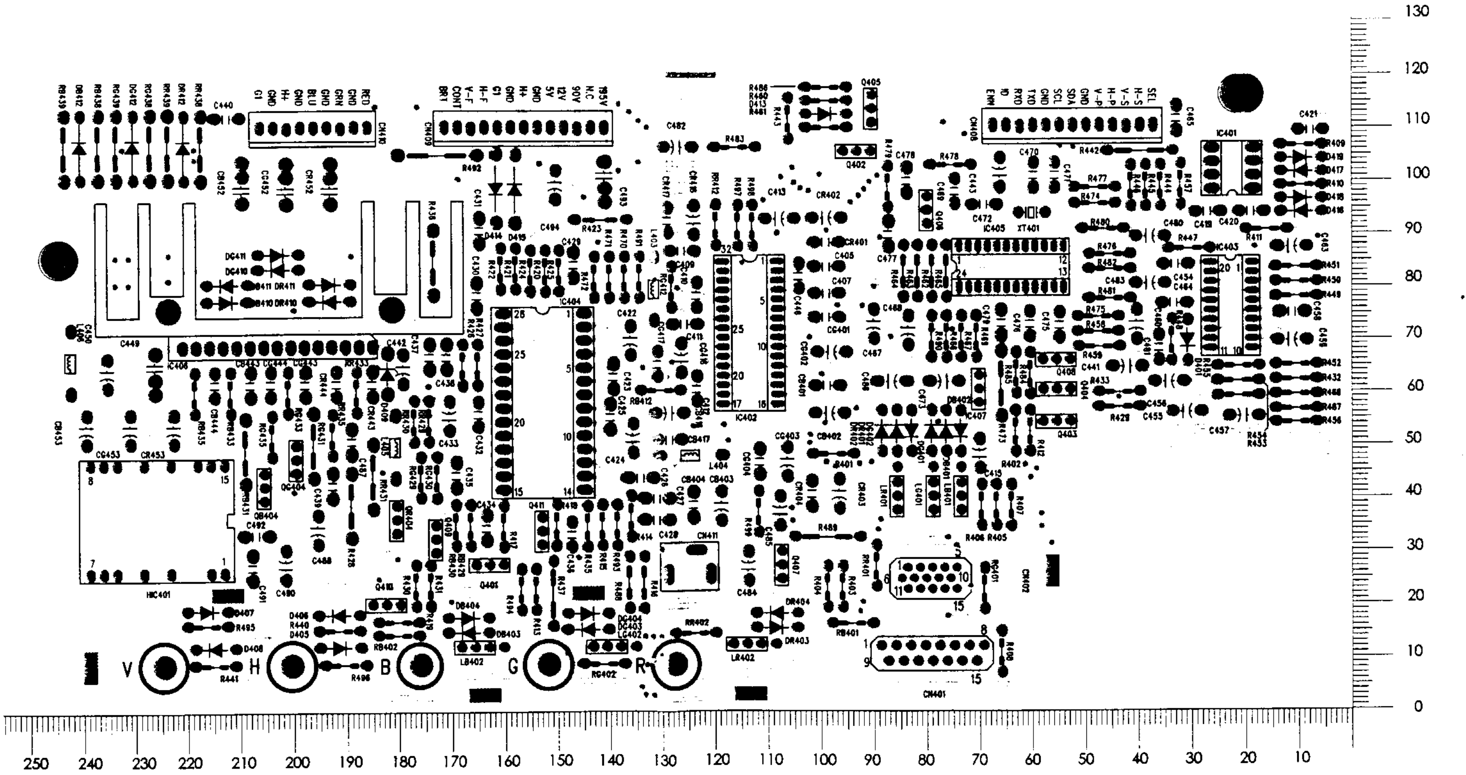
10. Wiring Diagram



11-2-1 Top View



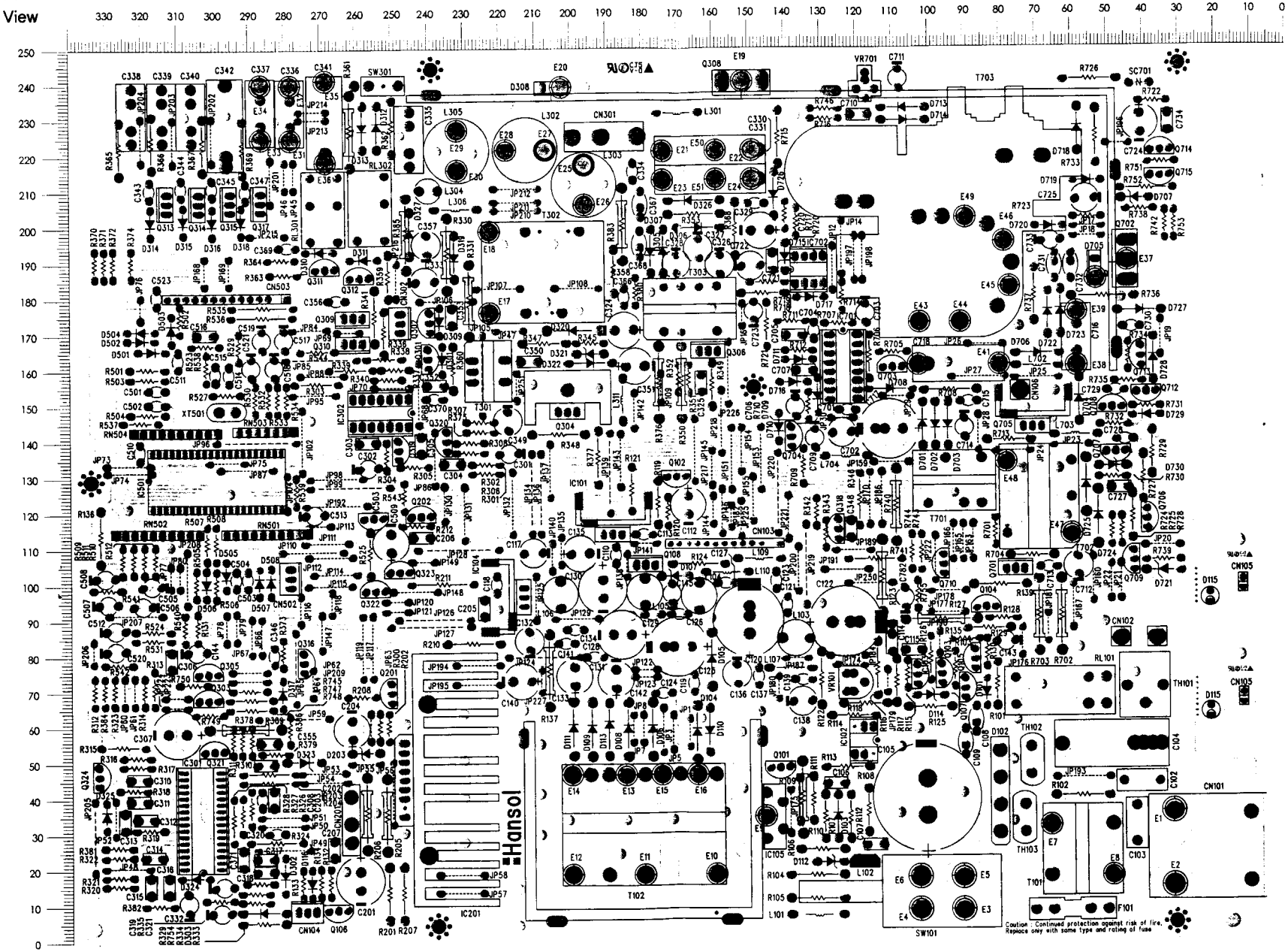
11-2-2 Bottom View



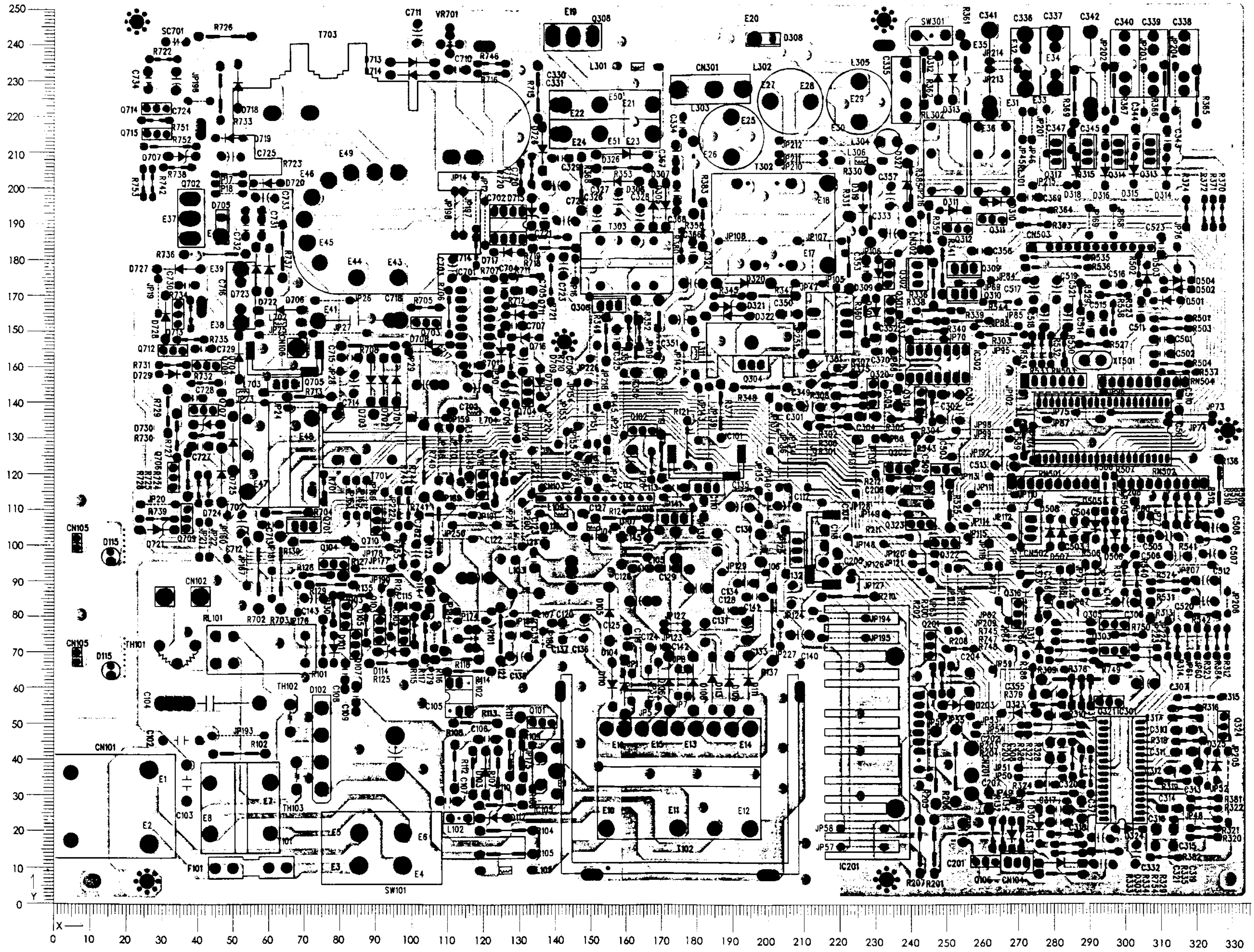
11. PCB Layout

11-1 Main PCB

11-1-1 Top View

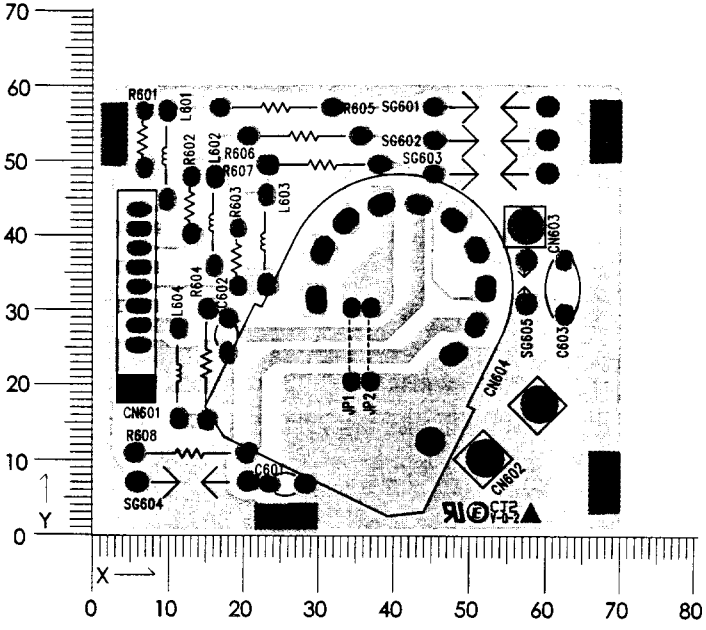


11-1-2 Bottom View

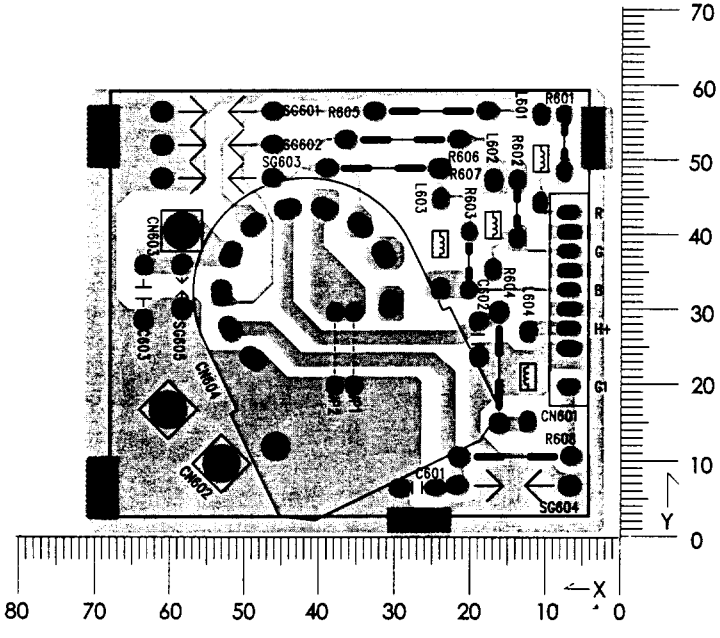


11-3 CRT PCB

11-3-1 Top View

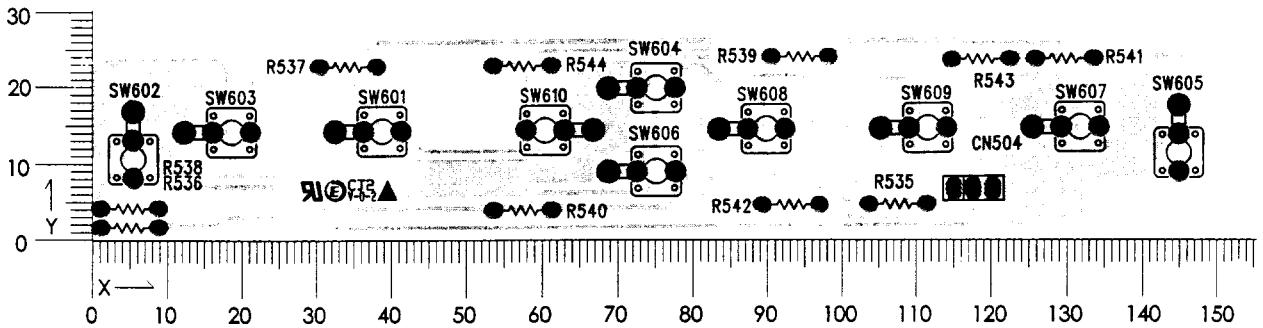


11-3-2 Bottom View

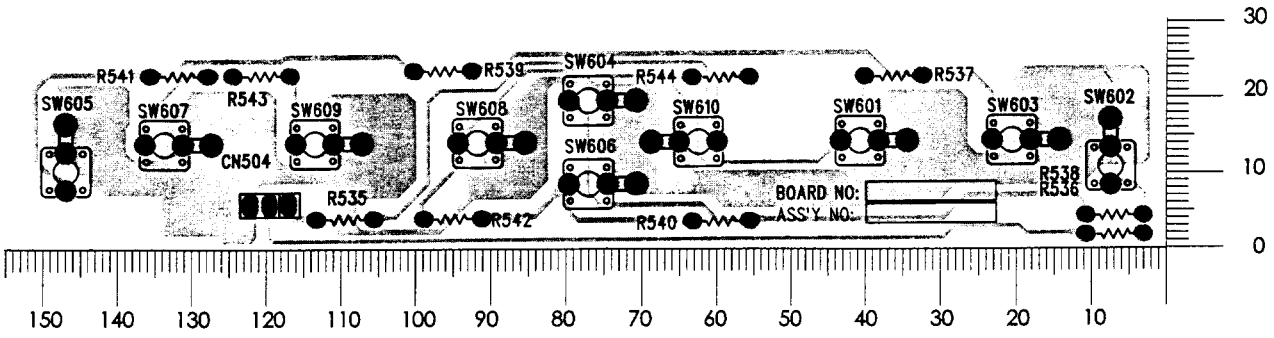


11-4 Control PCB

11-4-1 Top Viewlectricity.



11-4-2 Bottom View



11-5 Electrical Parts List

Loc No.	Code No.	Type	Description	Remarks
C102	23580472FACH	CAP,METALZ-POLYESTER	4700PF,10%,250VAC,RB	
C103	23580472FACH	CAP,METALZ-POLYESTER	4700PF,10%,250VAC,RB	
C104	23580474FACH	CAP,METALZ-POLYESTER	0.47UF,10%,250VAC,RB	
C105	27750337JCAH	CAP,AL-ELECT	330UF,20%,400V,-40/85℃,PT	
C106	23160392B9CH	CAP,IND-POLYESTER	0.0039UF,10%,100V,RT,CQ92MT	
C107	23160152B9CH	CAP,IND-POLYESTER	1500PF,5%,100V,RT	
C108	26370472JAEH	CAP,DISC CERAMIC,CK-45	4700PF,10%,400V,-25/85℃,RT	
C109	26370472JAEH	CAP,DISC CERAMIC,CK-45	4700PF,10%,400V,-25/85℃,RT	
C110	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C112	277502273CAH	CAP,AL-ELECT,GP	220UF,20%,16V,-40/85℃,RT	
C113	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃C,RT	
C114	23560224F9CH	CAP,METALZ-POLYESTER	0.22UF,5%,250V,RT	
C115	23160103BACH	CAP,IND-POLYESTER	0.01UF,10%,100V,RT,CQ92MT	
C117	277501073CAH	CAP,AL-ELECT,GP	100UF,20%,16V,-40/85℃,RT,SMALL	
C118	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C119	26370101MAEH	CAP,DISC CERAMIC,CK-45	100PF,10%,500V,-25/85℃,RT,HDC	
C120	27750476FCAH	CAP,AL-ELECT,GP	47UF,20%,250V,-40/85℃,RT	
C121	26370103MAEH	CAP,DISC CERAMIC,CK	0.01UF,-20/80%,500V,-25/85℃,RT	
C122	27750476FCAH	CAP,AL-ELECT,GP	47UF,20%,250V,-40/85℃,RT	
C123	26370103MAEH	CAP,DISC CERAMIC,CK	0.01UF,-20/80%,500V,-25/85℃,RT	
C124	26370271M9EH	CAP,DISC CERAMIC,CK-45	270PF,5%,500V,-25/85℃,RT,HDC	
C125	27750227BCAH	CAP,AL-ELECT,GP	220UF,20%,100V,-40/85℃,RT	
C126	26370103MAEH	CAP,DISC CERAMIC,CK	0.01UF,-20/80%,500V,-25/85℃,RT	
C127	26370103MAEH	CAP,DISC CERAMIC,CK	0.01UF,-20/80%,500V,-25/85℃,RT	
C128	277504778CAH	CAP,AL-ELECT,GP	470UF,20%,50V,-40/85℃,RT	
C129	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C130	277504778CAH	CAP,AL-ELECT,GP	470UF,20%,50V,-40/85℃,RT	
C131	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C132	277402273CAH	CAP,AL-ELECT,GP	220UF,20%,16%,-55/105℃,RT	
C133	277504775CAH	CAP,AL-ELECT,GP	470UF,20%,25V,-40/85℃,RT	
C134	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C135	277502275CAH	CAP,AL-ELECT,GP	220UF,20%,25V,-40/85℃,RT	
C136	277501073CAH	CAP,AL-ELECT,GP	100UF,20%,16V,-40/85℃,RT,SMALL	
C137	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C138	277504763CAH	CAP,AL-ELECT,GP	47UF,20%,16V,-40/85℃,RT	
C139	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C140	277404775CAH	CAP,AL-ELECT,GP	470UF,20%,25V,-55/105℃,RT	
C141	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C142	277502275CAH	CAP,AL-ELECT,GP	220UF,20%,25V,-40/85℃,RT	
C143	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C145	277504763CAH	CAP,AL-ELECT,GP	47UF,20%,16V,-40/85℃,RT	
C201	277501085CAH	CAP,AL-ELECT,GP	1000UF,20%,25V,-40/85℃,RT	
C202	23160222B9CH	CAP,IND-POLYESTER	2200PF,5%,100V,RT	
C203	23160222B9CH	CAP,IND-POLYESTER	2200PF,5%,100V,RT	
C204	277504778CAH	CAP,AL-ELECT,GP	470UF,20%,50V,-40/85℃,RT	
C205	23560224BACH	CAP,METALZ-POLYESTER	0.22UF,10%,100V,RT	
C206	23160103BACH	CAP,IND-POLYESTER	0.01UF,10%,100V,RT,CQ92MT	
C207	23160102BACH	CAP,IND-POLYESTER	0.001UF,10%,100V,RT	
C301	277504758CAH	CAP,AL-ELECT,GP	4.7UF,20%,50V,-40/85℃,RT	
C302	277501058CAH	CAP,AL-ELECT,GP	1UF,20%,50V,-40/85℃,RT	
C303	23560104BACH	CAP,METALZ-POLYESTER	0.1UF,10%,100V,RT	

Loc No.	Code No.	Type	Description	Remarks
C304	235601059ACH	CAP,METALZ-POLYESTER	1UF,10%,63V,RT	
C305	23560104BACH	CAP,METALZ-POLYESTER	0.1UF,10%,100V,RT	
C306	235601059ACH	CAP,METALZ-POLYESTER	1UF,10%,63V,RT	
C307	277501083CAH	CAP,AL-ELECT,GP	1000UF,20%,16V,-40/85℃,RT	
C308	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C309	2631010389EH	CAP,DISC CERAMIC,CC	0.01UF,5%,50V,-25/85℃,RT	
C310	23560224BACH	CAP,METALZ-POLYESTER	0.22UF,10%,100V,RT	
C311	23560104BACH	CAP,MP,5%,RT	0.1UF,5%,100V	
C312	23160152B9CH	CAP,IND-POLYESTER	1500PF,5%,100V,RT	
C313	23160683BACH	CAP,IND-POLYESTER	0.068UF,10%,100V,RT	
C314	23560103B9CH	CAP,MP,5%,RT	0.01UF,5%,100V	
C315	23160103BACH	CAP,IND-POLYESTER	0.1UF,5%,100V,RT	
C316	23560222B9CH	CAP,MP,5%,RT	0.0022UF,5%,100V	
C317	23160222B9CH	CAP,IND-POLYESTER	2200PF,5%,100V,RT	
C318	23160223BACH	CAP,IND-POLYESTER	0.022UF,10%,100V,RT	
C319	277504758CAH	CAP,AL-ELECT,GP	4.7UF,20%,50V,-40/85℃,RT	
C320	26370102JCEH	CAP,DISC CERAMIC,CC-45	1000PF,20%,400VAC,-25/85℃,RT	
C321	277501058CAH	CAP,AL-ELECT,GP	1UF,20%,50V,-40/85℃,RT	
C322	277501058CAH	CAP,AL-ELECT,GP	1UF,20%,50V,-40/85℃,RT	
C324	277501078CAH	CAP,AL-ELECT,GP	100UF,20%,50V,-40/85℃,RT	
C325	23160102BACH	CAP,IND-POLYESTER	0.001UF,10%,100V,RT	
C326	277503368CAH	CAP,AL-ELECT,GP	33 UF,20%,50V,-40/85℃,RT	
C327	277503368CAH	CAP,AL-ELECT,GP	33 UF,20%,50V,-40/85℃,RT	
C328	277503368CAH	CAP,AL-ELECT,GP	33 UF,20%,50V,-40/85℃,RT	
C329	26370222JCEH	CAP,DISC CERAMIC,CK	2200PF,20%,400VAC,-25/85℃,RT	
C330	23560252R9CH	CAP,PP,HIGH-VOL	2500PF,5%,2KV,RT	
C331	23560222R9CH	CAP,MP,HIGH-VOL	2200PF,5%,2KV	
C332	277504758CAH	CAP,AL-ELECT,GP	4.7UF,20%,50V,-40/85℃,RT	
C333	27750105FCAH	CAP,AL-ELECT,GP	1 UF,20%,250V,-40/85℃,RT	
C334	26370102PAEH	CAP,DISC CERAMIC,CK	1000PF,10%,1KV,-25/85℃,RT	
C335	23560103NACH	CAP,MP	0.01UF,630V,MP	
C336	23660104J9CH	CAP,METALZ-PP	0.1UF,5%,400V,RT	
C337	23660104J9CH	CAP,METALZ-PP	0.1UF,5%,400V,RT	
C338	23660154FACH	CAP,METALZ-PP	0.15UF,5%,250V,RT	
C339	23660124F9CH	CAP,METALZ-PP	0.12UF,5%,250V,RT	
C340	23660184FACH	CAP,METALZ-PP	0.18UF,5%,250V,RT	
C341	23660564FACH	CAP,METALZ-PP	0.56UF,5%,250V,RT	
C342	23660474FACH	CAP,METALZ-PP	0.47UF,5%,250V,RT	
C343	2631010389EH	CAP,DISC CERAMIC,CC	0.01UF,5%,50V,-25/85℃,RT	
C344	2631010389EH	CAP,DISC CERAMIC,CC	0.01UF,5%,50V,-25/85℃,RT	
C345	2631010389EH	CAP,DISC CERAMIC,CC	0.01UF,5%,50V,-25/85℃,RT	
C346	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C347	2631010389EH	CAP,DISC CERAMIC,CC	0.01UF,5%,50V,-25/85℃,RT	
C348	23160102B9CH	CAP,IND-POLYESTER	1000PF,5%,100V,RT	
C349	277401073CAH	CAP,AL-ELECT,GP	100UF,20%,16V,-55/105℃,RT	
C350	23560104BACH	CAP,METALZ-POLYESTER	0.1UF,10%,100V,RT	
C351	27740105FCAH	CAP,AL-ELECT,GP(6.3*11)	1UF,20%,250V,-40/105℃,RT	
C352	23560104BACH	CAP,METALZ-POLYESTER	0.1UF,10%,100V,RT	
C353	23560104BACH	CAP,METALZ-POLYESTER	0.1UF,10%,100V,RT	
C355	23160103BACH	CAP,IND-POLYESTER	0.01UF,10%,100V,RT,CQ92MT	
C356	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C357	27750105FCAH	CAP,AL-ELECT,GP	1 UF,20%,250V,-40/85℃,RT	

Loc No.	Code No.	Type	Description	Remarks
C366	23160152B9CH	CAP,IND-POLYESTER	1500PF,5%,100V,RT	
C367	26370101QAEH	CAP,DISC CERAMIC,CK	100PF,10%,2KV,-25/85℃,RT	
C368	26370102PAEH	CAP,DISC CERAMIC,CK	1000PF,10%,1KV,-25/85℃,RT	
C369	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C370	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C371	23160102BACH	CAP,IND-POLYESTER	0.001UF,10%,100V,RT	
C401B	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C401G	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C401R	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C402B	277504763CAH	CAP,AL-ELECT,GP	47UF,20%,16V,-40/85℃,RT	
C402G	277504763CAH	CAP,AL-ELECT,GP	47UF,20%,16V,-40/85℃,RT	
C402R	277504763CAH	CAP,AL-ELECT,GP	47UF,20%,16V,-40/85℃,RT	
C403B	278204763CH	CAP,AL-ELECT,SRM TYPE,LOW HEIGHT	47UF,20%,16V,-40/85℃,RT	
C403G	278204763CH	CAP,AL-ELECT,SRM TYPE,LOW HEIGHT	47UF,20%,16V,-40/85℃,RT	
C403R	278204763CH	CAP,AL-ELECT,SRM TYPE,LOW HEIGHT	47UF,20%,16V,-40/85℃,RT	
C404B	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C404G	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C404R	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C405	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C407	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C409	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C410	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C411	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C412	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C413	277504763CAH	CAP,AL-ELECT,GP	47UF,20%,16V,-40/85℃,RT	
C415	277501058CAH	CAP,AL-ELECT,GP	1UF,20%,50V,-40/85℃,RT	
C416B	277501058CAH	CAP,AL-ELECT,GP	1UF,20%,50V,-40/85℃,RT	
C416G	277501058CAH	CAP,AL-ELECT,GP	1UF,20%,50V,-40/85℃,RT	
C416R	277501058CAH	CAP,AL-ELECT,GP	1UF,20%,50V,-40/85℃,RT	
C417B	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C417G	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C417R	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C419	263101048AEH	CAP,DISC CERAMIC,CC-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C420	2631027189EH	CAP,DISC CERAMIC,CC	270PF,5%,50V,-25/85℃,RT	
C421	2631027189EH	CAP,DISC CERAMIC,CC	270PF,5%,50V,-25/85℃,RT	
C422	277502273CAH	CAP,AL-ELECT,GP	220UF,20%,16V,-40/85℃,RT	
C423	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C424	277501073CAH	CAP,AL-ELECT,GP	100UF,20%,16V,-40/85℃,RT,SMALL	
C425	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C426	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C427	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C428	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C429	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C430	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C431	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C432	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C433	277501073CAH	CAP,AL-ELECT,GP	100UF,20%,16V,-40/85℃,RT,SMALL	
C434	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C435	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C436	2631010189EH	CAP,DISC CERAMIC,CC	100PF,5%,50V,-25/85℃,RT	
C437	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C438	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	

Loc No.	Code No.	Type	Description	Remarks
C439	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C440	26370103MAEH	CAP,DISC CERAMIC,CK	0.01UF,-20/80%,500V,-25/85℃,RT	
C441	277503358CAH	CAP,AL-ELECT,GP	3.3UF,20%,50V,-40/85℃,RT	
C442	277501073CAH	CAP,AL-ELECT,GP	100UF,20%,16V,-40/85℃,RT,SMALL	
C443	277502273CAH	CAP,AL-ELECT,GP	220UF,20%,16V,-40/85℃,RT	
C443B	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C443G	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C443R	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C444B	2631022089EH	CAP,DISC CERAMIC,CK-45	22PF,5%,50V,-25/85℃,RT	
C444G	2631022089EH	CAP,DISC CERAMIC,CK-45	22PF,5%,50V,-25/85℃,RT	
C444R	2631022089EH	CAP,DISC CERAMIC,CK-45	22PF,5%,50V,-25/85℃,RT	
C446	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C449	23560104F9CH	CAP,METALZ-POLYESTER	0.1UF,5%,250V,RT	
C450	27740476BCAH	CAP,AL-ELECT,GP	47UF,20%,100V,-40/105℃,RT	
C452B	23560104F9CH	CAP,METALZ-POLYESTER	0.1UF,5%,250V,RT	
C452G	23560104F9CH	CAP,METALZ-POLYESTER	0.1UF,5%,250V,RT	
C452R	23560104F9CH	CAP,METALZ-POLYESTER	0.1UF,5%,250V,RT	
C453B	27750105FCAH	CAP,AL-ELECT,GP	1 UF,20%,250V,-40/85℃,RT	
C453G	27750105FCAH	CAP,AL-ELECT,GP	1 UF,20%,250V,-40/85℃,RT	
C453R	27750105FCAH	CAP,AL-ELECT,GP	1 UF,20%,250V,-40/85℃,RT	
C454	2631022189EH	CAP,DISC CERAMIC,CC	220PF,5%,50V,-25/85℃,RT	
C455	277503358CAH	CAP,AL-ELECT,GP	3.3UF,20%,50V,-40/85℃,RT	
C456	277504758CAH	CAP,AL-ELECT,GP	4.7UF,20%,50V,-40/85℃,RT	
C457	277504758CAH	CAP,AL-ELECT,GP	4.7UF,20%,50V,-40/85℃,RT	
C458	23160683BACH	CAP,IND-POLYESTER	0.068UF,10%,100V,RT	
C459	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C460	2631010189EH	CAP,DISC CERAMIC,CC	100PF,5%,50V,-25/85℃,RT	
C461	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C462	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C463	277504763CAH	CAP,AL-ELECT,GP	47UF,20%,16V,-40/85℃,RT	
C464	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C465	23160222B9CH	CAP,IND-POLYESTER	2200PF,5%,100V,RT	
C466	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C467	277502258CAH	CAP,AL-ELECT,GP	2.2UF,20%,50V,-40/85℃,RT	
C468	277502258CAH	CAP,AL-ELECT,GP	2.2UF,20%,50V,-40/85℃,RT	
C469	2631010189EH	CAP,DISC CERAMIC,CC	100PF,5%,50V,-25/85℃,RT	
C470	2631033089EH	CAP,DISC CERAMIC,CC-45	33PF,5%,50V-25/85℃,RT,TC	
C471	2631033089EH	CAP,DISC CERAMIC,CC-45	33PF,5%,50V-25/85℃,RT,TC	
C472	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃ C,RT	
C473	277502258CAH	CAP,AL-ELECT,GP	2.2UF,20%,50V,-40/85℃,RT	
C474	26370103MAEH	CAP,DISC CERAMIC,CK	0.01UF,-20/80%,500V,-25/85℃,RT	
C475	2631010189EH	CAP,DISC CERAMIC,CC	100PF,5%,50V,-25/85℃,RT	
C476	2631010189EH	CAP,DISC CERAMIC,CC	100PF,5%,50V,-25/85℃,RT	
C477	23160332BACH	CAP,IND-POLYESTER	0.0033UF,10%,100V,RT	
C478	23160102BACH	CAP,IND-POLYESTER	0.001UF,10%,100V,RT	
C479	23160103BACH	CAP,IND-POLYESTER	0.01UF,10%,100V,RT,CQ92MT	
C480	277502258CAH	CAP,AL-ELECT,GP	2.2UF,20%,50V,-40/85℃,RT	
C481	277502258CAH	CAP,AL-ELECT,GP	2.2UF,20%,50V,-40/85℃,RT	
C482	277502258CAH	CAP,AL-ELECT,GP	2.2UF,20%,50V,-40/85℃,RT	
C483	277502258CAH	CAP,AL-ELECT,GP	2.2UF,20%,50V,-40/85℃,RT	
C484	278204758CAH	CAP,AL-ELECT,SRM TYPE,LOW HEIGHT	4.7UF,20%,50V,-40/85℃,RT	
C485	278204758CAH	CAP,AL-ELECT,SRM TYPE,LOW HEIGHT	4.7UF,20%,50V,-40/85℃,RT	

Loc No.	Code No.	Type	Description	Remarks
C486	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C487	23560104BACH	CAP,METALZ-POLYESTER	0.1UF,10%,100V,RT	
C488	278204763CH	CAP,AL-ELECT,SRM TYPE,LOW HEIGHT	47UF,20%,16V,-40/85℃,RT	
C490	278204763CH	CAP,AL-ELECT,SRM TYPE,LOW HEIGHT	47UF,20%,16V,-40/85℃,RT	
C491	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C492	262401048A1	CAP,DISC MONOLITIC	0.1UF,50V,MONO	
C493	23560104F9CH	CAP,METALZ-POLYESTER	0.1UF,5%,250V,RT	
C494	27750106FCAH	CAP,AL-ELECT,GP	10UF,20%,250V,-40/85℃,RT	
C501	2631022189EH	CAP,DISC CERAMIC,CC	220PF,5%,50V,-25/85℃,RT	
C502	2631022189EH	CAP,DISC CERAMIC,CC	220PF,5%,50V,-25/85℃,RT	
C503	2631010189EH	CAP,DISC CERAMIC,CC	100PF,5%,50V,-25/85℃,RT	
C504	2631010189EH	CAP,DISC CERAMIC,CC	100PF,5%,50V,-25/85℃,RT	
C505	277504763CAH	CAP,AL-ELECT,GP	47UF,20%,16V,-40/85℃,RT	
C506	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C507	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C508	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C509	277502273CAH	CAP,AL-ELECT,GP	220UF,20%,16V,-40/85℃,RT	
C510	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C511	2631022089EH	CAP,DISC CERAMIC,CK-45	22PF,5%,50V,-25/85℃,RT	
C512	277501065CAH	CAP,AL-ELECT,GP	10UF,20%,25V,-40/85℃,RT	
C513	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C514	2631022089EH	CAP,DISC CERAMIC,CK-45	22PF,5%,50V,-25/85℃,RT	
C515	2631022089EH	CAP,DISC CERAMIC,CK-45	22PF,5%,50V,-25/85℃,RT	
C516	23160102BACH	CAP,IND-POLYESTER	0.001UF,10%,100V,RT	
C517	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C518	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C519	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C520	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C521	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C523	2631022189EH	CAP,DISC CERAMIC,CC	220PF,5%,50V,-25/85℃,RT	
C601	26370102MAEH	CAP,DISC CERAMIC,CK	1000PF,500V,CER	
C602	26370102JCEH	CAP,DISC CERAMIC,CC-45	1000PF,20%,400VAC,-25/85℃,RT	
C603	26370272QAEH	CAP,DISC CERAMIC,CK	2700PF,10%,2KV,-25/85℃,RT	
C701	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C702	277502273CAH	CAP,AL-ELECT,GP	220UF,20%,16V,-40/85℃,RT	
C703	277504763CAH	CAP,AL-ELECT,GP	47UF,20%,16V,-40/85℃,RT	
C704	2631068189EH	CAP,DISC CERAMIC,CC	680PF,5%,50V,-25/85℃,RT	
C705	23160103BACH	CAP,IND-POLYESTER	0.01UF,10%,100V,RT,CQ92MT	
C706	277501065CAH	CAP,AL-ELECT,GP	10UF,20%,25V,-40/85℃,RT	
C707	23560223BACH	CAP,METALZ-POLYESTER	0.022UF,10%,100V,RT	
C709	277503358CAH	CAP,AL-ELECT,GP	3.3UF,20%,50V,-40/85℃,RT	
C710	23560104BACH	CAP,METALZ-POLYESTER	0.1UF,10%,100V,RT	
C711	277503358CAH	CAP,AL-ELECT,GP	3.3UF,20%,50V,-40/85℃,RT	
C712	277504768CAH	CAP,AL-ELECT,GP	47UF,20%,50V,-40/85℃,RT	
C713	26370102JCEH	CAP,DISC CERAMIC,CC-45	1000PF,20%,400VAC,-25/85℃,RT	
C714	277503368CAH	CAP,AL-ELECT,GP	33 UF,20%,50V,-40/85℃,RT	
C715	263102238AEH	CAP,DISC CERAMIC,CK-45	0.022UF,-20/80%,50V,-25/85℃,RT,HDC	
C716	23560102R9CH	CAP,PP,HIGH-VOL	1000PF,5%,2KV,RT	
C717	27750476FCAH	CAP,AL-ELECT,GP	47UF,20%,250V,-40/85℃,RT	
C718	23660334JACH	CAP,METALZ-PP	0.33UF,5%,400V,RT	
C720	277501076CAH	CAP,AL-ELECT,GP	100UF,20%,35V,-40/85℃,RT	
C721	23160103BACH	CAP,IND-POLYESTER	0.01UF,10%,100V,RT,CQ92MT	

Loc No.	Code No.	Type	Description	Remarks
C722	277501073CAH	CAP,AL-ELECT,GP	100UF,20%,16V,-40/85℃,RT,SMALL	
C723	277501065CAH	CAP,AL-ELECT,GP	10UF,20%,25V,-40/85℃,RT	
C724	277501078CAH	CAP,AL-ELECT,GP	100UF,20%,50V,-40/85℃,RT	
C725	277404768CAH	CAP,AL-ELECT,GP	47UF,20%,50V	
C727	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C730	26370103PAEH	CAP,DISC CERAMIC,CK	0.01UF,10%,1KV,-25/85℃,RT	
C731	26370103PAEH	CAP,DISC CERAMIC,CK	0.01UF,10%,1KV,-25/85℃,RT	
C732	26370103PAEH	CAP,DISC CERAMIC,CK	0.01UF,10%,1KV,-25/85℃,RT	
C733	277501068CAH	CAP,AL-ELECT,GP	10UF,20%,50V,-40/85℃,RT	
C734	263101048AEH	CAP,DISC CERAMIC,CK-45	0.1UF,-20/80%,50V,-25/85℃,RT	
C782	277504758CAH	CAP,AL-ELECT,GP	4.7UF,20%,50V,-40/85℃,RT	
CN101	46148703AA	SOCKET AC INLET	03ME3D	
CN102	46890101AA	G/T PIN,1PIN,2.36PAI		
CN102-1	46890101AA	G/T PIN,1PIN,2.36PAI		
CN103	49210004AA	CONN WIRE HOUSING BUILT IN 12-12PIN		
CN104	46240903AA	CONN LOCK HEADER 3PIN	5267-03	
CN105	49210006AA	CONN WIRE HOUSING BUILT IN 2-3PIN		
CN106	46890101AA	G/T PIN,1PIN,2.36PAI		
CN201	46220103AA	CONN 3PIN,8MM,6.5MM 1.2PAI	RTB-1.5-3P	
CN301	46890101AA	G/T PIN,1PIN,2.36PAI		
CN301-1	46890101AA	G/T PIN,1PIN,2.36PAI		
CN301-2	46890101AA	G/T PIN,1PIN,2.36PAI		
CN302	46240903AA	CONN LOCK HEADER 3PIN	5267-03	
CN401	46100215AA	CONN D-SUB 2LAYER	301-121-104	
CN402	46100415AA	CONN D-SUB 3LAYER	302-121-104	
CN403	46610001AA	CONN BNC 75 OHM	360-132-201R,A	
CN404	46610001AA	CONN BNC 75 OHM	360-132-201R,A	
CN405	46610001AA	CONN BNC 75 OHM	360-132-201R,A	
CN406	46610001AA	CONN BNC 75 OHM	360-132-201R,A	
CN407	46610001AA	CONN BNC 75 OHM	360-132-201R,A	
CN408	46241313AA	CONN 13PIN 5046-13	5046-13	
CN409	46241313AA	CONN 13PIN 5046-13	5046-13	
CN410	46241309AA	CONN 9PIN 5046-09	5046-09	
CN411	46720001AA	CONN 3PIN,PHONE JACK STEREO	J355W0	
CN502	46240903AA	CONN LOCK HEADER 3PIN	5267-03	
CN503	49210005AA	CONN WIRE HOUSING BUILT IN 14-14PIN		
CN504	46240803A2	CONN 3PIN	5268-03	
CN601	49210001AA	CONN WIRE HOUSING 10-9P		
CN602	46890101AA	G/T PIN,1PIN,2.36PAI		
CN602-1	46890101AA	G/T PIN,1PIN,2.36PAI		
CN603	46890101AA	G/T PIN,1PIN,2.36PAI		
CN604	46149510AA	SOCKET,CRT	ISDS04S,D-FOCUS,29PAI	
D101	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D102	35390016AA	RECTIFIER DIODE BR	GBL06,6A,800V,FORMING	
D103	35390007AA	RECTIFIER DIODE FR	UF4004,1A,400V,50NS,AT	
D104	35390006AA	RECTIFIER DIODE FR	3A,400V,50NS,UF5404	
D105	35390006AA	RECTIFIER DIODE FR	3A,400V,50NS,UF5404	
D106	35390006AA	RECTIFIER DIODE FR	3A,400V,50NS,UF5404	
D107	35290021AA	ZENER DIODE	0.5W,43V,UZ43B	
D108	35390006AA	RECTIFIER DIODE FR	3A,400V,50NS,UF5404	
D109	35390006AA	RECTIFIER DIODE FR	3A,400V,50NS,UF5404	
D110	35390007AA	RECTIFIER DIODE FR	UF4004,1A,400V,50NS,AT	

Loc No.	Code No.	Type	Description	Remarks
D111	35390006AA	RECTIFIER DIODE FR	3A,400V,50NS,UF5404	
D112	35290006AA	ZENER DIODE	0.5W,5.1V,UZ5.1B	
D113	35390006AA	RECTIFIER DIODE FR	3A,400V,50NS,UF5404	
D114	35290019AA	ZENER DIODE	0.5W,6.2V,UZ6.2B	
D115	37110002DA	LED GREEN/ORANGE	LTL-368DJ,30MA/100MW,20MA/60MW	
D116	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D203	35290013AA	ZENER DIODE	0.5W,12V,UZ12B	
D301	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D302	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D303	35390007AA	RECTIFIER DIODE FR	UF4004,1A,400V,50NS,AT	
D305	35314002AA	RECTIFIER DIODE GP	1A,100V,1N4002	
D306	35314002AA	RECTIFIER DIODE GP	1A,100V,1N4002	
D307	35314002AA	RECTIFIER DIODE GP	1A,100V,1N4002	
D308	35990003	RECTIFIER DIODE PW	BY359F,10A,1500V	
D309	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D310	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D311	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D312	35314937AA	RECTIFIER DIODE FR	1A,600V,1N4937	
D313	35314937AA	RECTIFIER DIODE FR	1A,600V,1N4937	
D314	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D315	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D316	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D317	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D318	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D319	35314937AA	RECTIFIER DIODE FR	1A,600V,1N4937	
D320	35390006AA	RECTIFIER DIODE FR	3A,400V,50NS,UF5404	
D321	35290013AA	ZENER DIODE	0.5W,12V,UZ12B	
D322	35390007AA	RECTIFIER DIODE FR	UF4004,1A,400V,50NS,AT	
D323	35290013AA	ZENER DIODE	0.5W,12V,UZ12B	
D324	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D326	35314002AA	RECTIFIER DIODE GP	1A,100V,1N4002	
D327	35314937AA	RECTIFIER DIODE FR	1A,600V,1N4937	
D328	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D401	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D401B	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D401G	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D401R	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D402B	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D402G	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D402R	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D403B	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D403G	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D403R	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D404B	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D404G	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D404R	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D406	35290006AA	ZENER DIODE	0.5W,5.1V,UZ5.1B	
D408	35290006AA	ZENER DIODE	0.5W,5.1V,UZ5.1B	
D410B	35190002	RECTIFIER DIODE GP	1SS244,0.25A,250V,AT	
D410G	35190002	RECTIFIER DIODE GP	1SS244,0.25A,250V,AT	
D410R	35190002	RECTIFIER DIODE GP	1SS244,0.25A,250V,AT	
D411B	35190002	RECTIFIER DIODE GP	1SS244,0.25A,250V,AT	

Loc No.	Code No.	Type	Description	Remarks
D411G	35190002	RECTIFIER DIODE GP	1SS244,0.25A,250V,AT	
D411R	35190002	RECTIFIER DIODE GP	1SS244,0.25A,250V,AT	
D412B	35190002	RECTIFIER DIODE GP	1SS244,0.25A,250V,AT	
D412G	35190002	RECTIFIER DIODE GP	1SS244,0.25A,250V,AT	
D412R	35190002	RECTIFIER DIODE GP	1SS244,0.25A,250V,AT	
D413	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D414	35314937AA	RECTIFIER DIODE FR	1A,600V,1N4937	
D415	35314937AA	RECTIFIER DIODE FR	1A,600V,1N4937	
D416	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D417	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D418	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D419	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D420	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D421	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D422	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D423	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D501	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D502	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D503	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D504	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D505	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D506	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D507	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D508	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D701	35314002AA	RECTIFIER DIODE GP	1A,100V,1N4002	
D702	35314002AA	RECTIFIER DIODE GP	1A,100V,1N4002	
D703	35314002AA	RECTIFIER DIODE GP	1A,100V,1N4002	
D704	35390010AA	RECTIFIER DIODE FR	RGP02-12E,0.5A,1200V,300NS,AT	
D705	35990003	RECTIFIER DIODE PW	BY359F,10A,1500V	
D706	35390007AA	RECTIFIER DIODE FR	UF4004,1A,400V,50NS,AT	
D707	35290020AA	ZENER DIODE	0.50W,33V,UZ33B	
D708	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D709	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D710	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D711	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D713	35314002AA	RECTIFIER DIODE GP	1A,100V,1N4002	
D714	35314002AA	RECTIFIER DIODE GP	1A,100V,1N4002	
D715	35290006AA	ZENER DIODE	0.5W,5.1V,UZ5.1B	
D716	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D717	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D718	35390007AA	RECTIFIER DIODE FR	UF4004,1A,400V,50NS,AT	
D719	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D720	35114148	SWITCHING DIODE	1N4148,150MA,75V	
D721	35290001AA	ZENER DIODE	0.5W,2.7V,UZ2.7B	
D722	35390008AA	RECTIFIER DIODE FR	UF4007,1A,1000V,75NS,AT	
D723	35390008AA	RECTIFIER DIODE FR	UF4007,1A,1000V,75NS,AT	
D724	35390009AA	RECTIFIER DIODE FR	UF5408,3A,1000V,75NS,FORMING	
D725	35390009AA	RECTIFIER DIODE FR	UF5408,3A,1000V,75NS,FORMING	
D726	35390007AA	RECTIFIER DIODE FR	UF4004,1A,400V,50NS,AT	
D727	35390008AA	RECTIFIER DIODE FR	UF4007,1A,1000V,75NS,AT	
D728	35390008AA	RECTIFIER DIODE FR	UF4007,1A,1000V,75NS,AT	
D729	35114148	SWITCHING DIODE	IN4148,150MA,75V	

Loc No.	Code No.	Type	Description	Remarks
D730	35290019AA	ZENER DIODE	0.5W,6.2V,UZ6.2B	
E1	74120022AA	EYELET IN DIA 2.2	E2.2	
E10	74120015AA	EYELET IN DIA 1.5	E1.5	
E11	74120015AA	EYELET IN DIA 1.5	E1.5	
E12	74120015AA	EYELET IN DIA 1.5	E1.5	
E13	74120015AA	EYELET IN DIA 1.5	E1.5	
E14	74120015AA	EYELET IN DIA 1.5	E1.5	
E15	74120015AA	EYELET IN DIA 1.5	E1.5	
E16	74120015AA	EYELET IN DIA 1.5	E1.5	
E17	74120015AA	EYELET IN DIA 1.5	E1.5	
E18	74120015AA	EYELET IN DIA 1.5	E1.5	
E19	74120015AA	EYELET IN DIA 1.5	E1.5	
E2	74120022AA	EYELET IN DIA 2.2	E2.2	
E20	74120015AA	EYELET IN DIA 1.5	E1.5	
E21	74120015AA	EYELET IN DIA 1.5	E1.5	
E22	74120015AA	EYELET IN DIA 1.5	E1.5	
E23	74120015AA	EYELET IN DIA 1.5	E1.5	
E24	74120015AA	EYELET IN DIA 1.5	E1.5	
E25	74120015AA	EYELET IN DIA 1.5	E1.5	
E26	74120015AA	EYELET IN DIA 1.5	E1.5	
E29	74120015AA	EYELET IN DIA 1.5	E1.5	
E3	74120022AA	EYELET IN DIA 2.2	E2.2	
E30	74120015AA	EYELET IN DIA 1.5	E1.5	
E31	74120015AA	EYELET IN DIA 1.5	E1.5	
E32	74120015AA	EYELET IN DIA 1.5	E1.5	
E33	74120015AA	EYELET IN DIA 1.5	E1.5	
E34	74120015AA	EYELET IN DIA 1.5	E1.5	
E35	74120015AA	EYELET IN DIA 1.5	E1.5	
E36	74120015AA	EYELET IN DIA 1.5	E1.5	
E37	74120015AA	EYELET IN DIA 1.5	E1.5	
E38	74120015AA	EYELET IN DIA 1.5	E1.5	
E39	74120015AA	EYELET IN DIA 1.5	E1.5	
E4	74120022AA	EYELET IN DIA 2.2	E2.2	
E40	74120015AA	EYELET IN DIA 1.5	E1.5	
E41	74120015AA	EYELET IN DIA 1.5	E1.5	
E42	74120015AA	EYELET IN DIA 1.5	E1.5	
E43	74120015AA	EYELET IN DIA 1.5	E1.5	
E44	74120015AA	EYELET IN DIA 1.5	E1.5	
E45	74120015AA	EYELET IN DIA 1.5	E1.5	
E46	74120015AA	EYELET IN DIA 1.5	E1.5	
E47	74120015AA	EYELET IN DIA 1.5	E1.5	
E48	74120015AA	EYELET IN DIA 1.5	E1.5	
E49	74120015AA	EYELET IN DIA 1.5	E1.5	
E5	74120022AA	EYELET IN DIA 2.2	E2.2	
E6	74120022AA	EYELET IN DIA 2.2	E2.2	
E7	74120015AA	EYELET IN DIA 1.5	E1.5	
E8	74120015AA	EYELET IN DIA 1.5	E1.5	
E9	74120015AA	EYELET IN DIA 1.5	E1.5	
F101	50510001	FUSE TIMELUG 3.15A UL/CSA/VDE	50CT	
FC101	52260001	FUSE CLIP	FC51F	
FC102	52260001	FUSE CLIP	FC51F	
HIC401	18400002DF	IC HYBRID BIAS CONTROL	HAN17V	

Loc No.	Code No.	Type	Description	Remarks
IC101	15310317KA	IC REG	KA317	
IC102	37590001AA	IC OPTO COUPLER	4N35	
IC103	15210431TA	IC REG	KA431	
IC104	15317805KA	IC REG IC 5V	KA7805	
IC105	15716200SA	IC POWER HYBRID	SMR62000	
IC201	15718351SA	IC LINEAR	TDA8351	
IC301	15714855AA	IC LINEAR	TDA4855	
IC302	15110324AA	IC OP AMP	KA324	
IC401	16602421AA	IC EEPROM DDC	24LC21/P	
IC402	15992348AA	IC VIDEO SELECTER	M52348SP	
IC403	15992347AA	IC SYNC PROCESSOR	M52347SP	
IC404	15111283AA	IC VIDEO PRE AMP	LM1283	
IC405	15919422AA	IC OSD	STV9422	
IC406	15110010SA	IC HYBRID VIDEO OUTPUT AMP 15PIN SIP	VPS10S	
IC407	15217042TA	IC RESET 4.2V	KIA7042P	
IC501	14116371AA	IC MICOM	ST6371	
IC503	15217042TA	IC RESET 4.2V	KIA7042P	
IC701	15710494AA	IC PWM	TL494	
IC702	15210358AA	IC COMPARATOR	KA358	
L101	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L102	34002001	COIL RESONATOR	RS107	
L103	34210005	COIL,CHOKE	50UH	
L104	34210005	COIL,CHOKE	50UH	
L105	34210005	COIL,CHOKE	50UH	
L106	34210005	COIL,CHOKE	50UH	
L107	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L110	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L301	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L302	34210005	COIL,CHOKE	50UH	
L303	34210002	COIL,H-LIN,5UH	5UH	
L304	34210003	COIL,H-LIN,26UH	26UH	
L305	34210001	COIL CHOKE 7.5MH	7.5MH	
L306	34001004	COIL,BEAD		
L311	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L401	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L401B	211010074F	RES,CARBON,AT	10 OHM,1/6W,5%	
L401G	211010074F	RES,CARBON,AT	10 OHM,1/6W,5%	
L401R	211010074F	RES,CARBON,AT	10 OHM,1/6W,5%	
L402B	211010074F	RES,CARBON,AT	10 OHM,1/6W,5%	
L402G	211010074F	RES,CARBON,AT	10 OHM,1/6W,5%	
L402R	211010074F	RES,CARBON,AT	10 OHM,1/6W,5%	
L403	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L404	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L405	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L601	34001003	COIL PEACKING RT	0.27UH,5%,AT	
L602	34001003	COIL PEACKING RT	0.27UH,5%,AT	
L603	34001003	COIL PEACKING RT	0.27UH,5%,AT	
L604	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L702	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L703	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
L704	34001002	COIL,BEAD CORE,2.4UH	BFS3565	
Q101	30325551AA	TR NPN TO-92	2N5551C-Y,0.6A,160V,625MW	

Loc No.	Code No.	Type	Description	Remarks
Q102	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q103	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q104	30141013AA	TR,PNP	KSA1013	
Q105	30325551AA	TR NPN TO-92	2N5551C-Y,0.6A,160V,625MW	
Q106	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q107	30362331AA	TR NPN TO-92	KSC2331Y,700MA,80V,1.0W,LF AMP	
Q108	36110007	SCR	S1206DH,12A,400V	
Q201	30362331AA	TR NPN TO-92	KSC2331Y,700MA,80V,1.0W,LF AMP	
Q202	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q301	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q302	30140733AA	TR PNP TO-92	KSA733Y,0.15A,60V,0.25W,LF AMP	
Q303	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q304	30882341AA	FET N-CHANNEL	2SK2341	
Q305	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q306	30890002AA	FET N-CHANNEL	IRF610,3.3A,200V,43W(TC),TO-220	
Q308	30490004AA	TR NPN TO-247	MJF16212,10A,1500V,150W(TC),HOR DEF	
Q309	30470882AA	TR NPN TO-126	KSD882	
Q310	30250772AA	TR PNP TO-126	KSB772	
Q311	30361008AA	TR NPN TO-92	KSC1008Y,0.7A,80V,800MA,LF AMP	
Q312	30361008AA	TR NPN TO-92	KSC1008Y,0.7A,80V,800MA,LF AMP	
Q313	30890001AA	FET N-CHANNEL	IRF640,18A,200V,125W(TC),TO-220	
Q314	30890001AA	FET N-CHANNEL	IRF640,18A,200V,125W(TC),TO-220	
Q315	30890001AA	FET N-CHANNEL	IRF640,18A,200V,125W(TC),TO-220	
Q316	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q317	30890001AA	FET N-CHANNEL	IRF640,18A,200V,125W(TC),TO-220	
Q318	30361008AA	TR NPN TO-92	KSC1008Y,0.7A,80V,800MA,LF AMP	
Q319	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q320	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q321	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q322	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q323	30140733AA	TR PNP TO-92	KSA733Y,0.15A,60V,0.25W,LF AMP	
Q324	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q401	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q402	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q403	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q404	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q404B	30325770AA	TR NPN TO-92	2N5770,30V,500MW,RF AMP/OSC,RT	
Q404G	30325770AA	TR NPN TO-92	2N5770,30V,500MW,RF AMP/OSC,RT	
Q404R	30325770AA	TR NPN TO-92	2N5770,30V,500MW,RF AMP/OSC,RT	
Q405	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q406	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q407	30140733AA	TR PNP TO-92	KSA733Y,0.15A,60V,0.25W,LF AMP	
Q408	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q409	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q410	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q411	30140733AA	TR PNP TO-92	KSA733Y,0.15A,60V,0.25W,LF AMP	
Q701	30890002AA	FET N-CHANNEL	IRF610,3.3A,200V,43W(TC),TO-220	
Q702	30490005AA	TR NPN TO-247	BU2525AF	
Q703	30140733AA	TR PNP TO-92	KSA733Y,0.15A,60V,0.25W,LF AMP	
Q704	30390002AA	TR NPN TO-92	KSP2222A,600MA,75V,625MW,GP,RT	
Q705	30890003AA	FET N-CHANNEL	IRF740,10A,400V,125W(TC),TO-220	
Q706	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	

Loc No.	Code No.	Type	Description	Remarks
Q707	30390003AA	TR NPN TO-92	KSP44,0.6A,60V,625MW,SW,RT	
Q708	30390003AA	TR NPN TO-92	KSP44,0.6A,60V,625MW,SW,RT	
Q709	30140733AA	TR PNP TO-92	KSA733Y,0.15A,60V,0.25W,LF AMP	
Q710	30126520AA	TR PNP TO-92	2N6520,0.5A,350V,0.625W,HV,TAPING	
Q712	30390003AA	TR NPN TO-92	KSP44,0.6A,60V,625MW,SW,RT	
Q713	30390003AA	TR NPN TO-92	KSP44,0.6A,60V,625MW,SW,RT	
Q714	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
Q715	30360945AA	TR NPN TO-92	KSC945Y,150MA,60V,250MV,AF AMP/OSC	
R101	211010175F	RES,CARBON,AT	100 OHM,1/4W,5%	
R102	211010578F	RES,CARBON,AT	1M OHM,1/2W,5%	
R103	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R104	211015478F	RES,CARBON,AT	150K OHM,1/2W,5%	
R105	211015478F	RES,CARBON,AT	150K OHM,1/2W,5%	
R106	211012275F	RES,CARBON,AT	1.2K OHM,1/4W,5%	
R107	221022375F	RES,CARBON,AT	22K OHM,1/4W,5%	
R108	211010175F	RES,CARBON,AT	100 OHM,1/4W,5%	
R109	211010175F	RES,CARBON,AT	100 OHM,1/4W,5%	
R110	216R1507EA	RES,WIRE WOUND,AT	0.15 OHM,3W,5%,AT	
R111	211047375F	RES,CARBON,AT	47K OHM,1/4W,5%	
R112	211047275F	RES,CARBON,AT	4.7K OHM,1/4W,5%	
R113	211056175F	RES,CARBON,AT	560 OHM,1/4W,5%	
R114	211047175F	RES,CARBON,AT	470 OHM,1/4W,5%	
R115	211022374F	RES,CARBON,AT	22K OHM,1/6W,5%	
R116	211020478F	RES,CARBON,AT	200K OHM,1/2W,5%	
R117	221022375F	RES,CARBON,AT	22K OHM,1/4W,5%	
R118	211022275F	RES,CARBON,AT	2.2K OHM,1/4W,5%	
R119	214039155F	RES,METAL,AT	390 OHM,1/4W,1%	
R120	214033253F	RES,METAL,AT	3.3K OHM,1/8W,1%	
R121	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R122	211015478F	RES,CARBON,AT	150K OHM,1/2W,5%	
R123	21304737BF	RES,METAL OXIDE,AT	47K OHM,1W,5%,63MM TAPING	
R124	211027278F	RES,CARBON,AT	2.7K OHM,1/2W,5%	
R125	211015175F	RES,CARBON,AT	150 OHM,1/4W,5%	
R126	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R127	2182R207J	RES,FUSIBLE,AT	2.2 OHM,1W,5%	
R128	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R129	211010275F	RES,CARBON,AT	1K OHM,1/4W,5%	
R130	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R131	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R132	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R133	211022178F	RES,CARBON,AT	220 OHM,1/2W,5%	
R134	211022175F	RES,CARBON,AT	220 OHM,1/4W,5%	
R135	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R136	211010278F	RES,CARBON,AT	1K OHM,1/2W,5%	
R137	211039174F	RES,CARBON,AT	390 OHM,1/6W,5%	
R138	21301007EF	RES,METAL OXIDE,AT	10 OHM,3W,5%,AT	
R139	211027378F	RES,CARBON,AT	27K OHM,1/2W,5%	
R140	211047275F	RES,CARBON,AT	4.7K OHM,1/4W,5%	
R201	211001078F	RES,CARBON,AT	1 OHM,1/2W,5%	
R202	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R203	211015274F	RES,CARBON,AT	1.5K OHM,1/6W,5%	
R204	211015274F	RES,CARBON,AT	1.5K OHM,1/6W,5%	

Loc No.	Code No.	Type	Description	Remarks
R205	21300107BF	RES,METAL OXIDE,AT	1 OHM,1W,5%,63MM TAPING	
R206	21301817BF	RES,METAL OXIDE,AT	180 OHM,1W,5%,63MM TAPING	
R207	211010078F	RES,CARBON,AT	10 OHM,1/2W,5%	
R208	211015274F	RES,CARBON,AT	1.5K OHM,1/6W,5%	
R210	211015278F	RES,CARBON,AT	1.5K OHM,1/2W,5%	
R211	211027274F	RES,CARBON,AT	2.7K OHM,1/6W,5%	
R212	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R300	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R301	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R302	211056474F	RES,CARBON,AT	560K OHM,1/6W,5%	
R303	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R304	211056474F	RES,CARBON,AT	560K OHM,1/6W,5%	
R305	211056374F	RES,CARBON,AT	56K OHM,1/6W,5%	
R306	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R307	211033374F	RES,CARBON,AT	33K OHM,1/6W,5%	
R308	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R309	21301007BF	RES,METAL OXIDE,AT	10 OHM,1W,5%,63MM TAPING	
R310	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R311	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R312	211068374F	RES,CARBON,AT	68K OHM,1/6W,5%	
R313	211068374F	RES,CARBON,AT	56K OHM,1/6W,5%	
R314	211033374F	RES,CARBON,AT	33K OHM,1/6W,5%	
R315	211012474F	RES,CARBON,AT	120K OHM,1/6W,5%	
R316	211056374F	RES,CARBON,AT	56K OHM,1/6W,5%	
R317	211022374F	RES,CARBON,AT	22K OHM,1/6W,5%	
R318	211022374F	RES,CARBON,AT	22K OHM,1/6W,5%	
R319	211012374F	RES,CARBON,AT	12K OHM,1/6W,5%	
R320	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R321	214150153F	RES,METAL,AT	1.5K OHM,1/8W,1%	
R322	214087153F	RES,METAL,AT	870 OHM,1/8W,1%	
R323	211039374F	RES,CARBON,AT	39K OHM,1/6W,5%	
R324	211033474F	RES,CARBON,AT	330K OHM,1/6W,5%	
R325	211018474F	RES,CARBON,AT	180K OHM,5%,1/6W	
R326	211027274F	RES,CARBON,AT	2.7K OHM,1/6W,5%	
R327	211027274F	RES,CARBON,AT	2.7K OHM,1/6W,5%	
R328	211015574F	RES,CARBON,AT	1.5M OHM,1/6W,5%	
R329	211012474F	RES,CARBON,AT	120K OHM,1/6W,5%	
R330	21304727BF	RES,METAL OXIDE,AT	4.7K OHM,1W,5%,63MM TAPING	
R331	2182R207J	RES,FUSIBLE,AT	2.2 OHM,1W,5%	
R333	211010375F	RES,CARBON,AT	10K OHM,1/4W,5%	
R334	211082374F	RES,CARBON,AT	82K OHM,1/6W,5%	
R335	211022374F	RES,CARBON,AT	22K OHM,1/6W,5%	
R336	211010275F	RES,CARBON,AT	1K OHM,1/4W,5%	
R337	211039374F	RES,CARBON,AT	39K OHM,1/6W,5%	
R338	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R339	211033274F	RES,CARBON,AT	3.3K OHM,1/6W,5%	
R340	211033374F	RES,CARBON,AT	33K OHM,1/6W,5%	
R341	211047078F	RES,CARBON,AT	47 OHM,1/2W,5%	
R342	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R343	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R345	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R346	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	

Loc No.	Code No.	Type	Description	Remarks
R347	211047075F	RES,CARBON,AT	47 OHM,1/4W,5%	
R348	2181R2078F	RES,FUSIBLE,AT	1.2 OHM,1/2W,5%	
R349	211010275F	RES,CARBON,AT	1K OHM,1/4W,5%	
R350	21302217EF	RES,METAL OXIDE,AT	220 OHM,3W,5%,AT	
R351	211010174F	RES,CARBON,AT	100 OHM,1/6W,5%	
R352	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R353	2116R8078F	RES,CARBON,AT	6.8 OHM,1/2W,5%	
R354	21304707EF	RES,METAL OXIDE,AT	47 OHM,3W,5%,AT	
R358	21302717BF	RES,METAL OXIDE,AT	270 OHM,1W,5%,63MM TAPING	
R359	211010175F	RES,CARBON,AT	100 OHM,1/4W,5%	
R360	211010175F	RES,CARBON,AT	100 OHM,1/4W,5%	
R361	21301027BF	RES,METAL OXIDE,AT	1K OHM,1W,5%,63MM TAPING	
R362	2184R7078F	RES,FUSIBLE,AT	4.7 OHM,1/2W,5%	
R363	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R364	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R365	211010574F	RES,CARBON,AT	1M OHM,1/6W,5%	
R366	211010574F	RES,CARBON,AT	1M OHM,1/6W,5%	
R367	211010574F	RES,CARBON,AT	1M OHM,1/6W,5%	
R368	21301007BF	RES,METAL OXIDE,AT	10 OHM,1W,5%,63MM TAPING	
R369	211010574F	RES,CARBON,AT	1M OHM,1/6W,5%	
R370	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R371	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R372	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R374	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R375	211082274F	RES,CARBON,AT	8.2K OHM,1/6W,5%	
R376	21302217EF	RES,CARBON,AT	220 OHM,3W,5%,AT	
R377	211033478F	RES METAL OXIDE AT	330K OHM,1/2W,5%	
R378	211027274F	RES,CARBON,AT	2.7K OHM,1/6W,5%	
R379	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R380	211082374F	RES,CARBON,AT	82K OHM,1/6W,5%	
R382	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R383	211027275F	RES,CARBON,AT	2.7K OHM,1/4W,5%	
R384	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R385	21304727BF	RES,CARBON,AT	4.7K OHM,1W,5%,63MM TAPING	
R386	211010274F	RES,METAL OXIDE,AT	1K OHM,1/6W,5%	
R401	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R401B	211075074F	RES,CARBON,AT	75 OHM,1/6W,5%	
R401G	211075074F	RES,CARBON,AT	75 OHM,1/6W,5%	
R401R	211075074F	RES,CARBON,AT	75 OHM,1/6W,5%	
R402	211056374F	RES,CARBON,AT	56K OHM,1/6W,5%	
R402B	211075074F	RES,CARBON,AT	75 OHM,1/6W,5%	
R402G	211075074F	RES,CARBON,AT	75 OHM,1/6W,5%	
R402R	211075074F	RES,CARBON,AT	75 OHM,1/6W,5%	
R403	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R404	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R405	211047374F	RES,CARBON,AT	47K OHM,1/6W,5%	
R406	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R407	2182R207J	RES,CARBON,AT	2.2 OHM,1W,5%	
R409	211022174F	RES,FUSIBLE,AT	220 OHM,1/6W,5%	
R410	211022174F	RES,CARBON,AT	220 OHM,1/6W,5%	
R411	211022174F	RES,CARBON,AT	220 OHM,1/6W,5%	
R412	211056374F	RES,CARBON,AT	56K OHM,1/6W,5%	

Loc No.	Code No.	Type	Description	Remarks
R412B	211047074F	RES,CARBON,AT	47 OHM,1/6W,5%	
R412G	211047074F	RES,CARBON,AT	47 OHM,1/6W,5%	
R412R	211047074F	RES,CARBON,AT	47 OHM,1/6W,5%	
R413	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R414	211062274F	RES,CARBON,AT	6.2K OHM,1/6W,5%	
R415	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R416	211068274F	RES,CARBON,AT	6.8K OHM,1/6W,5%	
R417	211022174F	RES,CARBON,AT	220 OHM,1/6W,5%	
R418	211039174F	RES,CARBON,AT	390 OHM,1/6W,5%	
R419	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R423	211068274F	RES,CARBON,AT	6.8K OHM,1/6W,5%	
R424	211068274F	RES,CARBON,AT	6.8K OHM,1/6W,5%	
R425	211068274F	RES,CARBON,AT	6.8K OHM,1/6W,5%	
R426	211012374F	RES,CARBON,AT	12K OHM,1/6W,5%	
R427	211020274F	RES,CARBON,AT	2K OHM,1/6W,5%	
R428	211022075F	RES,CARBON,AT	22 OHM,1/4W,5%	
R429	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R429B	211039174F	RES,CARBON,AT	390 OHM,1/6W,5%	
R429G	211039174F	RES,CARBON,AT	390 OHM,1/6W,5%	
R429R	211039174F	RES,CARBON,AT	390 OHM,1/6W,5%	
R430	211010174F	RES,CARBON,AT	100 OHM,1/6W,5%	
R430B	211047074F	RES,CARBON,AT	47 OHM,1/6W,5%	
R430G	211047074F	RES,CARBON,AT	47 OHM,1/6W,5%	
R430R	211047074F	RES,CARBON,AT	47 OHM,1/6W,5%	
R431	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R431B	211027175F	RES,CARBON,AT	270 OHM,1/4W,5%	
R431G	211027175F	RES,CARBON,AT	270 OHM,1/4W,5%	
R431R	211027175F	RES,CARBON,AT	270 OHM,1/4W,5%	
R432	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R433	211039174F	RES,CARBON,AT	390 OHM,1/6W,5%	
R433B	211033074F	RES,CARBON,AT	33 OHM,1/6W,5%	
R433G	211033074F	RES,CARBON,AT	33 OHM,1/6W,5%	
R433R	211033074F	RES,CARBON,AT	33 OHM,1/6W,5%	
R435	211022174F	RES,CARBON,AT	220 OHM,1/6W,5%	
R435B	211033074F	RES,CARBON,AT	33 OHM,1/6W,5%	
R435G	211033074F	RES,CARBON,AT	33 OHM,1/6W,5%	
R435R	211033074F	RES,CARBON,AT	33 OHM,1/6W,5%	
R436	211010175F	RES,CARBON,AT	100 OHM,1/4W,5%	
R437	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R438B	211027475F	RES,CARBON,AT	270K OHM,1/4W,5%	
R438G	211027475F	RES,CARBON,AT	270K OHM,1/4W,5%	
R438R	211027475F	RES,CARBON,AT	270K OHM,1/4W,5%	
R439B	211027475F	RES,CARBON,AT	270K OHM,1/4W,5%	
R439G	211027475F	RES,CARBON,AT	270K OHM,1/4W,5%	
R439R	211027475F	RES,CARBON,AT	270K OHM,1/4W,5%	
R440	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R441	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R442	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R443	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R444	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R445	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R446	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	

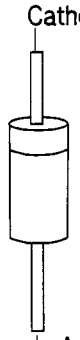
Loc No.	Code No.	Type	Description	Remarks
R447	211033274F	RES,CARBON,AT	3.3K OHM,1/6W,5%	
R448	211039374F	RES,CARBON,AT	39K OHM,1/6W,5%	
R449	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R450	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R452	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R453	211033374F	RES,CARBON,AT	33K OHM,1/6W,5%	
R454	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R456	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R457	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R458	211027174F	RES,CARBON,AT	270 OHM,1/6W,5%	
R459	211027174F	RES,CARBON,AT	270 OHM,1/6W,5%	
R460	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R461	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R462	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R463	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R464	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R465	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R466	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R467	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R468	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R469	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R470	211047074F	RES,CARBON,AT	47 OHM,1/6W,5%	
R471	211047074F	RES,CARBON,AT	47 OHM,1/6W,5%	
R472	211047074F	RES,CARBON,AT	47 OHM,1/6W,5%	
R473	211047175F	RES,CARBON,AT	470 OHM,1/4W,5%	
R474	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R475	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R476	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R477	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R478	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R479	211056274F	RES,CARBON,AT	5.6K OHM,1/6W,5%	
R480	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R481	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R482	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R483	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R484	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R485	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R486	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R487	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R488	211018374F	RES,CARBON,AT	18K OHM,1/6W,5%	
R489	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R490	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R491	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R492	211010175F	RES,CARBON,AT	100 OHM,1/4W,5%	
R493	211022374F	RES,CARBON,AT	22K OHM,1/6W,5%	
R494	211022174F	RES,CARBON,AT	220 OHM,1/6W,5%	
R499	211027174F	RES,CARBON,AT	270 OHM,1/6W,5%	
R501	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R502	211010174F	RES,CARBON,AT	100 OHM,1/6W,5%	
R503	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R504	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R505	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	

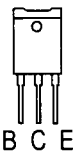
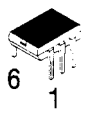
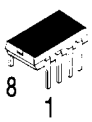
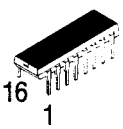
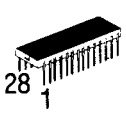
Loc No.	Code No.	Type	Description	Remarks
R506	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R507	211010174F	RES,CARBON,AT	100 OHM,1/6W,5%	
R508	211010174F	RES,CARBON,AT	100 OHM,1/6W,5%	
R509	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R510	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R511	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R512	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R523	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R524	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R525	211010275F	RES,CARBON,AT	1K OHM,1/4W,5%	
R527	211010574F	RES,CARBON,AT	1M OHM,1/6W,5%	
R529	211047174F	RES,CARBON,AT	470 OHM,1/6W,5%	
R530	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R531	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R532	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R533	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R534	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R535	211027174F	RES,CARBON,AT	270 OHM,1/6W,5%	
R536	211027174F	RES,CARBON,AT	270 OHM,1/6W,5%	
R537	211027174F	RES,CARBON,AT	270 OHM,1/6W,5%	
R538	211027174F	RES,CARBON,AT	270 OHM,1/6W,5%	
R539	211027174F	RES,CARBON,AT	270 OHM,1/6W,5%	
R540	211030274F	RES,CARBON,AT	3K OHM,1/6W,5%	
R541	211039274F	RES,CARBON,AT	3.9K OHM,1/6W,5%	
R542	211022374F	RES,CARBON,AT	22K OHM,1/6W,5%	
R544	211056274F	RES,CARBON,AT	5.6K OHM,1/6W,5%	
R601	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R602	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R603	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R605	211047078F	RES,CARBON,AT	47 OHM,1/2W,5%	
R606	211047078F	RES,CARBON,AT	47 OHM,1/2W,5%	
R607	211047078F	RES,CARBON,AT	47 OHM,1/2W,5%	
R608	211010078F	RES,CARBON,AT	10 OHM,1/2W,5%	
R701	211010174F	RES,CARBON,AT	100 OHM,1/6W,5%	
R702	21301227EF	RES,CARBON,AT	1.2K OHM,3W,5%,AT	
R703	21301227EF	RES,METAL OXIDE,AT	1.2K OHM,3W,5%,AT	
R704	211010275F	RES,METAL OXIDE,AT	1K OHM,1/4W,5%	
R705	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R706	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R707	211051274F	RES,CARBON,AT	5.1K OHM,1/6W,5%	
R708	2116R8078F	RES,CARBON,AT	6.8 OHM,1/2W,5%	
R709	211033274F	RES,CARBON,AT	3.3K OHM,1/6W,5%	
R710	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R711	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R712	211039374F	RES,CARBON,AT	39K OHM,1/6W,5%	
R713	2112R2075F	RES,CARBON,AT	2.2 OHM,1/4W,5%	
R714	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R715	2181R2078F	RES,FUSIBLE,AT	1.2 OHM,1/2W,5%	
R716	211022474F	RES,CARBON,AT	220K OHM,1/6W,5%	
R717	211022374F	RES,CARBON,AT	22K OHM,1/6W,5%	
R718	211010275F	RES,CARBON,AT	1K OHM,1/4W,5%	
R719	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	

Loc No.	Code No.	Type	Description	Remarks
R720	211039274F	RES,CARBON,AT	3.9K OHM,1/6W,5%	
R721	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R722	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R723	211016374F	RES,CARBON,AT	16K OHM,1/6W,5%	
R724	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R725	211015374F	RES,CARBON,AT	15K OHM,1/6W,5%	
R726	211039178F	RES,CARBON,AT	390 OHM,1/2W,5%	
R727	211047475F	RES,CARBON,AT	470K OHM,1/4W,5%	
R728	211010075F	RES,CARBON,AT	10 OHM,1/4W,5%	
R729	211027475F	RES,CARBON,AT	270K OHM,1/4W,5%	
R730	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R731	211012574F	RES,CARBON,AT	1.2M OHM,1/6W,5%	
R732	211015574F	RES,CARBON,AT	1.5M OHM,1/6W,5%	
R733	211022278F	RES,CARBON,AT	2.2K OHM,1/2W,5%	
R734	211033474F	RES,CARBON,AT	330K OHM,1/6W,5%	
R735	211033474F	RES,CARBON,AT	330K OHM,1/6W,5%	
R736	211015478F	RES,CARBON,AT	150K OHM,1/2W,5%	
R737	2181R2078F	RES,FUSIBLE,AT	1.2 OHM,1/2W,5%	
R738	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R739	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R740	2182R207J	RES,FUSIBLE,AT	2.2 OHM,1W,5%	
R741	211068474F	RES,CARBON,AT	680K OHM,1/6W,5%	
R742	211047374F	RES,CARBON,AT	47K OHM,1/6W,5%	
R743	211068274F	RES,CARBON,AT	6.8K OHM,1/6W,5%	
R744	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R746	211022474F	RES,CARBON,AT	220K OHM,1/6W,5%	
R747	211027274F	RES,CARBON,AT	2.7K OHM,1/6W,5%	
R748	211047274F	RES,CARBON,AT	4.7K OHM,1/6W,5%	
R749	211033274F	RES,CARBON,AT	3.3K OHM,1/6W,5%	
R750	211033274F	RES,CARBON,AT	3.3K OHM,1/6W,5%	
R751	211010374F	RES,CARBON,AT	10K OHM,1/6W,5%	
R752	211022274F	RES,CARBON,AT	2.2K OHM,1/6W,5%	
R753	211010174F	RES,CARBON,AT	100 OHM,1/6W,5%	
R754	211010274F	RES,CARBON,AT	1K OHM,1/6W,5%	
R755	211018374F	RES,CARBON,AT	18K OHM,1/6W,5%	
RL101	43310001	RELAY 2POLE DOUBLE	VB12MB,5A 12V DC	
RL301	43310004	RELAY 2POLE C TYPE	G6B2114P-US,5A 12V DC	
RL302	43310003	RELAY 1POLE A TYPE	G6B1114P-US,5A 12V DC	
RN501	18135472S8	RES,NETWORK,10PIN	ANR10×472J	
RN502	18135472S8	RES,NETWORK,10PIN	ANR10×472J	
RN503	18135472SE	RES,NETWORK,7PIN	ANR7×472J	
RN504	18135472S8	RES,NETWORK,10PIN	ANR10×472J	
SC701	38130001	CAP,SPARK-GAP	1KV,S-23	
SG601	38130003	SURGE ABSORBER	300V	
SG602	38130003	SURGE ABSORBER	300V	
SG603	38130003	SURGE ABSORBER	300V	
SG604	38130003	SURGE ABSORBER	300V	
SG605	38130001	CAP,SPARK-GAP	1KV,S-23	
SW101	58130001	S/W POWER	ESB99YA2V	
SW301	58230001	S/W R-SHIFT	SLS1301	
SW601	58210001	S/W TACT 3PIN	SKHV15911B	
SW602	58210001	S/W TACT 3PIN	SKHV15911B	

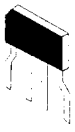
Loc No.	Code No.	Type	Description	Remarks
SW603	58210001	S/W TACT 3PIN	SKHV15911B	
SW604	58210001	S/W TACT 3PIN	SKHV15911B	
SW605	58210001	S/W TACT 3PIN	SKHV15911B	
SW606	58210001	S/W TACT 3PIN	SKHV15911B	
SW607	58210001	S/W TACT 3PIN	SKHV15911B	
SW608	58210001	S/W TACT 3PIN	SKHV15911B	
SW609	58210001	S/W TACT 3PIN	SKHV15911B	
SW610	58210001	S/W TACT 3PIN	SKHV15911B	
T101	33210001	TRANS,LINEFILTER		
T102	33210002	TRANS,SWITCHING		
T301	33210003	TRANS,PWM		
T302	33210005	TRANS,SCAN		
T303	33210006	TRANS,HDT(SCAN)		
T701	33210007	TRANS,HDT(H/V)		
T702	33210008	TRANS,REGULATION		
T703	33210009	TRANS,FBT	FSW-17A010	
TH101	38110001	POSISTOR 14 OHM	J502P53D140M290L	
TH102	38110002	THERMISTER	4.7 OHM	
TH103	38110002	THERMISTER	4.7 OHM	
VR101	221050173T	V/R VERT RT	500 OHM W/O HANDLE	
VR701	221020373S	V/R HORI RT	20K OHM W/O HANDLE	
XT401	311000100Z	CRYSTAL,AT	8MHz	
XT501	311000100Z	CRYSTAL,AT	8MHz	
	34219001	COIL,CHOKE		
	38250001	17INCH D-FOCUS	M41LDL27XX04(QW/V/D2)	
	48210001	SIGNAL CABLE	15PIN(2LAYER)-15PIN(3LAYER)	
	482110001	POWER CORD 115V		
	39214201AA	PCB,MAIN		
	39214202AA	PCB,VIDEO,DOUBLE SIDE		
	39214204AA	PCB,SOCKET		
	39214203AA	PCB,FRONT		
	46155142A1	MICOM,42PIN,SDIP(SOCKET)		
	49210007AA	CRT GND BRAID WIRE		
	49210008AA	TILT WIRE,3PIN,STRIP WIRE		
	74160001AA	201*3.6*1.27T(DACT-200SA)		

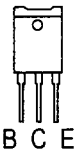
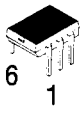
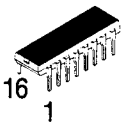
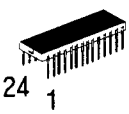
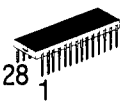
11-6 Semiconductor Lead Identification

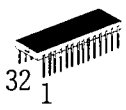
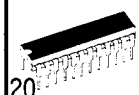
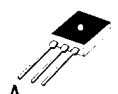
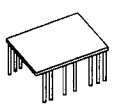
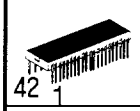
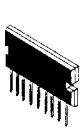
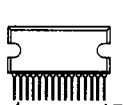
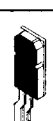
PARTS	TYPE NO.	REF NO.
	1N4148	D101,D116,D301,D302,D309, D310,D311,D314,D315,D316, D317,D318,D324,D328,D501, D502,D503,D504,D505,D506, D507,D508,D708,D709,D710, D711,D716,D717,D719,D720, D729/D401R,D401G,D401B, D401,D402R,D402G,D402B, D403R,D403G,D403B,D404R, D404G,D40B,D413,D416,D417, D418,D419,D420,D421,D422, D423
	ZEN 12V	D203,D321,D323
	ZEN 6.2V	D114,D730
	ZEN 5.1V	D112,D715/D406,D408
	ZEN 36V	D707
	ZEN 2.7V	D721
	ZEN 43V	D107
	ISS244	D410R,D410G,D410B, D411R,D411G,D411B, D412R,D412G,D412B
	KBL06	D102
	REC,UF5404	D104,D105,D106,D108,D109, D111,D113,D320
	REC,UF4004	D103,D110,D303,D322,D706, D718,D726
	REC,UF4007	D722,D723,D727,D728
	REC,1N4937	D312,D313,D319,D327/D414, D415
	REC,RGP02-12	D704
	UF5408	D724,D725
	1N4002	D305,D306,D307,D326,D701, D702,D703,D713,D714

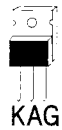
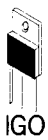
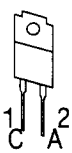
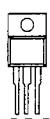
PARTS	TYPE NO.	REF NO.
	KSC945	Q102,Q103,Q106,Q202,Q301, Q303,Q305,Q316,Q318,Q319, Q320,Q321,Q322,Q324,Q706, Q714,Q715/Q401,Q402,Q403, Q404,Q405,Q406,Q408,Q409, Q410
	KSC1008	Q311,Q312
	2N5551 2N5770 2N6520	Q101,Q105 Q404R,Q404G,Q404B Q710
	KSP2222A KSP44	Q704 Q707,Q708,Q712,Q713
	KSA733	Q302,Q323,Q703,Q709/Q407, Q411
	KSC2331	Q107,Q201
	KSA1013	Q104
	BU2525AF	Q702
	4N35	IC102
	LM358	1C702
	24LC21/P	IC401
	TL494	IC701
	LM324	IC302
	STV9422	IC405
	LM2283	IC404

11-6 Semiconductor Lead Identification

PARTS	TYPE NO.	REF NO.
	1N4148	D101,D116,D301,D302,D309, D310,D311,D314,D315,D316, D317,D318,D324,D328,D501, D502,D503,D504,D505,D506, D507,D508,D708,D709,D710, D711,D716,D717,D719,D720, D729/D401R,D401G,D401B, D401,D402R,D402G,D402B, D403R,D403G,D403B,D404R, D404G,D40B,D413,D416,D417, D418,D419,D420,D421,D422, D423
	ZEN 12V	D203,D321,D323
	ZEN 6.2V	D114,D730
	ZEN 5.1V	D112,D715/D406,D408
	ZEN 36V	D707
	ZEN 2.7V	D721
	ZEN 43V	D107
	ISS244	D410R,D410G,D410B, D411R,D411G,D411B, D412R,D412G,D412B
	KBL06	D102
	REC,UF5404	D104,D105,D106,D108,D109, D111,D113,D320
	REC,UF4004	D103,D110,D303,D322,D706, D718,D726
	REC,UF4007	D722,D723,D727,D728
	REC,1N4937	D312,D313,D319,D327/D414, D415
	REC,RGP02-12	D704
	UF5408	D724,D725
	1N4002	D305,D306,D307,D326,D701, D702,D703,D713,D714

PARTS	TYPE NO.	REF NO.
	KSC945	Q102,Q103,Q106,Q202,Q301, Q303,Q305,Q316,Q318,Q319, Q320,Q321,Q322,Q324,Q706, Q714,Q715/Q401,Q402,Q403, Q404,Q405,Q406,Q408,Q409, Q410
	KSC1008	Q311,Q312
	2N5551 2N5770 2N6520	Q101,Q105 Q404R,Q404G,Q404B Q710
	KSP2222A KSP44	Q704 Q707,Q708,Q712,Q713
	KSA733	Q302,Q323,Q703,Q709/Q407, Q411
	KSC2331	Q107,Q201
	KSA1013	Q104
	BU2525AF	Q702
	4N35	IC102
	LM358	1C702
	24LC21/P	IC401
	TL494	IC701
	LM324	IC302
	STV9422	IC405
	LM2283	IC404

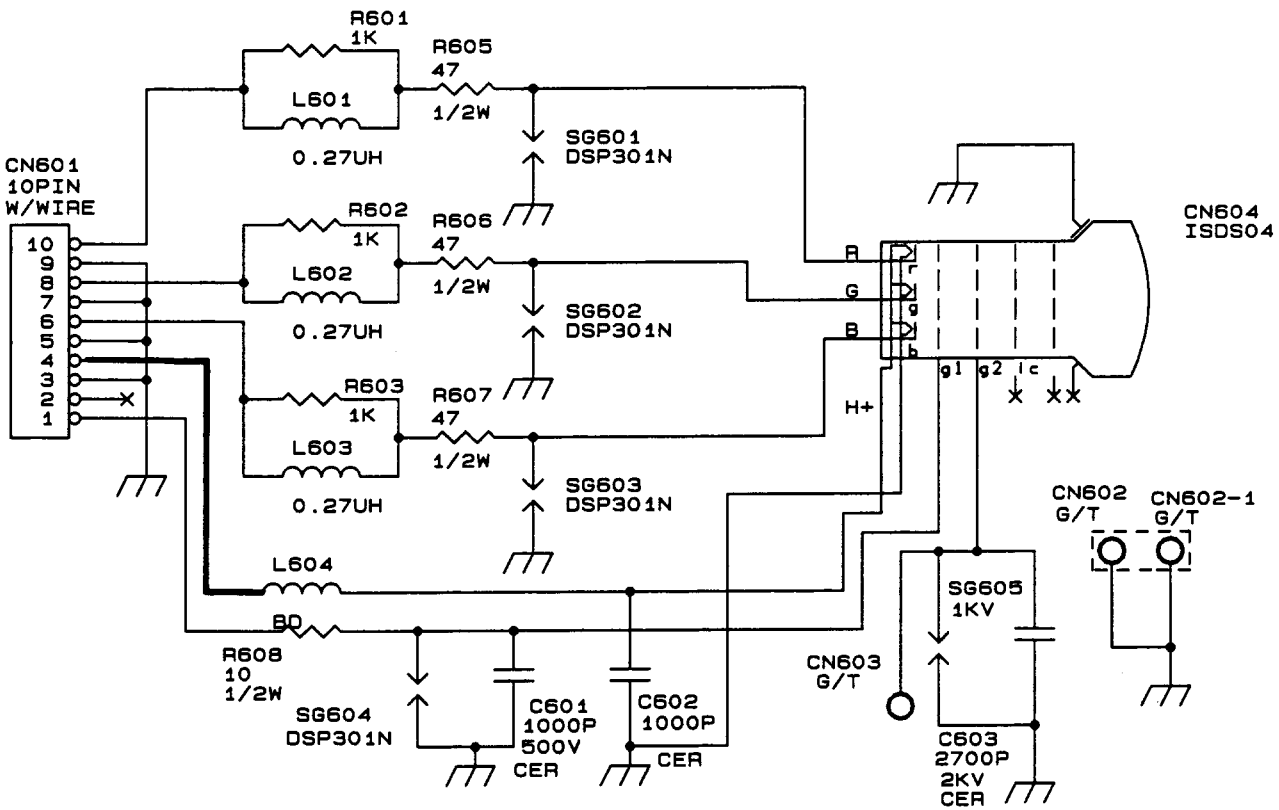
PARTS	TYPE NO.	REF NO.
	TDA4855 M52348	IC301 IC402
	M52347SP	IC403
	KA317	IC101
	B17AL	HIC401
	ST6371	IC501
	S431	IC103
	KIA7042P	IC503/IC407
	KSD882	Q309
	KSB772	Q310
	TDA8351	IC201
	VPS10S	IC406
	SMR62000	IC105
	MJW16212	Q308

PARTS	TYPE NO.	REF NO.
	S1206DH	Q108
	IRF740 IRF640 IRF610	Q705 Q313,Q314,Q315,Q317 Q306,Q701
	7805	IC104
	BY359F	D308,D705
	2SK2341	Q304

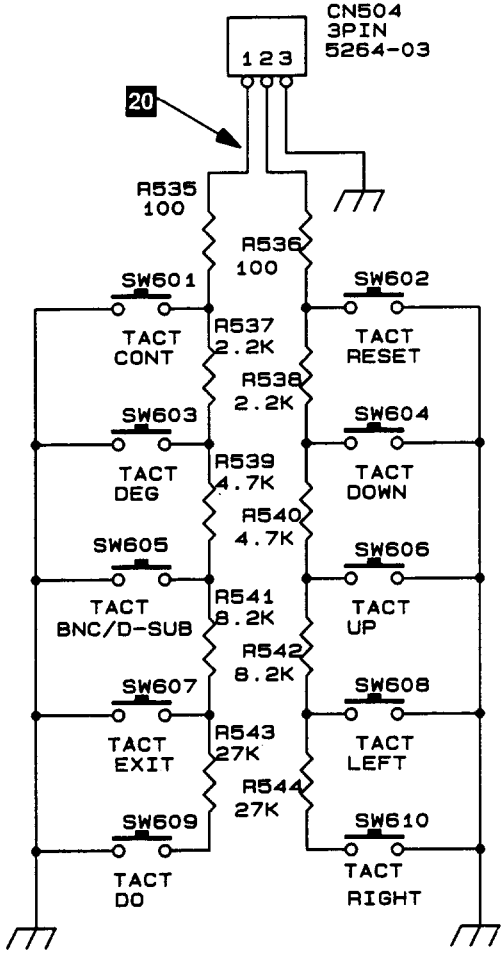
12. Schematic Diagrams

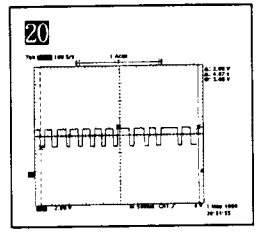
12-1 CRT Board Schematic Diagrams

——————— POWER LINE



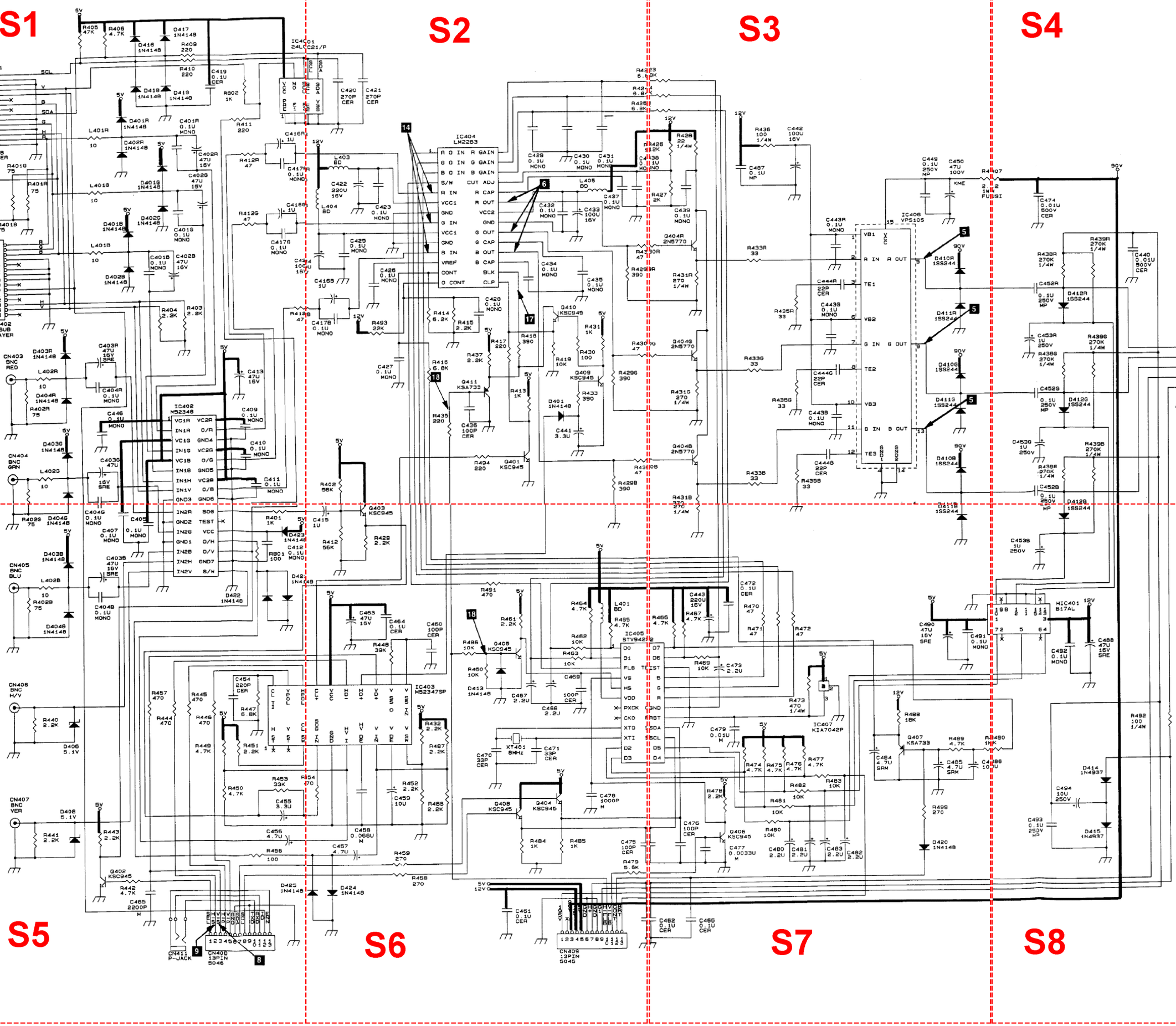
POWER LINE

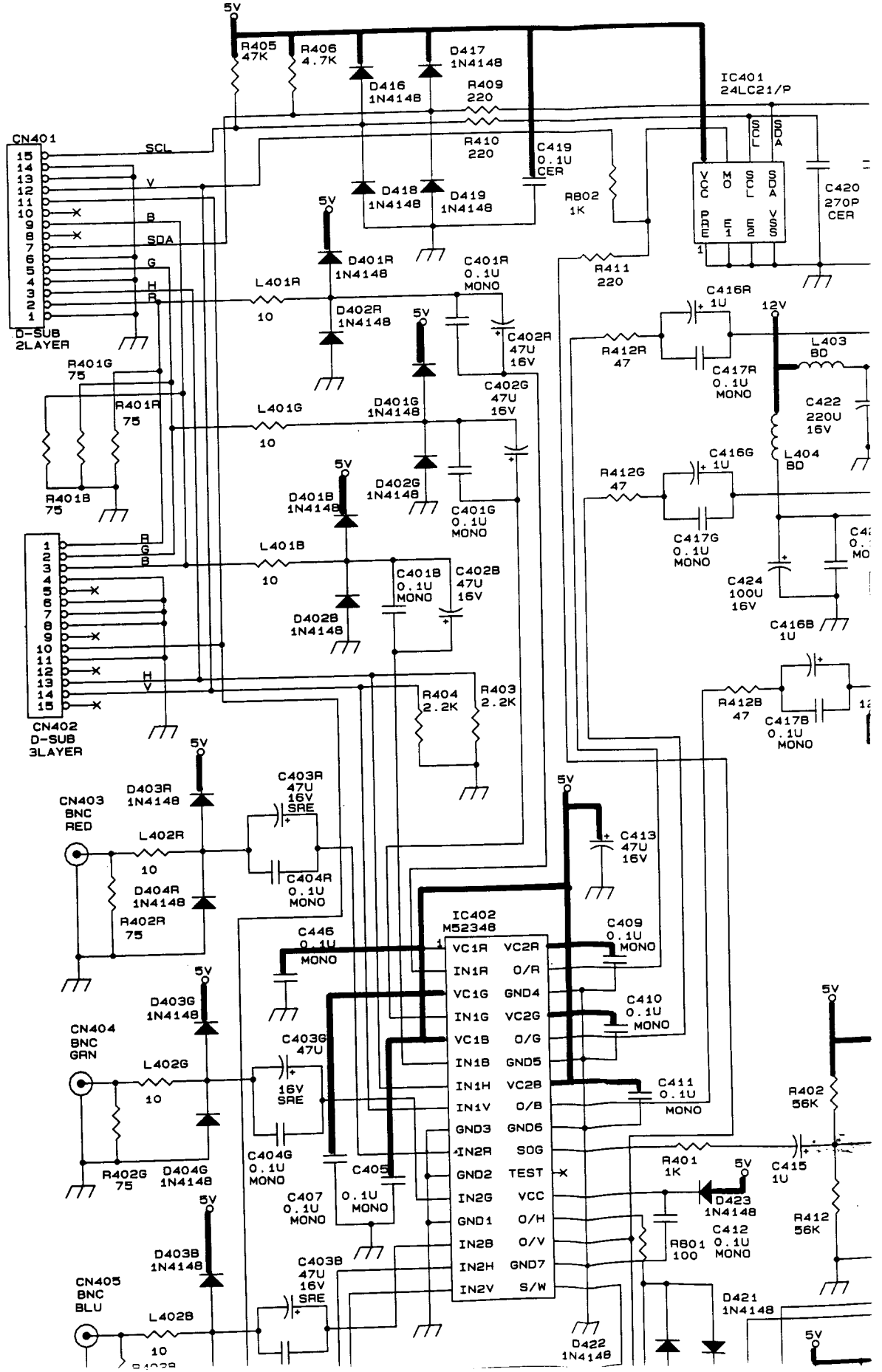

CN504
3PIN
5264-03
1 2 3
20
R535
100
R536
100
SW601
TACT
CONT
SW602
TACT
RESET
R537
2.2K
R538
2.2K
SW603
TACT
DEG
SW604
TACT
DOWN
R539
4.7K
R540
4.7K
SW605
TACT
BNC/D-SUB
SW606
TACT
UP
R541
8.2K
R542
8.2K
SW607
TACT
EXIT
SW608
TACT
LEFT
R543
27K
R544
27K
SW609
TACT
DO
SW610
TACT
RIGHT

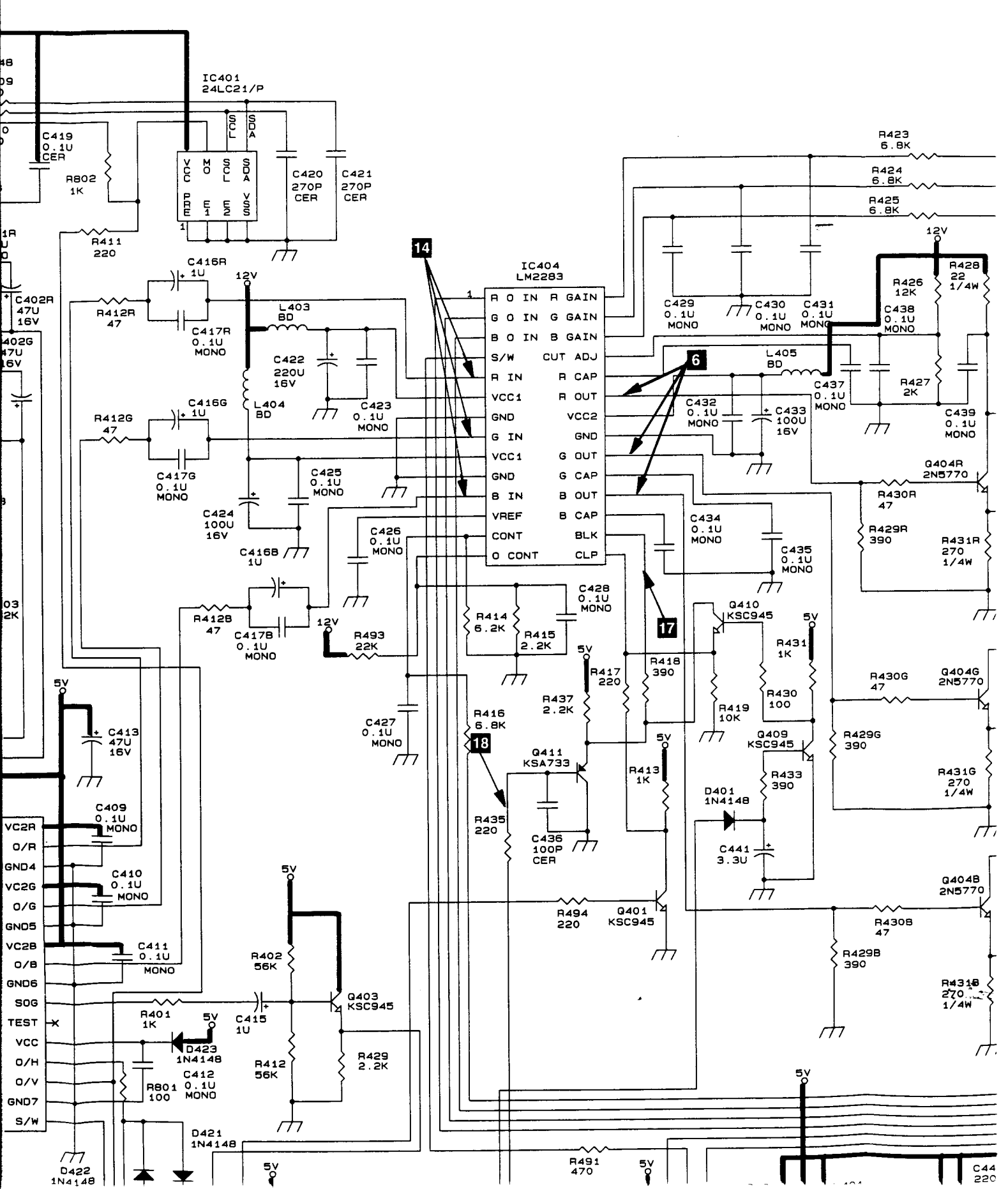

20

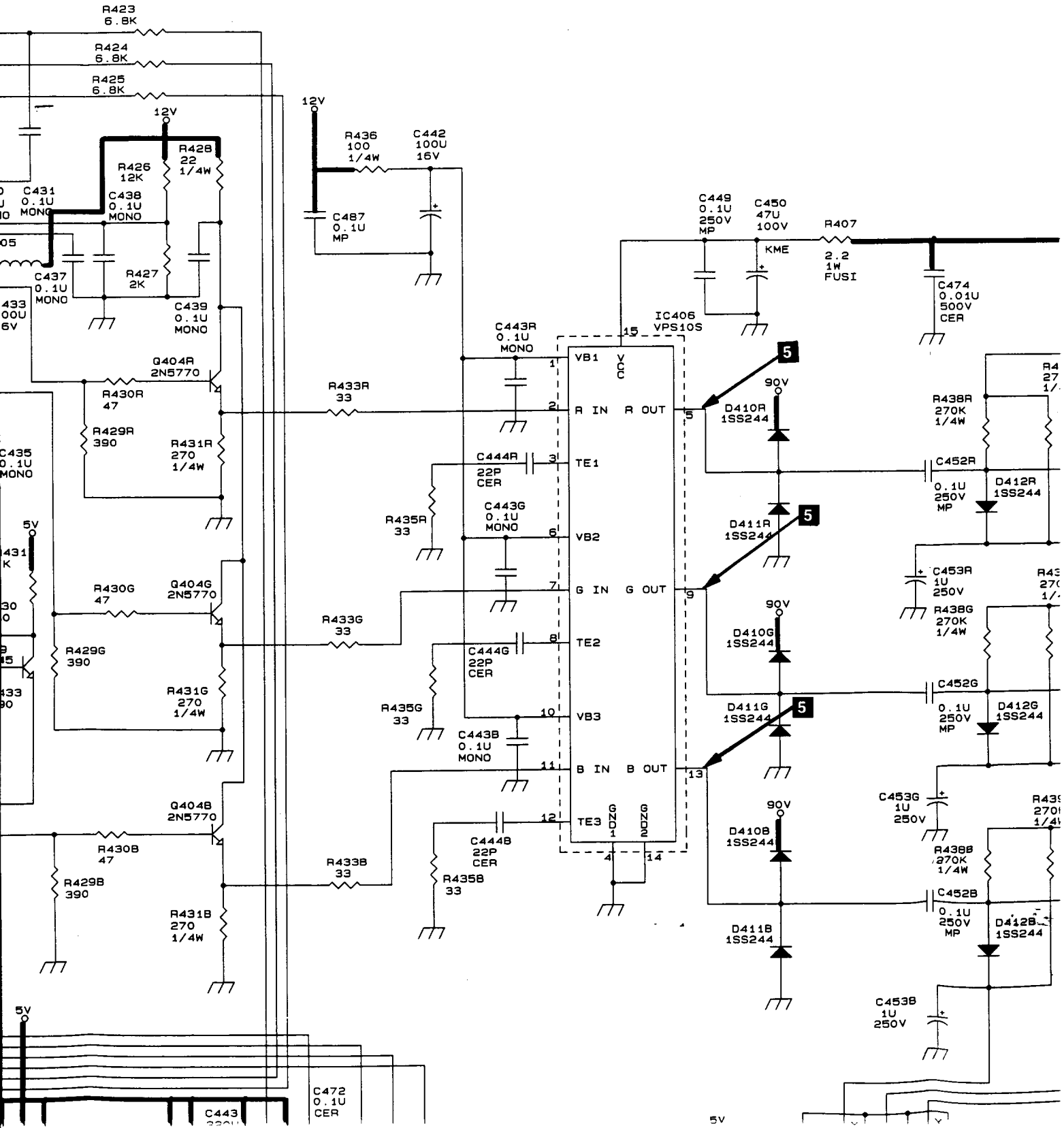
S1 S2 S3 S4

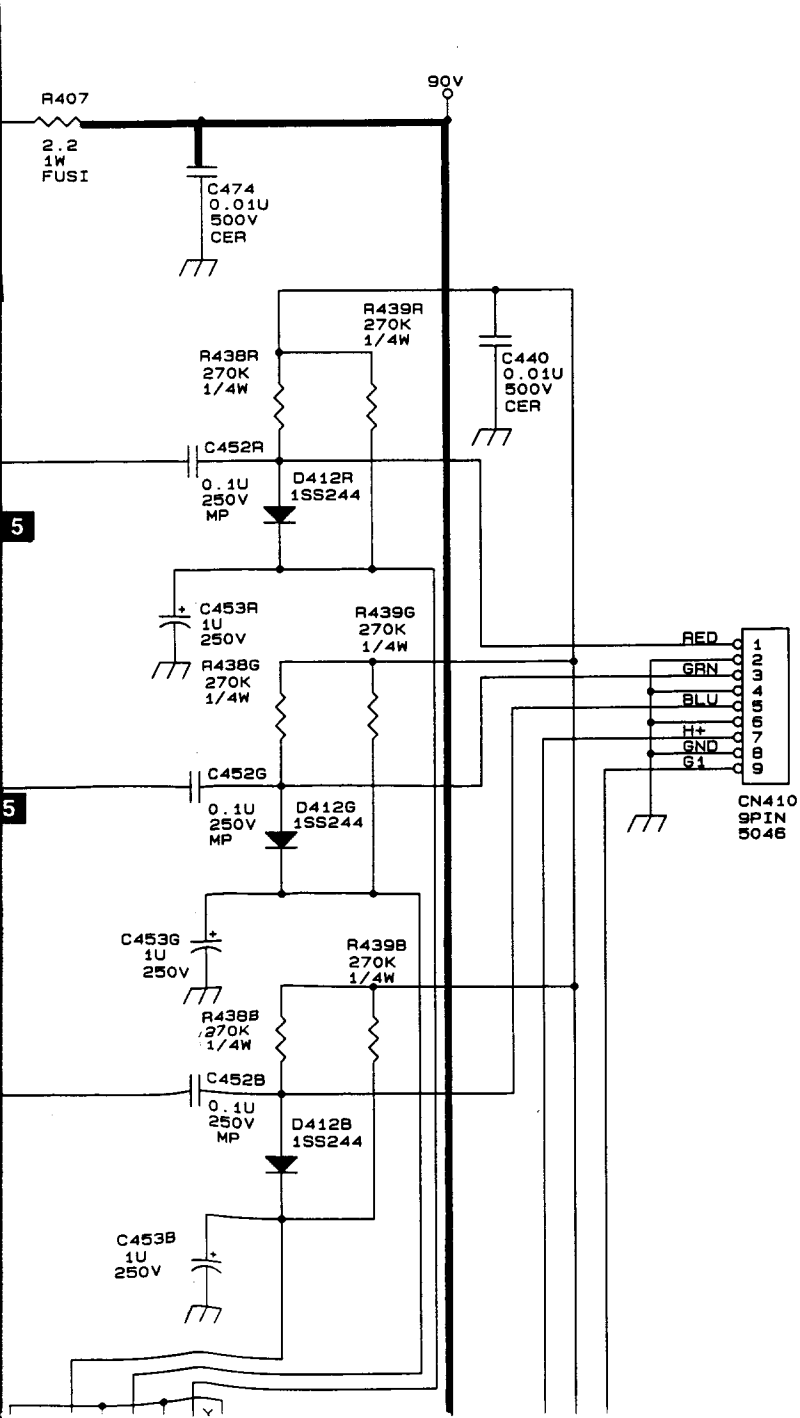
S5 S6 S7 S8

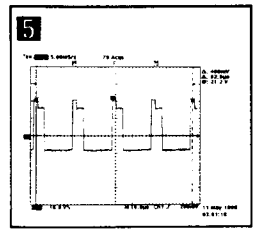



5V
R405 47K
R406 4.7K
D416 1N4148
D417 1N4148
R409 220
R410 220
C419 0.1U CER
D418 1N4148
D419 1N4148
R802 1K
IC401 24LC21/P
C420 270P CER
CN401
SCL
V
B
SDA
G
H
R
D-SUB 2LAYER
D401R 1N4148
L401R
10
D402R 1N4148
C401R 0.1U MONO
C402R 47U 16V
R411 220
C416R 1U
12V
R412R 47
C417R 0.1U MONO
L403 BD
C422 220U 16V
L404 BD
R401G 75
R401R 75
R401B 75
L401G
10
D401G 1N4148
D402G 1N4148
C402G 47U 16V
C401G 0.1U MONO
C416G 1U
R412G 47
C417G 0.1U MONO
C424 100U 16V
C416B 1U
D401B 1N4148
L401B
10
D402B 1N4148
C401B 0.1U MONO
C402B 47U 16V
R412B 47
C417B 0.1U MONO
CN402 D-SUB 3LAYER
R404 2.2K
R403 2.2K
CN403 BNC RED
D403R 1N4148
C403R 47U 16V SRE
L402R
10
D404R 1N4148
R402R 75
C404R 0.1U MONO
C413 47U 16V
IC402 M52348
C446 0.1U MONO
C409 0.1U MONO
C410 0.1U MONO
C411 0.1U MONO
VC1R VC2R
IN1R O/R
VC1G GND4
IN1G VC2G
VC1B O/G
IN1B GND5
IN1H VC2B
IN1V O/B
GND3 GND6
IN2R SOG
GND2 TEST
IN2G VCC
GND1 O/H
IN2B O/V
IN2H GND7
IN2V S/W
CN404 BNC GRN
D403G 1N4148
C403G 47U 16V SRE
L402G
10
R402G 75
D404G 1N4148
C404G 0.1U MONO
C405 0.1U MONO
C407 0.1U MONO
R402 56K
C415 1U
R401 1K
D423 1N4148
R801 100
C412 0.1U MONO
R412 56K
CN405 BNC BLU
D403B 1N4148
C403B 47U 16V SRE
L402B
10
D422 1N4148
D421 1N4148


IC401
24LC21/P
SCL
SDA
VCC
NC
NC
VSS
C419
0.1U
CER
R802
1K
C420
270P
CER
C421
270P
CER
R411
220
IC404
LM2283
R O IN
G O IN
B O IN
S/W
R IN
VCC1
GND
G IN
VCC1
GND
B IN
VREF
CONT
O CONT
R GAIN
G GAIN
B GAIN
CUT ADJ
R CAP
R OUT
VCC2
GND
G OUT
G CAP
B OUT
B CAP
BLK
CLP
R423
6.8K
R424
6.8K
R425
6.8K
12V
R428
22
1/4W
R426
12K
C429
0.1U
MONO
C430
0.1U
MONO
C431
0.1U
MONO
C438
0.1U
MONO
L405
BD
C437
0.1U
MONO
R427
2K
C439
0.1U
MONO
C432
0.1U
MONO
C433
100U
16V
C434
0.1U
MONO
C435
0.1U
MONO
Q404R
2N5770
R430R
47
R429R
390
R431R
270
1/4W
C416R
1U
R412R
47
C417R
0.1U
MONO
L403
BD
C422
220U
16V
C423
0.1U
MONO
L404
BD
C416G
1U
R412G
47
C417G
0.1U
MONO
C425
0.1U
MONO
C424
100U
16V
C416B
1U
C426
0.1U
MONO
R412B
47
C417B
0.1U
MONO
R493
22K
C428
0.1U
MONO
R414
6.2K
R415
2.2K
Q410
KSC945
R431
1K
R430
100
R419
10K
R418
390
R417
220
R437
2.2K
C427
0.1U
MONO
R416
6.8K
Q411
KSA733
R435
220
C436
100P
CER
R413
1K
D401
1N4148
C441
3.3U
R430G
47
Q404G
2N5770
R429G
390
R431G
270
1/4W
Q409
KSC945
R433
390
Q404B
2N5770
R430B
47
R429B
390
R431B
270
1/4W
R494
220
Q401
KSC945
C413
47U
16V
C409
0.1U
MONO
C410
0.1U
MONO
C411
0.1U
MONO
VC2R
O/R
GND4
VC2G
O/G
GND5
VC2B
O/B
GND6
SOG
TEST
VCC
O/H
O/V
GND7
S/W
R402
56K
Q403
KSC945
R401
1K
C415
1U
D423
1N4148
C412
0.1U
MONO
R801
100
R412
56K
R429
2.2K
D421
1N4148
D422
1N4148
R491
470
5V
14
6
17
18


R423 6.8K
R424 6.8K
R425 6.8K
12V
R426 12K
R428 22 1/4W
C431 0.1U MONO
C438 0.1U MONO
C437 0.1U MONO
R427 2K
C439 0.1U MONO
Q404R 2N5770
R430R 47
R429R 390
R431R 270 1/4W
5V
Q404G 2N5770
R430G 47
R429G 390
R431G 270 1/4W
Q404B 2N5770
R430B 47
R429B 390
R431B 270 1/4W
C472 0.1U CER
C443
12V
R436 100 1/4W
C442 100U 16V
C487 0.1U MP
C449 0.1U 250V MP
C450 47U 100V
KME
R407 2.2 1W FUSI
C474 0.01U 500V CER
IC406 VPS10S
C443R 0.1U MONO
R433R 33
C444R 22P CER
R435R 33
C443G 0.1U MONO
R433G 33
C444G 22P CER
R435G 33
C443B 0.1U MONO
R433B 33
C444B 22P CER
R435B 33
VB1
VCC
R IN
R OUT
TE1
VB2
G IN
G OUT
TE2
VB3
B IN
B OUT
TE3
GND1
GND2
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
90V
D410R 1SS244
D411R 1SS244
D410G 1SS244
D411G 1SS244
D410B 1SS244
D411B 1SS244
R438R 270K 1/4W
C452R 0.1U 250V MP
D412R 1SS244
C453R 1U 250V
R438G 270K 1/4W
C452G 0.1U 250V MP
D412G 1SS244
C453G 1U 250V
R438B 270K 1/4W
C452B 0.1U 250V MP
D412B 1SS244
C453B 1U 250V
5V


90V
R407
2.2
1W
FUSI
C474
0.01U
500V
CER
R439R
270K
1/4W
R438R
270K
1/4W
C440
0.01U
500V
CER
C452R
0.1U
250V
MP
D412R
1SS244
5
C453R
1U
250V
R439G
270K
1/4W
R438G
270K
1/4W
C452G
0.1U
250V
MP
D412G
1SS244
5
C453G
1U
250V
R439B
270K
1/4W
R438B
270K
1/4W
C452B
0.1U
250V
MP
D412B
1SS244
C453B
1U
250V
RED
GRN
BLU
H+
GND
G1
1
2
3
4
5
6
7
8
9
CN410
9PIN
5046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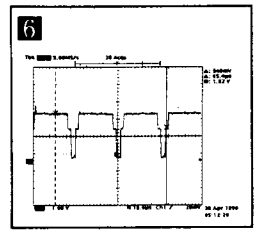
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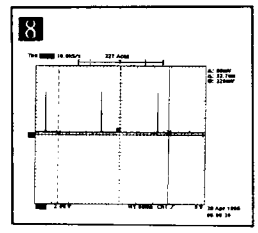
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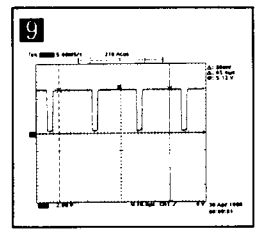
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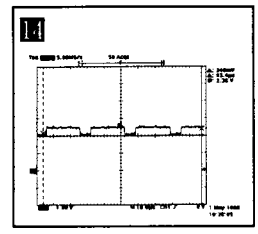
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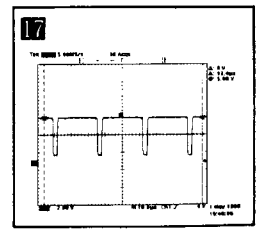
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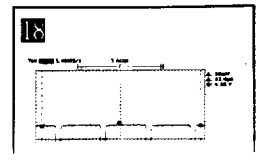
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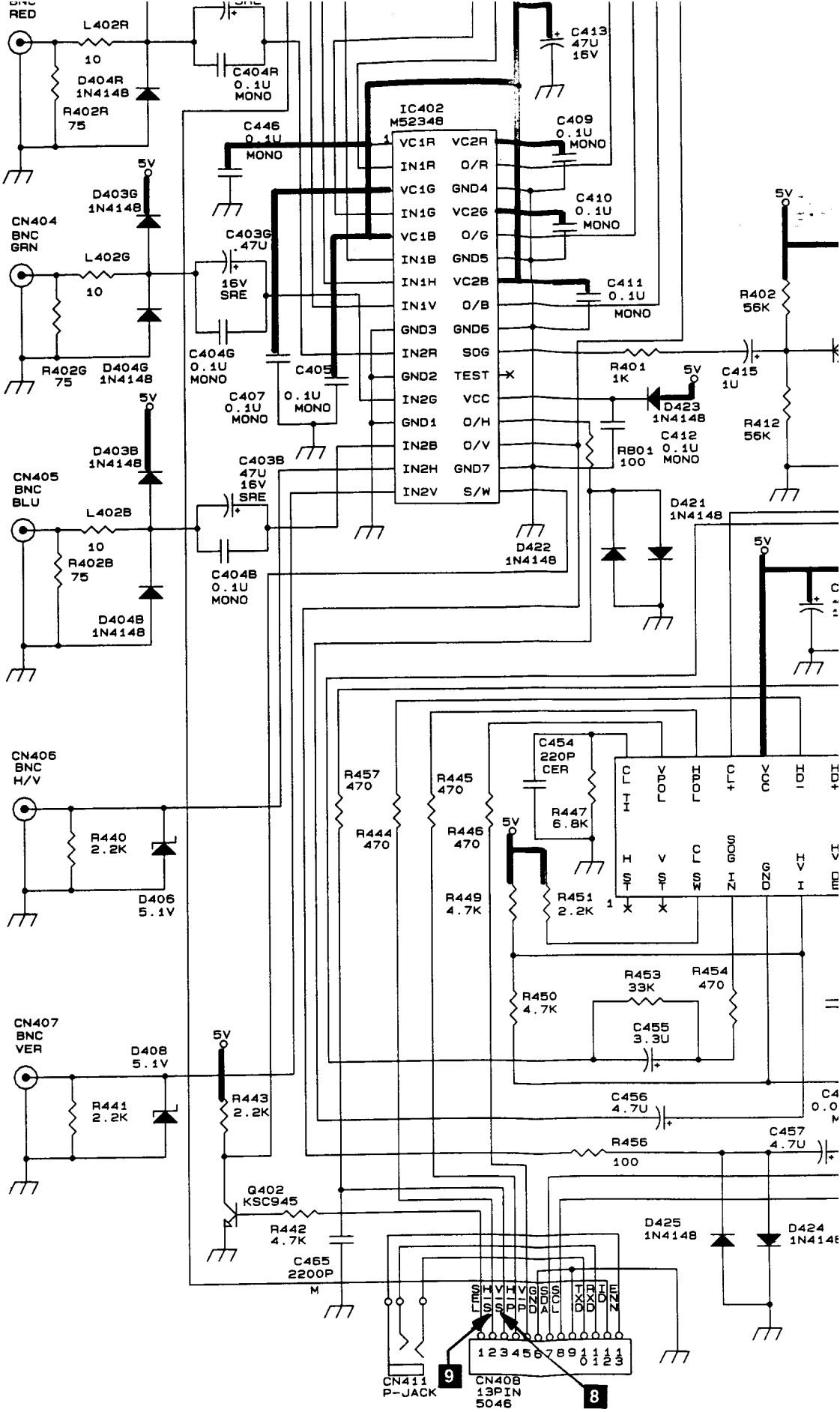
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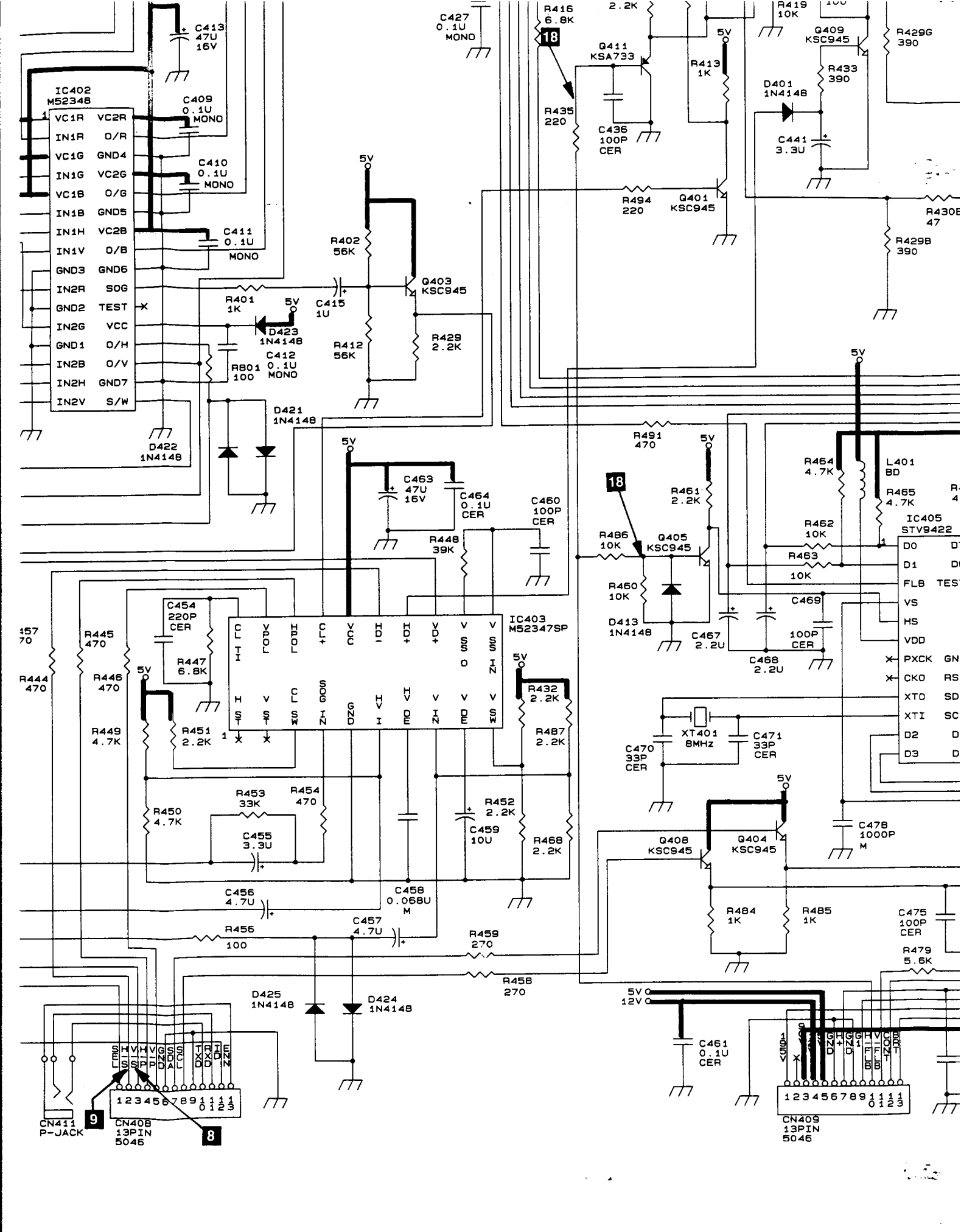
CN405 BNC BLU
CN406 BNC H/V
CN407 BNC VER
L402R
L402G
L402B
R402R 75
R402G 75
R402B 75
D404R 1N4148
D404G 1N4148
D404B 1N4148
D403G 1N4148
D403B 1N4148
5V
C404R 0.1U MONO
C404G 0.1U MONO
C404B 0.1U MONO
C403G .47U 16V SRE
C403B 47U 16V SRE
C405 0.1U MONO
C407 0.1U MONO
C446 0.1U MONO
IC402 M52348
VC1R VC2R
IN1R O/R
VC1G GND4
IN1G VC2G
VC1B O/G
IN1B GND5
IN1H VC2B
IN1V O/B
GND3 GND6
IN2R SOG
GND2 TEST
IN2G VCC
GND1 O/H
IN2B O/V
IN2H GND7
IN2V S/W
C413 47U 16V
C409 0.1U MONO
C410 0.1U MONO
C411 0.1U MONO
C412 0.1U MONO
R401 1K
RB01 100
D423 1N4148
D422 1N4148
D421 1N4148
R402 56K
R412 56K
C415 1U
R440 2.2K
D406 5.1V
R441 2.2K
D408 5.1V
R443 2.2K
R457 470
R444 470
R445 470
R446 470
C454 220P CER
R447 6.8K
R449 4.7K
R451 2.2K
R450 4.7K
R453 33K
R454 470
C455 3.3U
C456 4.7U
C457 4.7U
R456 100
Q402 KSC945
R442 4.7K
C465 2200P M
D425 1N4148
D424 1N4148
CN411 P-JACK
CN408 13PIN 5046
9
8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M52348
VC1R
VC2R
IN1R
O/R
VC1G
GND4
IN1G
VC2G
VC1B
O/G
IN1B
GND5
IN1H
VC2B
IN1V
O/B
GND3
GND6
IN2R
SOG
GND2
TEST
IN2G
VCC
GND1
O/H
IN2B
O/V
IN2H
GND7
IN2V
S/W
C413 47U 16V
C409 0.1U MONO
C410 0.1U MONO
C411 0.1U MONO
C412 0.1U MONO
R801 100
D422 1N4148
D421 1N4148
R401 1K
D423 1N4148
C415 1U
R402 56K
R412 56K
Q403 KSC945
R429 2.2K
C427 0.1U MONO
R416 6.8K
18
R435 220
Q411 KSA733
C436 100P CER
R494 220
Q401 KSC945
R413 1K
R419 10K
Q409 KSC945
R429G 390
R433 390
D401 1N4148
C441 3.3U
R430E 47
R429B 390
R491 470
R461 2.2K
Q405 KSC945
R486 10K
R460 10K
D413 1N4148
C467 2.2U
C468 2.2U
C469 100P CER
R464 4.7K
L401 BD
R465 4.7K
R462 10K
R463 10K
IC405
STV9422
D0
D1
FLB
VS
HS
VDD
PXCK
CKO
XTO
XTI
D2
D3
C463 47U 16V
C464 0.1U CER
C460 100P CER
R448 39K
IC403
M52347SP
C454 220P CER
R447 6.8K
R445 470
R446 470
R444 470
R449 4.7K
R451 2.2K
R432 2.2K
R487 2.2K
R453 33K
R454 470
R450 4.7K
C455 3.3U
R452 2.2K
C459 10U
R468 2.2K
C456 4.7U
C458 0.068U M
C457 4.7U
R456 100
R459 270
R458 270
XT401 8MHz
C470 33P CER
C471 33P CER
Q408 KSC945
Q404 KSC945
C478 1000P M
R484 1K
R485 1K
C475 100P CER
R479 5.6K
D425 1N4148
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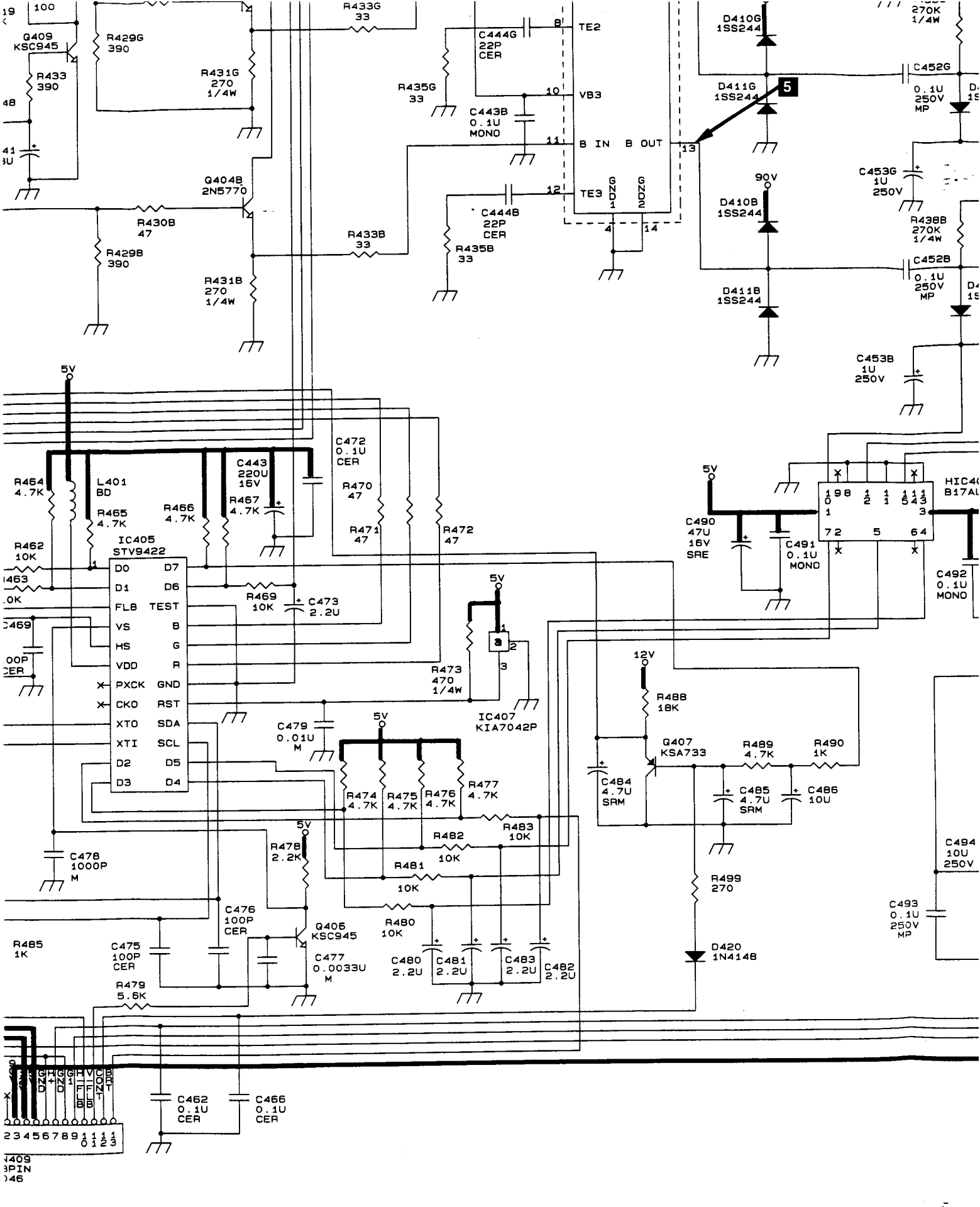
C461 0.1U CER
5V
12V
CN411 P-JACK
CN408 13PIN 5046
CN409 13PIN 5046
9
8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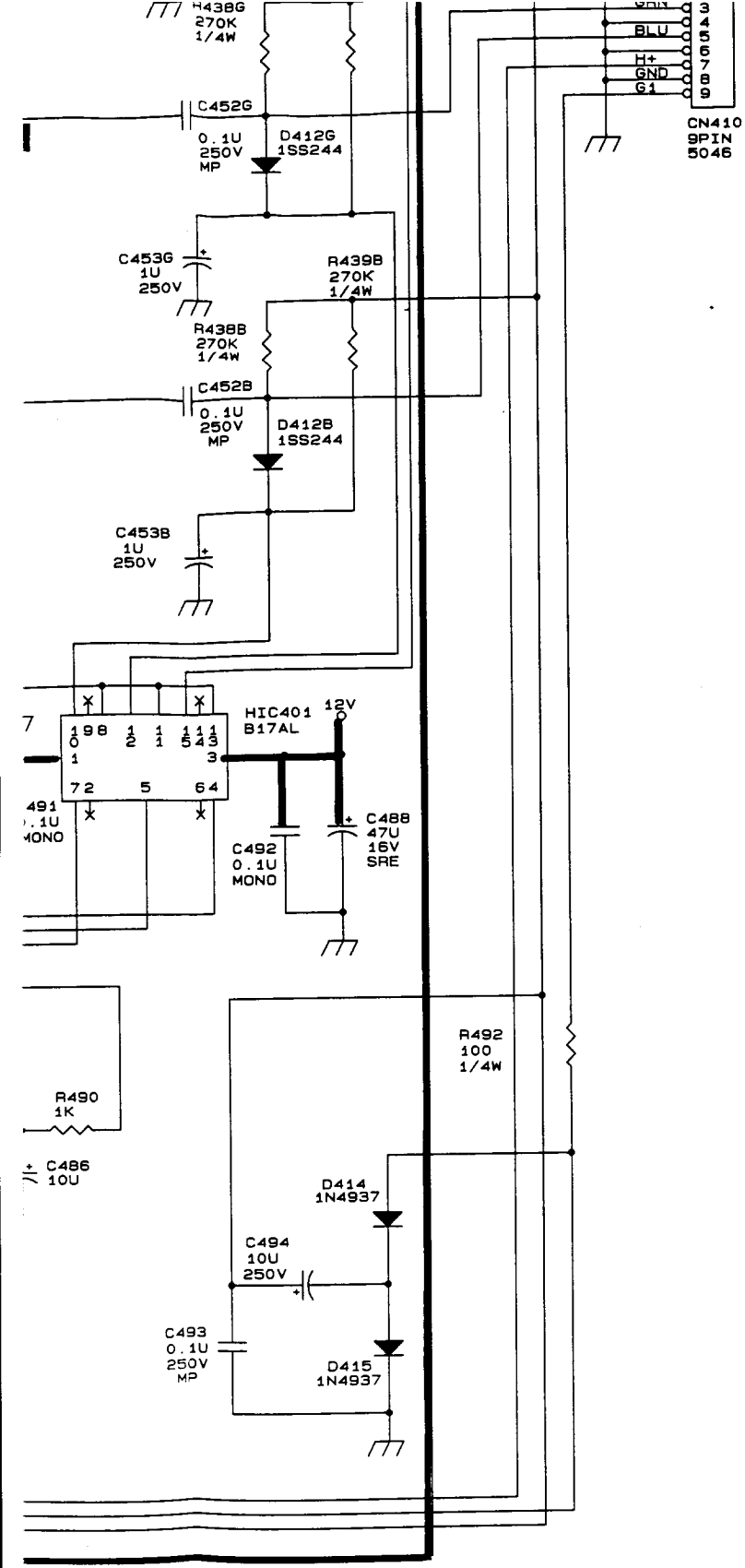
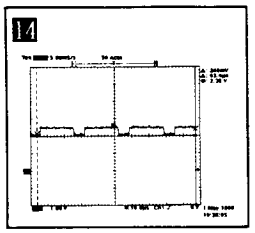
KSC945
R433
390
R429G
390
R431G
270
1/4W
R433G
33
C444G
22P
CER
TE2
R435G
33
C443B
0.1U
MONO
VB3
B IN
B OUT
TE3
GND1
GND2
C444B
22P
CER
R435B
33
Q404B
2N5770
R430B
47
R429B
390
R431B
270
1/4W
R433B
33
D410G
1SS244
D411G
1SS244
D410B
1SS244
D411B
1SS244
90V
C452G
0.1U
250V
MP
C453G
1U
250V
R438B
270K
1/4W
C452B
0.1U
250V
MP
C453B
1U
250V
5V
R464
4.7K
L401
BD
R465
4.7K
R466
4.7K
C443
220U
16V
R467
4.7K
C472
0.1U
CER
R470
47
R471
47
R472
47
IC405
STV9422
D0
D1
FLB
VS
HS
VDD
PXCK
CKO
XTO
XTI
D2
D3
D7
D6
TEST
B
G
R
GND
RST
SDA
SCL
D5
D4
R462
10K
R469
10K
C473
2.2U
R473
470
1/4W
IC407
KIA7042P
C479
0.01U
M
R474
4.7K
R475
4.7K
R476
4.7K
R477
4.7K
R478
2.2K
R483
10K
R482
10K
R481
10K
R480
10K
C478
1000P
M
C476
100P
CER
C475
100P
CER
C477
0.0033U
M
Q406
KSC945
R485
1K
R479
5.6K
C480
2.2U
C481
2.2U
C483
2.2U
C482
2.2U
C462
0.1U
CER
C466
0.1U
CER
12V
R488
18K
Q407
KSA733
R489
4.7K
R490
1K
C484
4.7U
SRM
C485
4.7U
SRM
C486
10U
R499
270
D420
1N4148
C490
47U
16V
SRE
C491
0.1U
MONO
C492
0.1U
MONO
C494
10U
250V
C493
0.1U
250V
MP
HIC40
B17AL


R438G
270K
1/4W
C452G
0.1U
250V
MP
D412G
1SS244
C453G
1U
250V
R439B
270K
1/4W
R438B
270K
1/4W
C452B
0.1U
250V
MP
D412B
1SS244
C453B
1U
250V
BLU
H+
GND
G1
3
4
5
6
7
8
9
CN410
9PIN
5046
HIC401
B17AL
12V
C488
47U
16V
SRE
C492
0.1U
MONO
R490
1K
C486
10U
R492
100
1/4W
D414
1N4937
C494
10U
250V
C493
0.1U
250V
MP
D415
1N4937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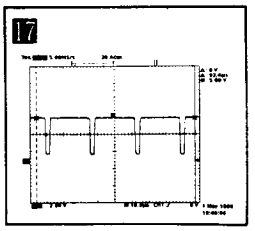
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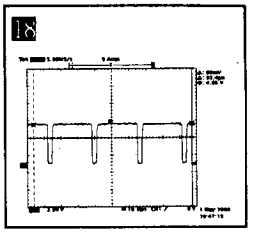
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S1

S2

S3

S4

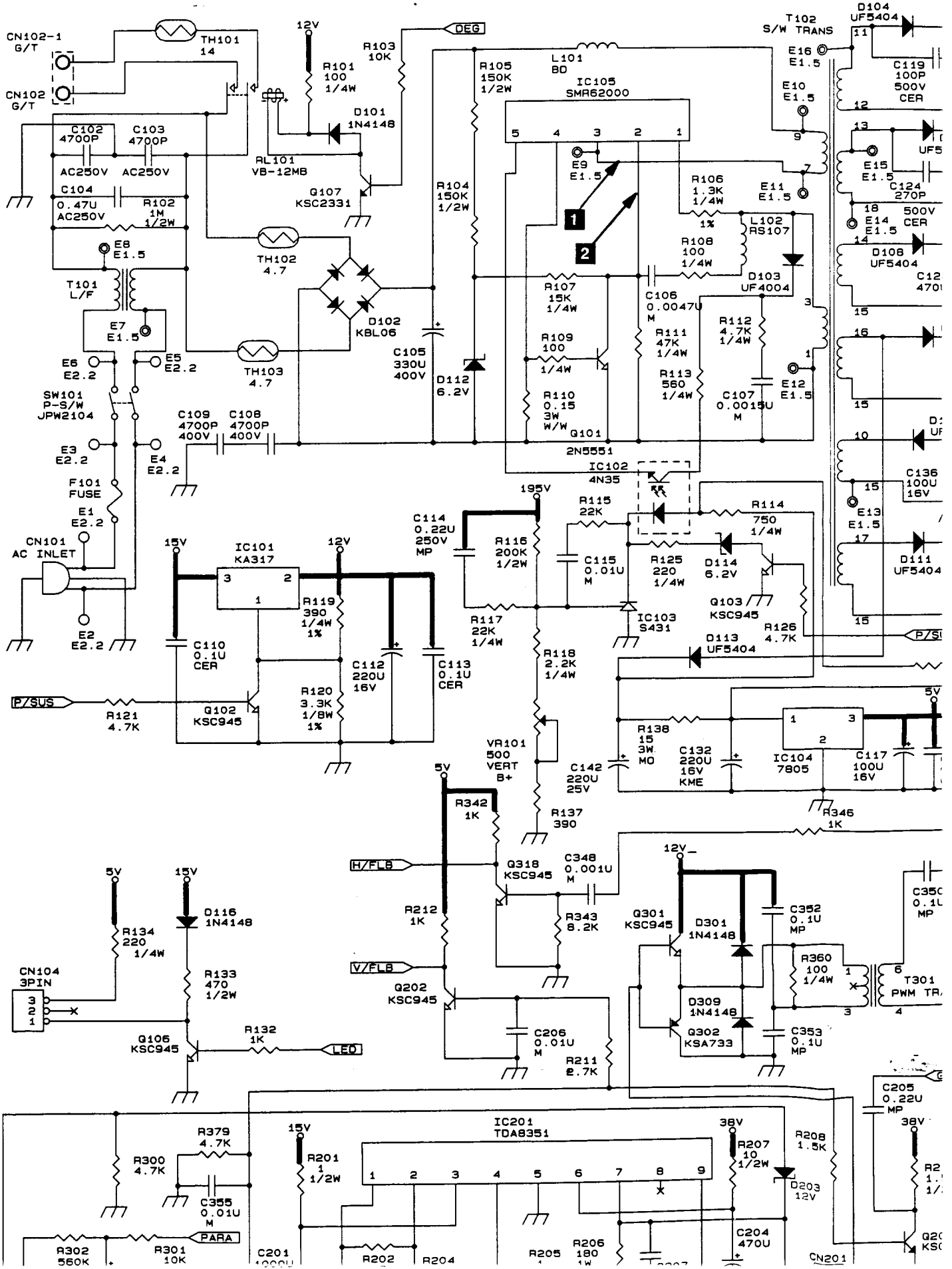
S5

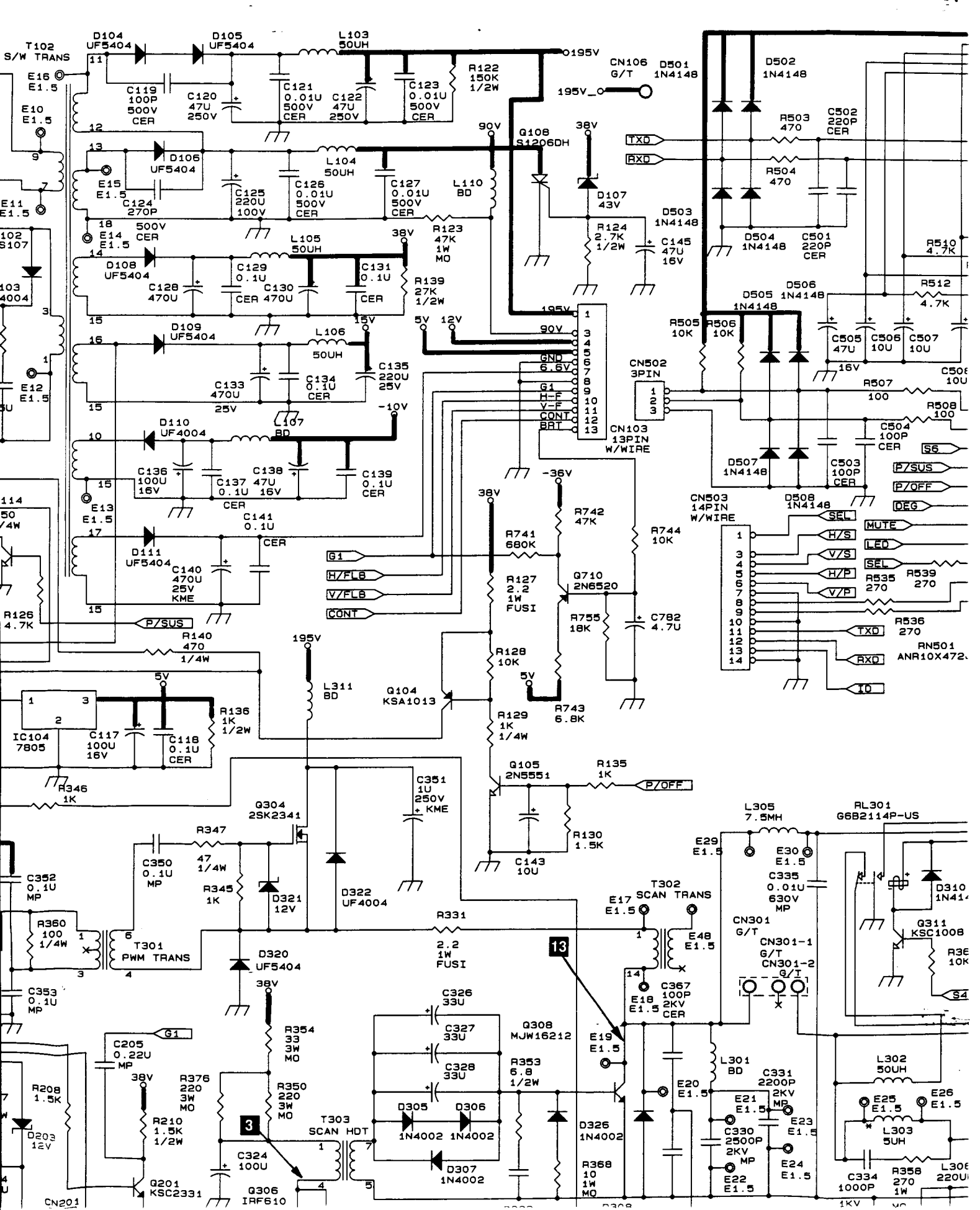
S6

S7

S8

12-3 Main Board Schematic Diagram

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S/W TRANS
D104
UF5404
D105
UF5404
L103
50UH
195V
CN106
G/T
D501
1N4148
D502
1N4148
R122
150K
1/2W
C119
100P
500V
CER
C120
47U
250V
C121
0.01U
500V
CER
C122
47U
250V
C123
0.01U
500V
CER
90V
Q108
S1206DH
38V
D107
43V
R124
2.7K
1/2W
C145
47U
16V
D106
UF5404
L104
50UH
C124
270P
500V
CER
C125
220U
100V
C126
0.01U
500V
CER
C127
0.01U
500V
CER
L110
BD
R123
47K
1W
MO
L105
50UH
D108
UF5404
C128
470U
C129
0.1U
CER
C130
470U
C131
0.1U
CER
R139
27K
1/2W
15V
5V
12V
D109
UF5404
L106
50UH
C133
470U
25V
C134
0.1U
CER
C135
220U
25V
-10V
L107
BD
D110
UF4004
C136
100U
16V
C137
0.1U
CER
47U
16V
C138
C139
0.1U
CER
C141
0.1U
CER
D111
UF5404
C140
470U
25V
KME
R126
4.7K
P/SUS
R140
470
1/4W
195V
L311
BD
Q104
KSA1013
R128
10K
R129
1K
1/4W
5V
R743
6.8K
R741
680K
R742
47K
R744
10K
-36V
G1
H/FLB
V/FLB
CONT
R127
2.2
1W
FUSI
Q710
2N6520
R755
18K
C782
4.7U
CN103
13PIN
W/WIRE
195V
90V
5V
GND
6.6V
G1
H-F
V-F
CONT
BAT
CN502
3PIN
R503
470
R504
470
C502
220P
CER
C501
220P
CER
D503
1N4148
D504
1N4148
TXD
RXD
R505
10K
R506
10K
D505
1N4148
D506
1N4148
C505
47U
16V
C506
10U
C507
10U
R510
4.7K
R512
4.7K
R507
100
R508
100
C504
100P
CER
C503
100P
CER
D507
1N4148
D508
1N4148
CN503
14PIN
W/WIRE
SEL
H/S
V/S
H/P
V/P
MUTE
LED
SEL
DEG
S6
P/SUS
P/OFF
R535
270
R539
270
R536
270
TXD
RXD
ID
RN501
ANR10X472
IC104
7805
C117
100U
16V
C118
0.1U
CER
R136
1K
1/2W
R346
1K
Q105
2N5551
R135
1K
P/OFF
C143
10U
R130
1.5K
C351
1U
250V
KME
Q304
2SK2341
R347
47
1/4W
C350
0.1U
MP
R345
1K
D321
12V
D322
UF4004
C352
0.1U
MP
R360
100
1/4W
T301
PWM TRANS
C353
0.1U
MP
D320
UF5404
38V
R331
2.2
1W
FUSI
T302
SCAN TRANS
E17
E1.5
E48
E1.5
CN301
G/T
CN301-1
G/T
CN301-2
G/T
L305
7.5MH
E29
E1.5
E30
E1.5
C335
0.01U
630V
MP
RL301
G6B2114P-US
D310
1N414
Q311
KSC1008
R36
10K
S4
C367
100P
2KV
CER
E18
E1.5
E19
E1.5
Q308
MJW16212
C326
33U
C327
33U
C328
33U
R353
6.8
1/2W
D305
D306
1N4002
1N4002
D307
1N4002
D326
1N4002
R368
10
1W
MO
L301
BD
C331
2200P
2KV
MP
E20
E1.5
E21
E1.5
E23
E1.5
C330
2500P
2KV
MP
E22
E1.5
E24
E1.5
L302
50UH
E25
E1.5
E26
E1.5
L303
5UH
C334
1000P
R358
270
1W
L306
220U
C205
0.22U
MP
R208
1.5K
D203
12V
R376
220
3W
MO
R350
220
3W
MO
R210
1.5K
1/2W
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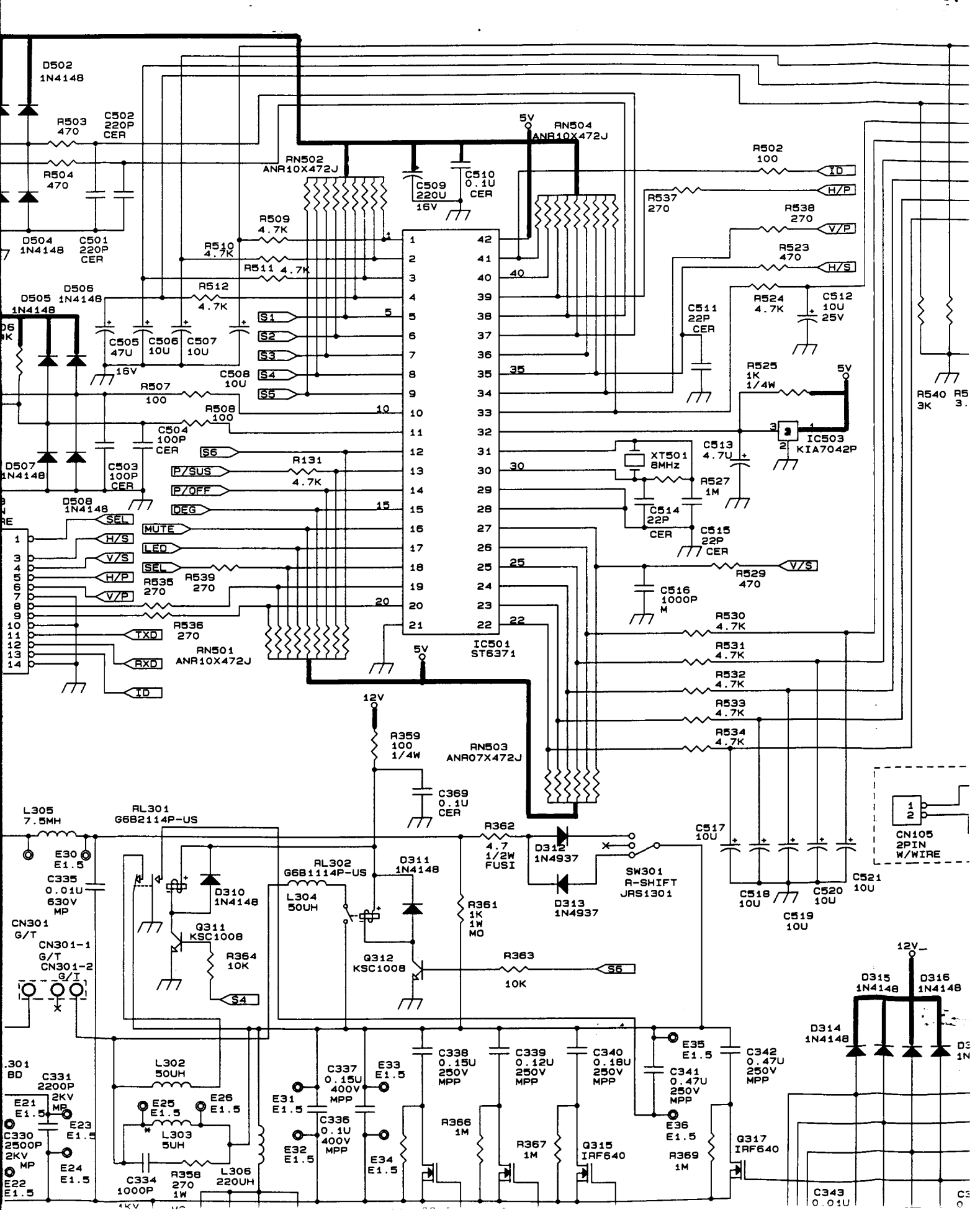
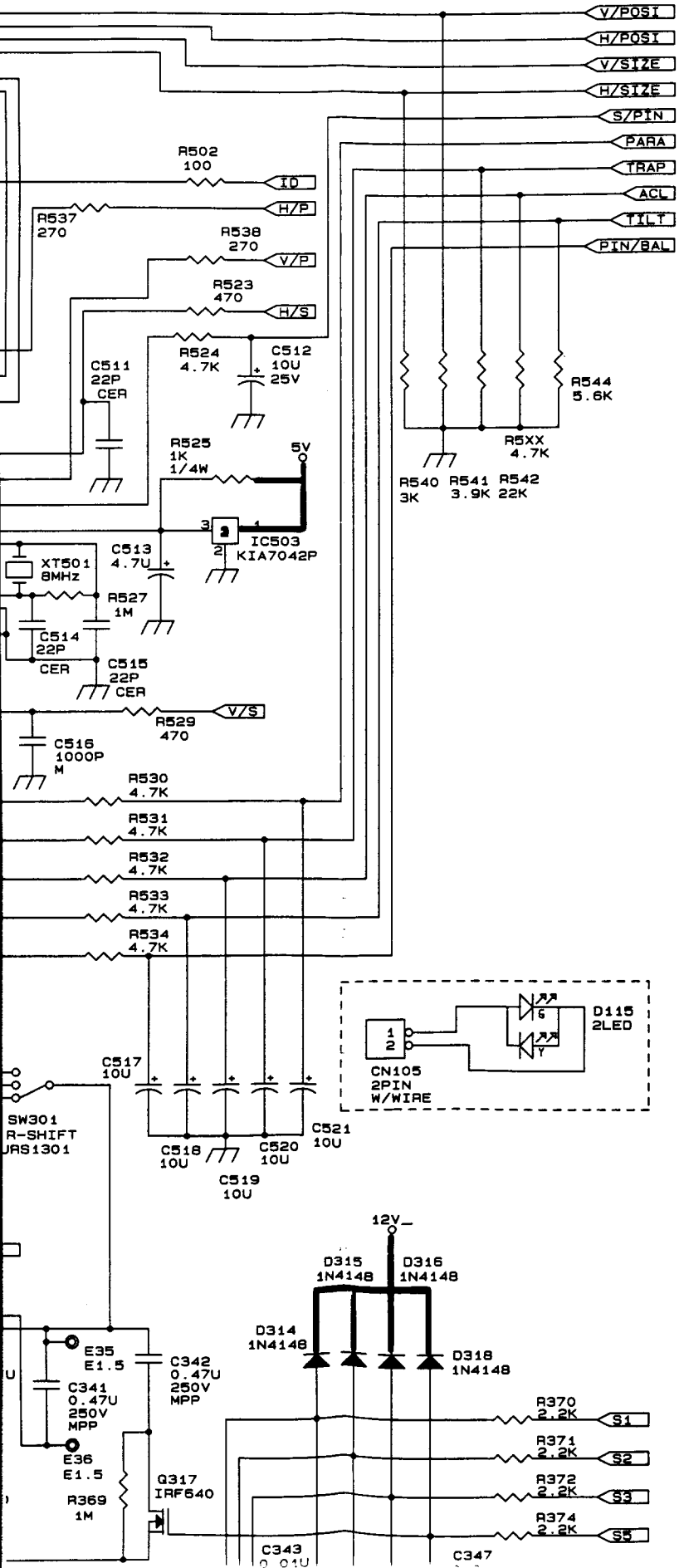
IRF610
CN201
G1
38V
3
13


D502 1N4148
R503 470
C502 220P CER
R504 470
D504 1N4148
C501 220P CER
D506 1N4148
D505 1N4148
R512 4.7K
R510 4.7K
R511 4.7K
R509 4.7K
RN502 ANR10X472J
5V
RN504 ANR10X472J
C509 220U 16V
C510 0.1U CER
C505 47U 16V
C506 10U
C507 10U
C508 10U
S1
S2
S3
S4
S5
R507 100
R508 100
C504 100P CER
C503 100P CER
D507 1N4148
D508 1N4148
S6
P/SUS
P/OFF
DEG
R131 4.7K
SEL
MUTE
LED
SEL
H/S
V/S
H/P
V/P
R535 270
R539 270
R536 270
TXD
RXD
ID
RN501 ANR10X472J
IC501 ST6371
R502 100
R537 270
R538 270
R523 470
R524 4.7K
C512 10U 25V
C511 22P CER
R525 1K 1/4W
IC503 KIA7042P
XT501 8MHz
C513 4.7U
R527 1M
C514 22P CER
C515 22P CER
R529 470
C516 1000P M
R530 4.7K
R531 4.7K
R532 4.7K
R533 4.7K
R534 4.7K
R540 3K
CN105 2PIN W/WIRE
12V
R359 100 1/4W
C369 0.1U CER
RN503 ANR07X472J
L305 7.5MH
RL301 G6B2114P-US
R362 4.7 1/2W FUSI
D312 1N4937
D313 1N4937
SW301 R-SHIFT JRS1301
C517 10U
C518 10U
C519 10U
C520 10U
C521 10U
E30 E1.5
C335 0.01U 630V MP
D310 1N4148
RL302 G6B1114P-US
D311 1N4148
L304 50UH
R361 1K 1W MO
CN301 G/T
CN301-1 G/T
CN301-2 G/T
Q311 KSC1008
R364 10K
Q312 KSC1008
R363 10K
S4
D315 1N4148
D316 1N4148
D314 1N4148
L302 50UH
C331 2200P 2KV MP
E21 E1.5
E23 E1.5
C330 2500P 2KV MP
E22 E1.5
E24 E1.5
E25 E1.5
E26 E1.5
L303 5UH
C334 1000P
R358 270 1W
L306 220UH
C337 0.15U 400V MPP
C336 0.1U 400V MPP
E31 E1.5
E32 E1.5
E33 E1.5
E34 E1.5
C338 0.15U 250V MPP
C339 0.12U 250V MPP
C340 0.18U 250V MPP
C341 0.47U 250V MPP
C342 0.47U 250V MPP
E35 E1.5
E36 E1.5
R366 1M
R367 1M
Q315 IRF640
R369 1M
Q317 IRF640
C343 0.01U


V/POSI
H/POSI
V/SIZE
H/SIZE
S/PIN
PARA
TRAP
ACL
TILT
PIN/BAL
R502
100
ID
R537
270
H/P
R538
270
V/P
R523
470
H/S
R524
4.7K
C512
10U
25V
C511
22P
CER
R525
1K
1/4W
5V
R544
5.6K
R5XX
4.7K
R540
3K
R541
3.9K
R542
22K
IC503
KIA7042P
XT501
8MHz
C513
4.7U
R527
1M
C514
22P
CER
C515
22P
CER
R529
470
V/S
C516
1000P
M
R530
4.7K
R531
4.7K
R532
4.7K
R533
4.7K
R534
4.7K
D115
2LED
CN105
2PIN
W/WIRE
C517
10U
SW301
R-SHIFT
UAS1301
C518
10U
C519
10U
C520
10U
C521
10U
12V
D315
1N4148
D316
1N4148
D314
1N4148
D318
1N4148
E35
E1.5
C342
0.47U
250V
MPP
C341
0.47U
250V
MPP
E36
E1.5
R369
1M
Q317
IRF640
R370
2.2K
S1
R371
2.2K
S2
R372
2.2K
S3
R374
2.2K
S5
C343
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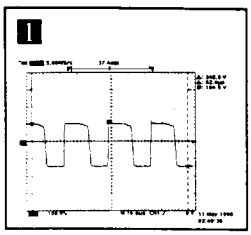
C347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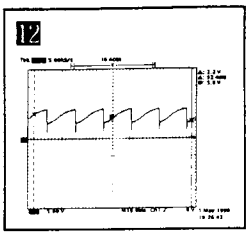
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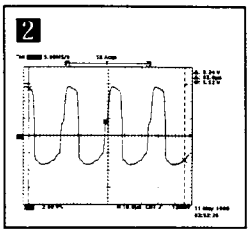
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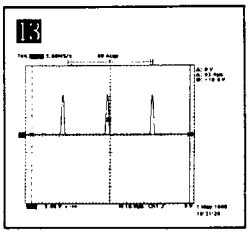
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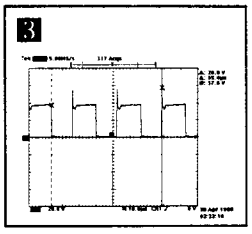
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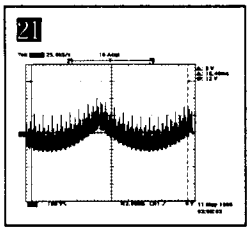
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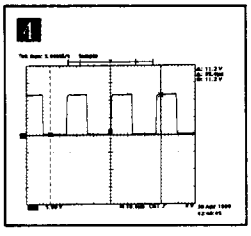
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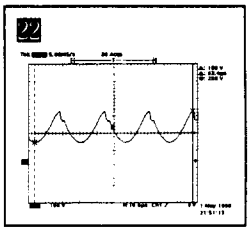
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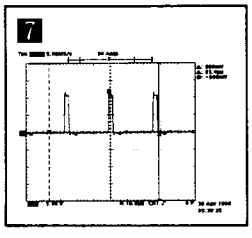
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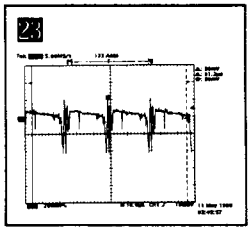
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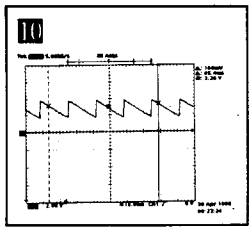
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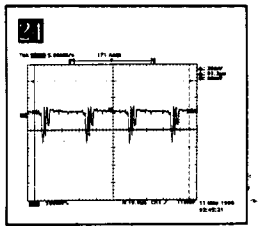
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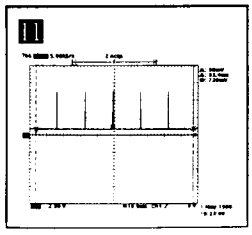
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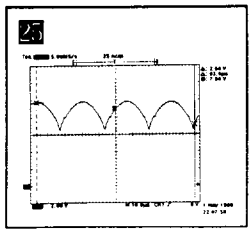
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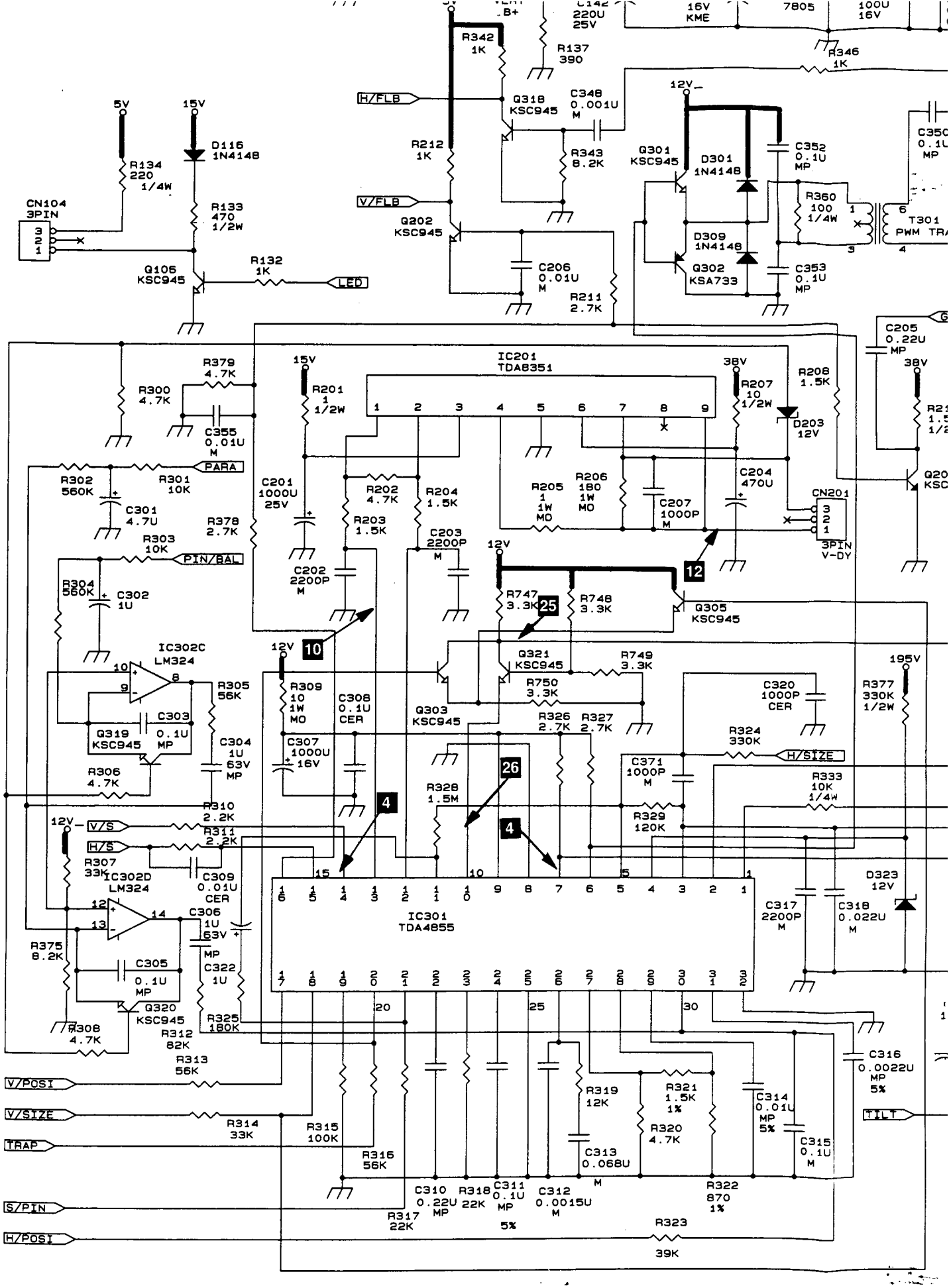
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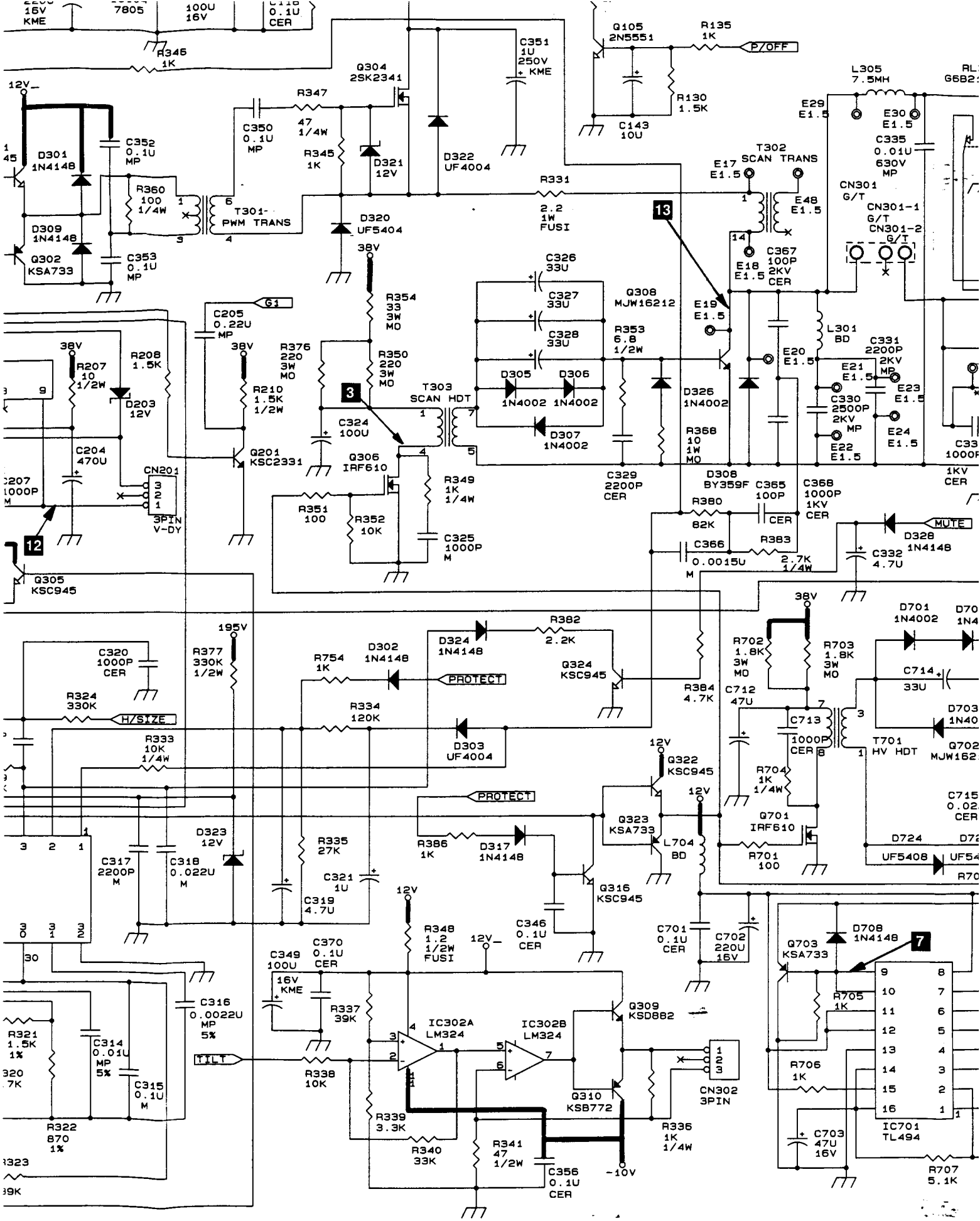
15V
D116
1N4148
R134
220
1/4W
R133
470
1/2W
CN104
3PIN
Q106
KSC945
R132
1K
LED
R342
1K
R137
390
H/FLB
Q318
KSC945
C348
0.001U
M
R212
1K
R343
8.2K
V/FLB
Q202
KSC945
C206
0.01U
M
R211
2.7K
12V
Q301
KSC945
D301
1N4148
C352
0.1U
MP
R360
100
1/4W
T301
PWM TRA
D309
1N4148
Q302
KSA733
C353
0.1U
MP
R346
1K
C142
220U
25V
7805
16V
KME
100U
16V
C205
0.22U
MP
38V
R208
1.5K
D203
12V
R207
10
1/2W
IC201
TDA8351
R379
4.7K
R300
4.7K
C355
0.01U
M
R201
1
1/2W
PARA
R302
560K
R301
10K
C301
4.7U
R378
2.7K
R303
10K
PIN/BAL
C201
1000U
25V
R202
4.7K
R204
1.5K
R203
1.5K
C203
2200P
M
C202
2200P
M
R205
1
1W
MO
R206
180
1W
MO
C207
1000P
M
C204
470U
CN201
3PIN
V-DY
R304
560K
C302
1U
R747
3.3K
R748
3.3K
Q305
KSC945
IC302C
LM324
R305
56K
C303
0.1U
MP
Q319
KSC945
C304
1U
63V
MP
R306
4.7K
R309
10
1W
MO
C308
0.1U
CER
C307
1000U
16V
Q303
KSC945
Q321
KSC945
R749
3.3K
R750
3.3K
R326
2.7K
R327
2.7K
C320
1000P
CER
195V
R377
330K
1/2W
R324
330K
H/SIZE
C371
1000P
M
R333
10K
1/4W
R329
120K
R328
1.5M
R310
2.2K
R311
2.2K
V/S
H/S
R307
33K
IC302D
LM324
C309
0.01U
CER
C306
1U
63V
MP
C322
1U
R375
8.2K
C305
0.1U
MP
Q320
KSC945
R308
4.7K
R312
82K
R313
56K
R325
180K
IC301
TDA4855
D323
12V
C317
2200P
M
C318
0.022U
M
C316
0.0022U
MP
5%
TILT
V/POSI
V/SIZE
TRAP
S/PIN
H/POSI
R314
33K
R315
100K
R316
56K
R319
12K
R321
1.5K
1%
R320
4.7K
C313
0.068U
M
C314
0.01U
MP
5%
C315
0.1U
M
C310
0.22U
MP
R318
22K
C311
0.1U
MP
5%
C312
0.0015U
M
R322
870
1%
R317
22K
R323
39K
4
10
12
25
26


7805
R345 1K
C351 1U 250V KME
Q105 2N5551
R135 1K
P/OFF
Q304 2SK2341
R347 47 1/4W
C350 0.1U MP
R345 1K
D321 12V
D322 UF4004
R130 1.5K
C143 10U
L305 7.5MH
E29 E1.5
E30 E1.5
C335 0.01U 630V MP
T302 SCAN TRANS
E17 E1.5
E48 E1.5
CN301 G/T
CN301-1 G/T
CN301-2 G/T
D301 1N4148
C352 0.1U MP
R360 100 1/4W
T301- PWM TRANS
D309 1N4148
Q302 KSA733
C353 0.1U MP
D320 UF5404
R331 2.2 1W FUSI
C367 100P 2KV CER
E18 E1.5
C205 0.22U MP
G1
R354 33 3W MO
C326 33U
C327 33U
C328 33U
Q308 MJW16212
R353 6.8 1/2W
R376 220 3W MO
R350 220 3W MO
T303 SCAN HDT
D305 1N4002
D306 1N4002
D307 1N4002
D326 1N4002
R368 10 1W MO
E19 E1.5
E20 E1.5
L301 BD
C331 2200P 2KV MP
E21 E1.5
E22 E1.5
E23 E1.5
E24 E1.5
C330 2500P 2KV MP
R207 10 1/2W
R208 1.5K
D203 12V
R210 1.5K 1/2W
C204 470U
CN201 3PIN V-DY
Q201 KSC2331
C324 100U
Q306 IRF610
R349 1K 1/4W
R351 100
R352 10K
C325 1000P M
C329 2200P CER
D308 BY359F
C365 100P CER
C368 1000P 1KV CER
R380 82K
C366 0.0015U M
R383 2.7K 1/4W
C332 4.7U
MUTE
D328 1N4148
Q305 KSC945
R382 2.2K
D324 1N4148
R754 1K
D302 1N4148
PROTECT
Q324 KSC945
R384 4.7K
R702 1.8K 3W MO
R703 1.8K 3W MO
D701 1N4002
C712 47U
C713 1000P CER
T701 HV HDT
C714 33U
D703 1N40
Q702 MJW162
R704 1K 1/4W
Q701 IRF610
R701 100
D724
UF5408
C715 0.02 CER
C320 1000P CER
R377 330K 1/2W
R324 330K
H/SIZE
R334 120K
D303 UF4004
R333 10K 1/4W
Q322 KSC945
Q323 KSA733
L704 BD
D323 12V
C317 2200P M
C318 0.022U M
R335 27K
C319 4.7U
C321 1U
R386 1K
D317 1N4148
Q316 KSC945
C346 0.1U CER
R348 1.2 1/2W FUSI
C370 0.1U CER
C349 100U 16V KME
R337 39K
C316 0.0022U MP 5%
R321 1.5K 1%
C314 0.01U MP 5%
C315 0.1U M
R322 870 1%
TILT
R338 10K
IC302A LM324
IC302B LM324
Q309 KSD882
Q310 KSB772
R339 3.3K
R340 33K
R341 47 1/2W
C356 0.1U CER
-10V
R336 1K 1/4W
CN302 3PIN
C701 0.1U CER
C702 220U 16V
D708 1N4148
Q703 KSA733
R705 1K
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IC701 TL494
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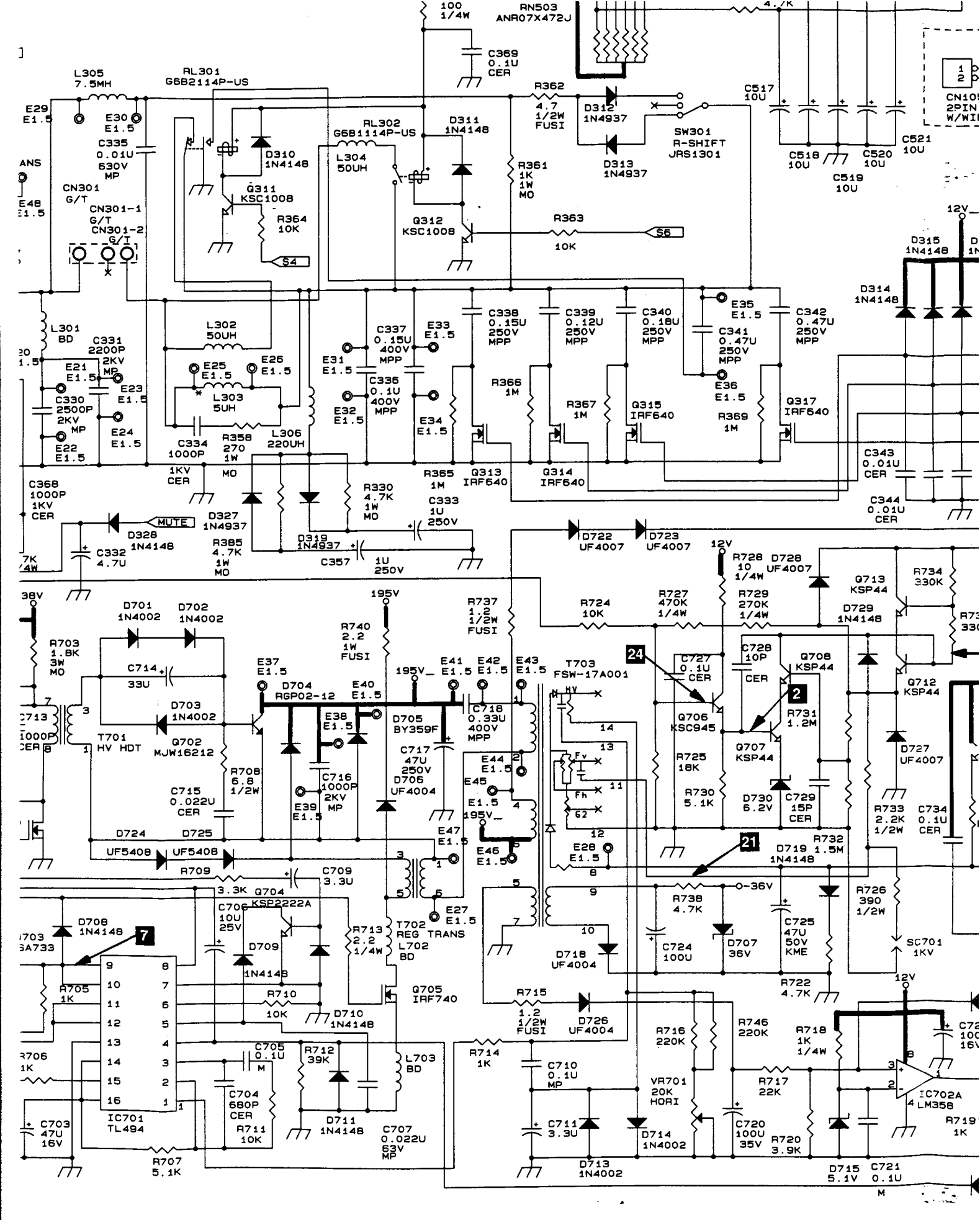
R707 5.1K
12V
195V
38V
12
3
7
13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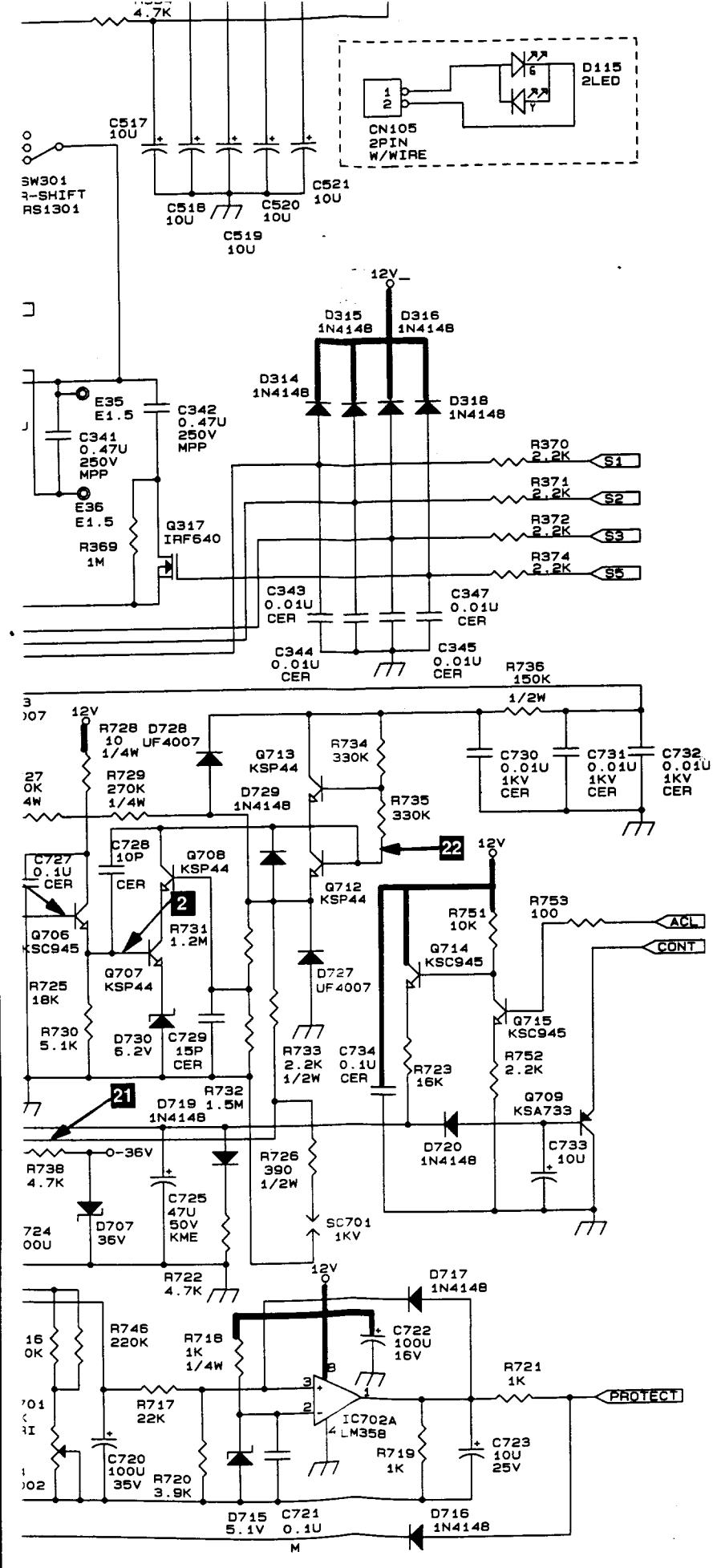
RL302 G6B1114P-US
L304 50UH
L301 BD
L302 50UH
L303 5UH
L306 220UH
T701 HV HDT
T702 REG TRANS L702 BD
T703 FSW-17A001
IC701 TL494
IC702A LM358
Q311 KSC1008
Q312 KSC1008
Q313 IRF640
Q314 IRF640
Q315 IRF640
Q317 IRF640
Q702 MJW16212
Q704 KSP2222A
Q705 IRF740
Q706 KSC945
Q707 KSP44
Q708 KSP44
Q712 KSP44
Q713 KSP44
D704 RGP02-12
D705 BY359F
D706 UF4004
D718 UF4004
D726 UF4004
D722 UF4007
D723 UF4007
D727 UF4007
D728 UF4007
SW301 R-SHIFT JRS1301
RN503 ANR07X472J
MUTE
SC701 1KV
CN301 G/T
CN301-1 G/T
CN301-2 G/T
195V
-36V
12V
38V


4.7K
D115
2LED
CN105
2PIN
W/WIRE
C517
10U
SW301
3-SHIFT
RS1301
C518
10U
C519
10U
C520
10U
C521
10U
12V
D315
1N4148
D316
1N4148
D314
1N4148
D318
1N4148
E35
E1.5
C342
0.47U
250V
MPP
C341
0.47U
250V
MPP
E36
E1.5
R369
1M
Q317
IRF640
R370
2.2K
S1
R371
2.2K
S2
R372
2.2K
S3
R374
2.2K
S5
C343
0.01U
CER
C347
0.01U
CER
C344
0.01U
CER
C345
0.01U
CER
R736
150K
1/2W
12V
R728
10
1/4W
D728
UF4007
R729
270K
1/4W
Q713
KSP44
R734
330K
D729
1N4148
R735
330K
C730
0.01U
1KV
CER
C731
0.01U
1KV
CER
C732
0.01U
1KV
CER
22
12V
C727
0.1U
CER
C728
10P
CER
Q708
KSP44
2
Q712
KSP44
R753
100
ACL
CONT
R751
10K
Q714
KSC945
Q706
KSC945
R731
1.2M
Q707
KSP44
D727
UF4007
Q715
KSC945
R725
18K
R730
5.1K
D730
6.2V
C729
15P
CER
R733
2.2K
1/2W
C734
0.1U
CER
R723
16K
R752
2.2K
21
R732
1.5M
D719
1N4148
Q709
KSA733
0-36V
R738
4.7K
D720
1N4148
C733
10U
R726
390
1/2W
C725
47U
50V
KME
D707
36V
SC701
1KV
R722
4.7K
12V
D717
1N4148
R746
220K
R718
1K
1/4W
C722
100U
16V
R721
1K
PROTECT
R717
22K
IC702A
LM358
C720
100U
35V
R720
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1K
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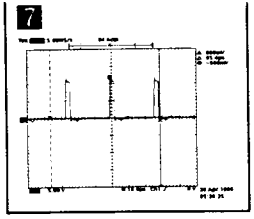
10U
25V
D715
5.1V
C721
0.1U
D716
1N4148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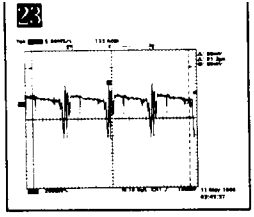
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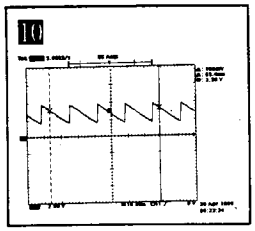
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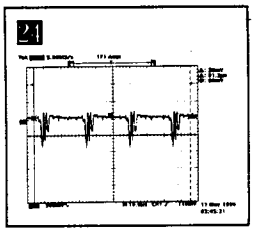
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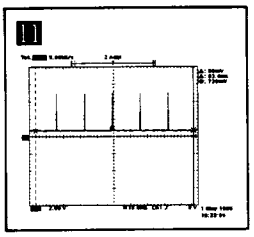
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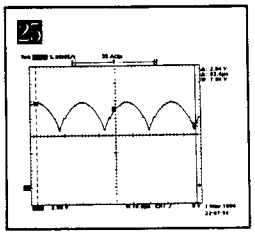
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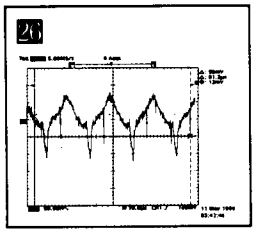
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