

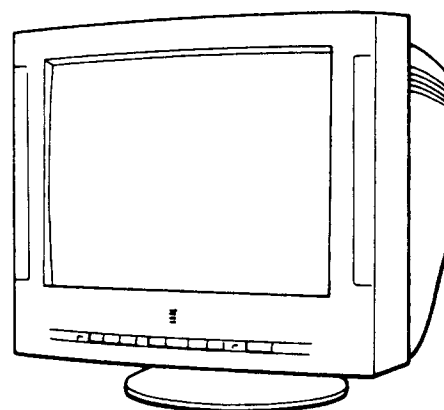
Service Manual

Multi-Scan Color CRT Display
MODEL TX-D1734F Series
Chassis No. HV7F
Chassis Family No.17HV7F

Suffix of Each Model and Destination

- U	U. K.	(Power Cord : U.K. type No. TSX8493 enclosed)
- SW	Switzerland	(Power Cord : SEV type No. TSX8492 enclosed)
- E	Germany	(Power Cord : VDE type No. TSX8484 enclosed)
- G	Other Europe and Asia	(Power Cord : VDE type No. TSX8484 enclosed)

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CONTENTS

SERVICE WARNING	1
SAFETY PRECAUTIONS.....	2
GENERAL INFORMATION	3
SPECIFICATIONS.....	3
DIMENSIONS.....	12
DISASSEMBLY INSTRUCTIONS	14
CONTROL LOCATION.....	17
CAUTION FOR ADJUSTMENT AND REPAIR.....	18
CAUTION FOR SERVICING	18
ADJUSTMENT AND CHECK PROCEDURE	19
ADJUSTMENT SOFTWARE	21
ADJUSTMENT CONTROL LOCATION.....	22
REQUIRED ADJUSTMENT PROCEDURE AFTER A PARTS REPLACED	23
ADJUSTMENT PROCEDURE	24
BLOCK DIAGRAM.....	32
CONDUCTOR VIEW	40
SCHEMATIC DIAGRAM.....	43
TROUBLE SHOOTING HINTS.....	51
EXPLODED VIEW.....	58
REPLACEMENT PARTS LIST	59

Panasonic

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.

It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.

Products powered by electricity should be serviced or repaired only by experienced professional technicians.

Any attempt to service or repair the product or products dealt within this service information by anyone else could result in serious injury or death.

SAFETY PRECAUTIONS

1 CAUTION:

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guide lines.

2 SAFETY CHECK

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

3 FIRE & SHOCK HAZARD

- 3-1 Insert an isolation transformer between the CRT display and AC power line before servicing the chassis.
- 3-2 In servicing pay attention to original lead dress especially in the high voltage circuit. If a short circuit is found, replace all parts which have been overheated as a result of the short circuit.
- 3-3 All the protective devices must be reinstalled per original design.
- 3-4 Soldering must be inspected for possible cold solder joints, frayed leads, damaged insulation, solder splashes or sharp solder points. Be certain to remove all foreign material.

4 LEAKAGE CURRENT COLD CHECK

- 4-1 Unplug the AC cord and connect a jumper between the two prongs on the plug.
- 4-2 Turn the CRT display power switch "on".
- 4-3 Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metallic part on the CRT display such as the metal frame, screwheads, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be 1.8 megohm minimum.

5 LEAKAGE CURRENT HOT CHECK

- 5-1 Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during this check.
- 5-2 Connect a 1500 ohm, 10 watt resistor, paralleled by a 0.15 μ F capacitor between each exposed metallic part and a good earth ground (as shown in Fig.1).
- 5-3 Use an AC voltmeter with 1000 ohm/volt or more sensitivity and measure the AC voltage across the combination 1500 ohm resistor and 0.15 μ F capacitor.
- 5-4 Move the resistor connection to each exposed metallic part and measure the voltage.
- 5-5 Reverse the polarity of the AC plug in the AC outlet and repeat the above measurement.
- 5-6 Voltage measured must not exceed 7.5 volt RMS, from any exposed metallic part to ground. A leakage current tester may be used in the above hot check, in which case any current measured must not exceed 5.0 milliamp. In the case of a measurement exceeding the 5.0 milliamp value, a rework is required to eliminate the chance of a shock hazard.

Note: High voltage is present when this CRT display is operating. Always discharge the anode of the picture tube to the display chassis to prevent shock hazard.

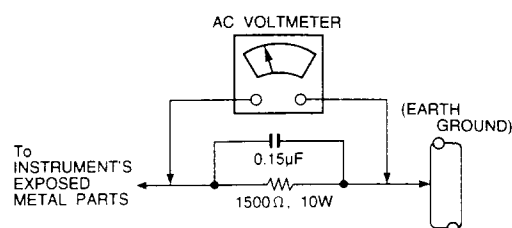


Fig.1

6 IMPLOSION PROTECTION

Picture tubes are equipped with an integral implosion protection system, but care should be taken to avoid damage and scratching during installation. Use only Panasonic replacement picture tubes.


7 X-RADIATION

WARNING : The only potential source of X-Radiation is the picture tube. However when the high voltage circuitry is operating properly there is no possibility of X-Radiation problem. The basic precaution which must be exercised is to keep the high voltage at the following factory-recommended level.

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

- 7-1 The procedure for adjustment high voltage is as shown on page 25.
- 7-2 If can not be adjust 25.0 kV at immediate service is required to prevent the possibility of premature component failure.
- 7-3 To prevent X-Radiation possibility it is essential to use the specified picture tube.

IMPORTANT SAFETY NOTICE

There are special components used in this CRT displays which are important for safety. These parts are identified by the international symbol  on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacture's specified parts to prevent X-RADIATION, shock, fire or other hazards. Do not modify the original design or this will void the original parts and labor guarantee.

GENERAL INFORMATION

1. OUTLINE

TX-D1734F is 17 inch multi-scan color CRT display with the following nice features.
OSD (on screen display) Control is newly introduced, which allows easy user adjustment.

2. FEATURES

2-1 Stereo Dome Speakers

- High quality stereo sound by Panasonic Dome Speaker system
- Audio typical output 3W+3W
- THD (Total Harmonic Distortion) maximum 1.0% (output=1.0W)

2-2 Mic function

A microphone is installed on the front panel of monitor for sending voice message to computer system. Also microphone jack is mounted on left side of monitor for additional use.

2-3 Headphone function

Headphone jack is also mounted on left side of monitor to enjoy music, conversation and entertainment

2-4 Power Saving

Built in Power Saving function based on VESA-DPMS standard.

Power energy shall be saved by controlling the circuit in accordance with power save signal from computer.

2-5 OSD (on screen display) function

OSD (5 languages) is new and excellent man-machine interface.

Anyone is able to set up the picture as he like through OSD menu.

2-6 Self Test function

Self testing picture comes out by pushing any key in the case of no-connection with computer or power saving operation.

This function shows if monitor is alive or not and can be used for self aging test.

2-7 Ergonomic design

- Low emission design to meet MPR II & TCO'92
- ESF (Electro static field) free coating on CRT

2-8 Multi scan with digital technology

- 8 bit micro computer controls the circuit operation to meet with wide range signal of $f_H=30\sim69$ kHz and $f_V=50\sim160$ Hz. So VGA640x350, VGA640x400, VGA640x480, SVGA800x600, 1024x768 and 1280x1024 mode are applicable.

2-9 1 Factory preset, (+7 Reservation), 13 user memories.

- 1 standard mode is preset at the factory.
- 7 modes are reserved at the factory.
- 13 user memories are available to set the users own timing and display information.

2-10 Flat Face and fine dot pitch

- Flat face CRT with a fine dot pitch of 0.27 mm gives a comfortable sight of the screen.

2-11 Superior display performance

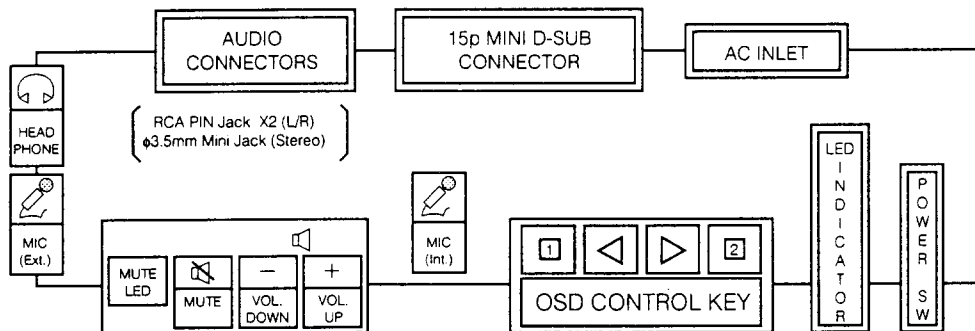
- Good focus by sophisticated gun and dynamic focus circuit
- High contrast
- Minimized distortion by correction circuit
- Good convergence
- Users enjoy full scan image for graphick

2-12 Special function

- VESA DDC1/2B (Display Data Channel) compatible
- Rotation control circuit

SPECIFICATION

1. DIAGRAM



1.1 POWER SW, LED, [1]-key (MENU), <-key (DOWN), >-key (UP), and [2]-key (ENTER) are located on the front panel.

1.2 Signal cable and AC inlet are located on the back side of the cabinet.

1.3 OSD menu includes the following function.

CONTRAST	BRIGHTNESS	DEGAUSS
RECALL	H.POSITION	H.SIZE
V.POSITION	V.SIZE	V.PINCUSHION
TRAPEZOID	PARALLELOGRAM	ROTATION

COLOR SELECT

VIDEO INPUT LEVEL

DISPLAY FREQUENCY

LANGUAGES

*) CONTRAST can be directly controlled with </>-key.

*) With sync signal, OSD menu appears by pushing [1]-key.

Without sync signal, self test menu appears by pushing [1]-key.

*) Audio Level can be directly controlled with VOL UP/DOWN-key.

2. MECHANICAL SPECIFICATIONS

..... refer to the attached drawing

- 2.1 Dimension Height : 418 mm (16.5") (typ.)
 Width : 438 mm (17.2") (typ.)
 Depth : 438 mm (17.2") (typ.)

- 2.2 Net Weight : 19.2 kg (typ.)

- 2.3 Maximum Viewable Phosphor Display Area
 : 406.4 mm (16.0")(typ.)

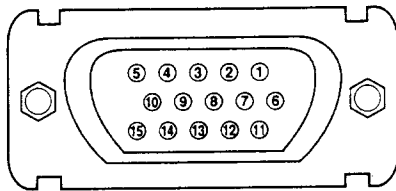
3. CONNECTORS

- 3.1 Signal connector:

15P Mini D-Sub cable ... un-detachable

- 3.2 AC inlet: CEE 22 typed connector

<15P Mini D-Sub Pin assignment>



- 1 ... RED 6 ... GROUND 11 ... GROUND
 2 ... GREEN 7 ... GROUND 12 ... SDA (DDC)
 3 ... BLUE 8 ... GROUND 13 ... H. SYNC.
 4 ... GROUND 9 ... - (OPEN) 14 ... V. SYNC.
 5 ... GROUND (DDC) 10 ... GROUND 15 ... SCL (DDC)

4. CRT SPECIFICATIONS

Part No.	M41KXH140X
Type	17", 90°, 29°, in-line gun (16.0" Viewable)
Dot Pitch	0.27 mm
Phosphor	R, G, B Short Persistence (Hi-Eu RED)
CIE Color point	Red x: 0.635 (± 0.020) y: 0.333 (± 0.020) Green x: 0.280 (± 0.020) y: 0.595 (± 0.020) Blue x: 0.152 (± 0.015) y: 0.063 (± 0.015)
Bulb	DARK TINT
Face	NEW AGRAS COAT
Total Transmission	42.5 %

5. ELECTRICAL SPECIFICATIONS

- 5.1 Standard conditions ... Except special items

Display image	Green, full "H" characters with a border line. (7 x 9 dots) Video signal : 100% duty Display area : 300 mm x 225 mm
Video signal level	0.7 V pp
Contrast, Brightness	Contrast : Max., Brightness : detent point
Ambient Temperature	20±5°C (68 ± 9°F)
Input Voltage	AC 120 V, 60 Hz or AC 220 V, 50 Hz
Terrestrial magnetism	Vertical field : northern hemisphere field 40µT (southern hemisphere field -40 µT) Horizontal field : no field
Viewing direction	Parallel to the CRT axis
Measurements	After an initial warming up time of more than 30 minutes.
Ambient light	200±50 IX
Display mode	1024 x 768 (60.02 kHz, 75.03 Hz)

5.2 POWER

- 5.2.1 Power supply ... Commercial power source

Input voltage	AC 90 - 132 V, AC 198 - 264 V
Power frequency	50 Hz ± 3 Hz, 60 Hz ± 3 Hz
Input current	2.4 A Max. (100 V)
Inrush current (at 20° C)	40 A op
Power consumption	130 W (Typ.)

- 5.2.2 Power Management for Power Saving ...

Power saving system is designed based upon VESA DPMS standard (Version : 1.0)

- 1) Power consumption and recovery time.

*1 APM State	SIGNALS			MONITOR POWER CONSUMPTION	RECOVERY TIME TO ON STATE	INDICATOR
	H. Sync	V. Sync	VIDEO			
ON	*3 NOR- MAL	*3 NOR- MAL	*2 ACTIVE	*4 100%	—	Green
*6 STAND- BY	No Sync or *5 < 6 kHz	> 40 Hz	BLANK	< 20 W	< 4s	Yellow
SUS- PEND	> 10 kHz	No Sync or *5 < 20 Hz	BLANK	< 20 W	< 4s	Yellow
OFF	No Sync or *5 < 6 kHz	No Sync or *5 < 20 Hz	BLANK	< 8 W	< 20s	Yellow

** The transition time from ON state to each APM state is 5 seconds minimum.

*1 : APM : Advanced Power Management.

*2 : Means. Condition of power consumption for ON state.

DISPLAY IMAGE : WHITE full "H" characters with a border line (7 × 9 dots).

*3 : NORMAL : See "5.4.ACCEPTABLE TIMING".

*4 : Power Consumption is measured at AC 100-240V.

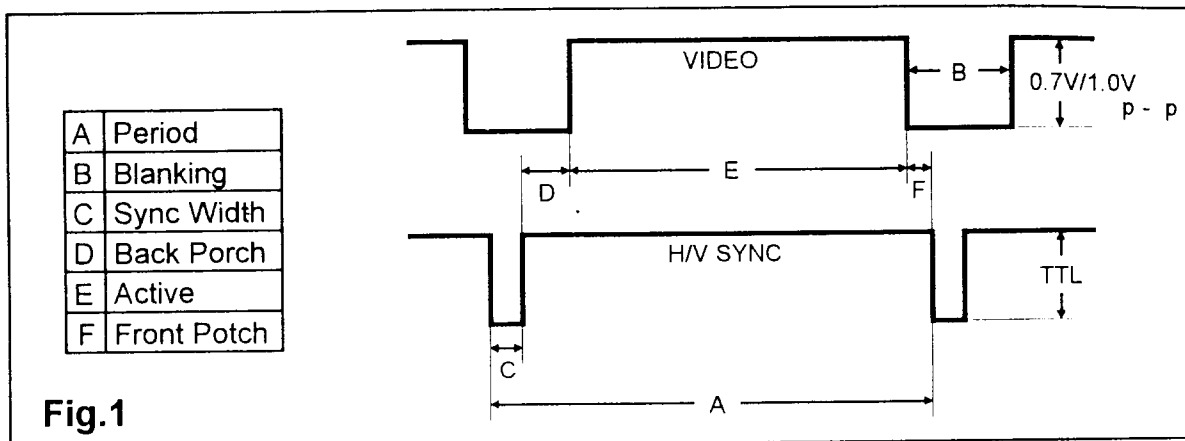
*5 : Power saving operation is done at least less than specified value in the list.

*6 : Micro controller will supply SUSPEND signal at this mode.

5.3 Standard timing (Standard mode)

- Following 1 mode is preset in the memory as standard timing at the factory and 7 modes are reserved.
- Fig-1 shows a definition of timing and signal level.
- Electrical performance is specified This SPECIFICATION is specified at STD (1024 x 768) mode unless otherwise mentioned.

TIMING CHART



		PRESET	RESERVATION	RESERVATION
		MODE - 1	MODE - 2	MODE - 3
		1024 × 768 (75)	640 × 480 (60)	640 × 480 (75)
DOT CLOCK		78.7500 MHz	25.1745 MHz	31.5000 MHz
H	f H	60.0229 KHz	31.4681 KHz	37.5000 KHz
	A - PERIOD	16.660 μs (1,312 dots)	31.778 μs (800 dots)	26.667 μs (840 dots)
	B - BLANKING TIME	3.657 μs (288 dots)	6.356 μs (160 dots)	6.349 μs (200 dots)
	C - SYNC WIDTH	1.219 μs (96 dots)	3.813 μs (96 dots)	2.032 μs (64 dots)
	D - BACK PORCH	2.235 μs (176 dots)	1.907 μs (48 dots)	3.810 μs (120 dots)
	E - ACTIVE TIME	13.003 μs (1,024 dots)	25.423 μs (640 dots)	20.317 μs (640 dots)
	F - FRONT PORCH	0.203 μs (16 dots)	0.636 μs (16 dots)	0.508 μs (16 dots)
V	f V	75.0286 Hz	59.9393 Hz	75.0000 Hz
	A - PERIOD	13.328 ms (800 lines)	16.684 ms (525 lines)	13.333 ms (500 lines)
	B - BLANKING TIME	0.533 ms (32 lines)	1.430 ms (45 lines)	0.533 ms (20 lines)
	C - SYNC WIDTH	0.050 ms (3 lines)	0.064 ms (2 lines)	0.080 ms (3 lines)
	D - BACK PORCH	0.466 ms (28 lines)	1.049 ms (33 lines)	0.427 ms (16 lines)
	E - ACTIVE TIME	12.795 ms (768 lines)	15.254 ms (480 lines)	12.800 ms (480 lines)
	F - FRONT PORCH	0.017 ms (1 lines)	0.318 ms (10 lines)	0.027 ms (1 lines)
SYNC POLARITY(H/V)		Positive / Positive	Negative / Negative	Negative / Negative

		RESERVATION	RESERVATION	RESERVATION
FOR PRESET		MODE - 4	MODE - 5	MODE - 6
		800 × 600 (75)	MAC 832 × 624	1024 × 768 (70)
DOT CLOCK		49.5000 MHz	57.2832 MHz	75.0000 MHz
H	f H	46.8750 KHz	49.7250 KHz	56.4759 KHz
	A - PERIOD	21.333 μs (1,056 dots)	20.111 μs (1,152 dots)	17.707 μs (1,328 dots)
	B - BLANKING TIME	5.172 μs (256 dots)	5.586 μs (320 dots)	4.053 μs (304 dots)
	C - SYNC WIDTH	1.616 μs (80 dots)	1.117 μs (64 dots)	1.813 μs (136 dots)
	D - BACK PORCH	3.232 μs (160 dots)	3.910 μs (224 dots)	1.920 μs (144 dots)
	E - ACTIVE TIME	16.162 μs (800 dots)	14.524 μs (832 dots)	13.653 μs (1,024 dots)
	F - FRONT PORCH	0.323 μs (16 dots)	0.559 μs (32 dots)	0.320 μs (24 dots)
V	f V	75.0000 Hz	74.5502 Hz	70.0694 Hz
	A - PERIOD	13.333 ms (625 lines)	13.414 ms (667 lines)	14.272 ms (806 lines)
	B - BLANKING TIME	0.533 ms (25 lines)	0.865 ms (43 lines)	0.673 ms (38 lines)
	C - SYNC WIDTH	0.064 ms (3 lines)	0.060 ms (3 lines)	0.106 ms (6 lines)
	D - BACK PORCH	0.448 ms (21 lines)	0.784 ms (39 lines)	0.513 ms (29 lines)
	E - ACTIVE TIME	12.800 ms (600 lines)	12.549 ms (624 lines)	13.599 ms (768 lines)
	F - FRONT PORCH	0.021 ms (1 lines)	0.020 ms (1 lines)	0.053 ms (3 lines)
SYNC POLARITY(H/V)		Positive / Positive	Negative / Negative	Negative / Negative

		RESERVATION	RESERVATION
		MODE - 7	MODE - 8
		MAC 1024 × 768	1280 × 1024 (60)
DOT CLOCK		80.0000 MHz	108.0000 MHz
H	f H	60.2410 KHz	63.9810 KHz
	A - PERIOD	16.600 μs (1,328 dots)	15.630 μs (1,688 dots)
	B - BLANKING TIME	3.800 μs (304 dots)	3.778 μs (408 dots)
	C - SYNC WIDTH	1.200 μs (96 dots)	1.037 μs (112 dots)
	D - BACK PORCH	2.200 μs (176 dots)	2.296 μs (248 dots)
	E - ACTIVE TIME	12.800 μs (1,024 dots)	11.852 μs (1,280 dots)
	F - FRONT PORCH	0.400 μs (32 dots)	0.444 μs (48 dots)
V	f V	74.9266 Hz	60.0197 Hz
	A - PERIOD	13.346 ms (804 lines)	16.661 ms (1,066 lines)
	B - BLANKING TIME	0.598 ms (36 lines)	0.656 ms (42 lines)
	C - SYNC WIDTH	0.050 ms (3 lines)	0.047 ms (3 lines)
	D - BACK PORCH	0.498 ms (30 lines)	0.594 ms (38 lines)
	E - ACTIVE TIME	12.749 ms (768 lines)	16.005 ms (1,024 lines)
	F - FRONT PORCH	0.050 ms (3 lines)	0.016 ms (1 lines)
SYNC POLARITY(H/V)		Negative / Negative	Positive / Positive

		ADJUSTMENT	ADJUSTMENT	ADJUSTMENT
		HV7 - 1	HV7 - 2	HV7 - 3
DOT CLOCK		22.6000 MHz	40.2480 MHz	64.0400 MHz
H	f H	29.5039 KHz	39.0000 KHz	53.9966 KHz
	A - PERIOD	33.894 μs (766 dots)	25.641 μs (1,032 dots)	18.520 μs (1,186 dots)
	B - BLANKING TIME	8.496 μs (192 dots)	3.926 μs (158 dots)	4.497 μs (288 dots)
	C - SYNC WIDTH	4.115 μs (93 dots)	1.491 μs (60 dots)	1.718 μs (110 dots)
	D - BACK PORCH	2.788 μs (63 dots)	2.336 μs (94 dots)	2.186 μs (140 dots)
	E - ACTIVE TIME	25.398 μs (574 dots)	21.715 μs (874 dots)	14.022 μs (898 dots)
	F - FRONT PORCH	1.593 μs (36 dots)	0.099 μs (4 dots)	0.593 μs (38 dots)
V	f V	48.0520 Hz	77.0751 Hz	105.0518 Hz
	A - PERIOD	20.811 ms (614 lines)	12.974 ms (506 lines)	9.519 ms (514 lines)
	B - BLANKING TIME	0.915 ms (27 lines)	0.744 ms (29 lines)	0.482 ms (26 lines)
	C - SYNC WIDTH	0.102 ms (3 lines)	0.103 ms (4 lines)	0.037 ms (2 lines)
	D - BACK PORCH	0.712 ms (21 lines)	0.513 ms (20 lines)	0.352 ms (19 lines)
	E - ACTIVE TIME	19.896 ms (587 lines)	12.231 ms (477 lines)	9.038 ms (488 lines)
	F - FRONT PORCH	0.102 ms (3 lines)	0.128 ms (5 lines)	0.093 ms (5 lines)
SYNC POLARITY(H/V)		Negative / Negative	Negative / Negative	Negative / Negative

		ADJUSTMENT
		HV7 - 4
DOT CLOCK		93.4300 MHz
H	f H	69.9850 KHz
	A - PERIOD	14.289 μs (1,335 dots)
	B - BLANKING TIME	3.329 μs (311 dots)
	C - SYNC WIDTH	1.092 μs (102 dots)
	D - BACK PORCH	1.820 μs (170 dots)
	E - ACTIVE TIME	10.960 μs (1,024 dots)
	F - FRONT PORCH	0.417 μs (39 dots)
V	f V	165.0590 Hz
	A - PERIOD	6.058 ms (424 lines)
	B - BLANKING TIME	0.457 ms (32 lines)
	C - SYNC WIDTH	0.043 ms (3 lines)
	D - BACK PORCH	0.343 ms (24 lines)
	E - ACTIVE TIME	5.601 ms (392 lines)
	F - FRONT PORCH	0.071 ms (5 lines)
SYNC POLARITY(H/V)		Negative / Negative

5.4 Acceptable timing

- If your timing is within following specification, this CRT display can automatically function with a certain size and position.

Horizontal: Sync frequency: 30.0 ~ 69.0 kHz
 Blanking Time: $\geq 3.4 \mu\text{s}$
 Back Porch: $\geq 1.25 \mu\text{s}$
 Front Porch: \leq Back Porch
 Sync Width: $\geq 1.2 \mu\text{s}$

Vertical: Sync frequency: 50.0 ~ 160.0 Hz
 Blanking Time: $\geq 0.5 \text{ ms}$
 Back Porch: $\geq 0.4 \text{ ms}$
 Sync Width: $\geq 0.045 \text{ ms}$

- Several items like size, position and distortion can be adjusted through OSD menu, and if you want to keep it, please push the key $\boxed{1}$ for memory, or keep the key untouched for about 20 seconds, it is automatically memorized.

NOTE : In case of RECALL, the key is untouched for about 30 seconds, RECALL function will be cancelled.

Please note, however, that there is the case you can not get the size and/or position you want, (for example, in case Display video Time is too short, you can't get bigger size of the image.)

- The CRT adopted in this CRT display is designed to minimize the moire phenomenon at suitable size for typical display modes. However, there might be a display format among many formats, in which the moire phenomenon appears on this display.

5.5 Signal level and input impedance

5.5.1 Video Signal level

- This CRT display is adjusted at the factory using 0.7Vpp Video Signal. Black level is 0 V.

5.5.2 Sync Signal level

- H/V Separate, H/V Mixed: TTL level
- Sync on Green : 0.3 V p-p $\pm 0.015\text{V}$

5.5.3 Audio Signal Level

Maximum audio input level is 2.0Vrms (f: 1kHz, sinewave)

Note: This CRT display is designed that the Sound microphony on image is not visible less than 0.5Vrms audio input level. If the Sound microphony appears, please reduce audio output level by Audio Volume Key.

5.5.4 Input impedance

- Video input: 75Ω
- Sync input: $\geq 1 \text{ k}\Omega$

5.6 Display performance

5.6.1 Display area

1) PRESET TIMING

MODE 1

WIDTH : $300 \text{ mm} \pm 5 \text{ mm}$
 HEIGHT : $225 \text{ mm} \pm 5 \text{ mm}$

2) RESERVATION TIMING

MODE 2~7

WIDTH : $300 \text{ mm} \pm 7 \text{ mm}$
 HEIGHT : $225 \text{ mm} \pm 7 \text{ mm}$

MODE 8

$286 \text{ mm} \pm 7 \text{ mm}$
 $229 \text{ mm} \pm 7 \text{ mm}$

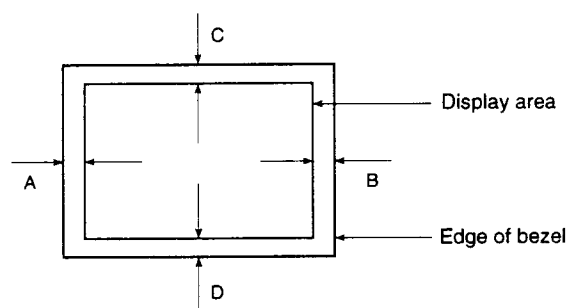
5.6.2 Centering

1) PRESET TIMING (MODE1)

IA - BI $\leq 4 \text{ mm}$
 IC - DI $\leq 4 \text{ mm}$

2) RESERVATION TIMING (MODE2~8)

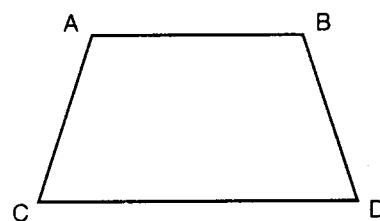
IA - BI $\leq 7 \text{ mm}$
 IC - DI $\leq 7 \text{ mm}$



5.6.3 Distortion

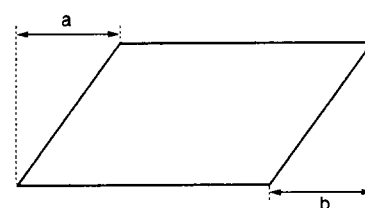
1) Trapezoid

IAC - BDI $\leq 3 \text{ mm}$
 IAB - CDI $\leq 2 \text{ mm}$



2) Parallelogram

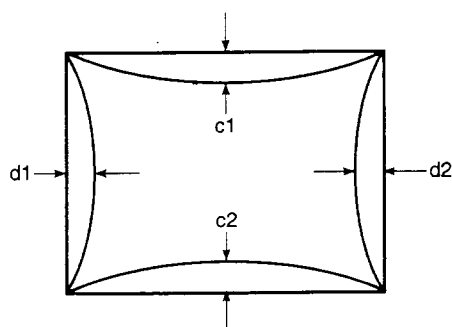
a, b $\leq 2 \text{ mm}$



3) Pincushion and Barrel

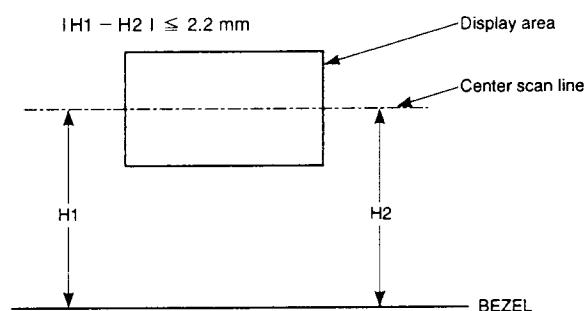
$$|C1|, |C2| \leq 2.0 \text{ mm}$$

$$|d1|, |d2| \leq 2.0 \text{ mm}$$



5.6.4 Rotation

$$|H1 - H2| \leq 2.0 \text{ mm}$$



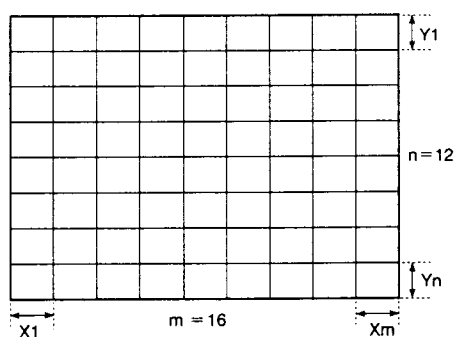
5.6.5 Linearity

Horizontal linearity

$$= \frac{X_{\text{max.}} - X_{\text{min.}}}{X_{\text{max.}} + X_{\text{min.}}} \times 100 \% \leq 7 \%$$

Vertical linearity

$$= \frac{Y_{\text{max.}} - Y_{\text{min.}}}{Y_{\text{max.}} + Y_{\text{min.}}} \times 100 \% \leq 6 \%$$



<Conditions>

Display image ----- crosshatch pattern

Maximum and minimum values should not be adjacent to each other.

X max. is maximum value among X1~Xm

X min. is minimum value among X1~Xm

Y max. is maximum value among Y1~Yn

Y min. is minimum value among Y1~Yn

5.7 General performance

5.7.1 Video output

Bandwidth	86 MHz (Typ.)
-----------	---------------

5.7.2 Maximum luminance

Value	130 cd/m ² (Typ.) for 5% white field at the center of the display area. 103 cd/m ² (Typ.) for 100% white field at the center of the display area. Specified by 9300 K + 8 MPCD
Conditions	Display image : White full flat field Luminance : Max. (Contrast : Max.) (Brightness : Detent point)

5.7.3 Minimum luminance

Value	$\leq 26 \text{ cd/m}^2$ at the center of the display area. Specified by 9300 K + 8 MPCD
Conditions	Display image : White full flat field Luminance : Min. (Contrast : Min.) (Brightness : Detent point)

5.7.4 Brightness variation

Value	70 % (Min.) Variation = $C/A \times 100$
Conditions	Display image : White full flat field Luminance : MAX (Contrast : MAX) (Brightness : Detent point) A ; Luminance at center position C ; Luminance at position of lowest brightness

5.7.5 Display area regulation

	Display area variation	Range of variation
Due to Luminance	within 1.0 %	26~103 cd/m ² (white flat field)
Due to Power Supply	within 0.5 %	AC : 90 - 132 V or 198 - 264 V
Due to Temperature	within 1.0 %	20° C ± 20° C

5.7.6 Color Point

< Conditions >

Display image : White flat field at the center of the display area.

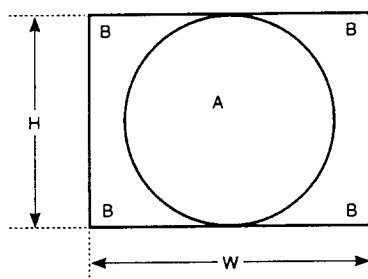
Luminance : Brightness Detent point.

Contrast	max	min
Value	9300 K + 8 MPCD $x = 0.283 \pm 0.020$ $y = 0.298 \pm 0.020$	9300 K + 8 MPCD $x = 0.283 \pm 0.020$ $y = 0.298 \pm 0.020$

5.7.7 Misconvergence

Center area of display (A) : 0.3 mm (Max.)

Corner area of display (B) : 0.4 mm (Max.)



<Conditions>

Display image : Crosshatch pattern mixed with R, G and B colors.

Convergence gauge : KLEIN CM7AG or equivalent.

Display area : W x H 300 x 225 mm

5.7.8 Purity

Conspicuous mislanding shall not be visible within display area at a distance of 60cm from CRT surface.

<Conditions>

Display image : White flat field

Luminance : Contrast max, Brightness

Display area : 300 x 225 mm

5.7.9 White Uniformity

$x_a - x_c \leq \pm 0.015$

$y_a - y_c \leq \pm 0.015$

x_a : x coordinate at the CRT center

x_c : x coordinate at any other point

y_a : y coordinate at the CRT center

y_c : y coordinate at any other point

<Conditions>

Display image : White flat field

Luminance : 103 cd/m² at the center of display area

Display area : 300 x 225 mm

5.7.10 Jitter

Invisible at a distance of 60 cm from CRT surface.

5.7.11 Audio

Electric Characteristics

	Item	Condition	Specification		
			Min.	Typ.	Max.
Line Input	Line Input signal level	f: 1kHz			2.0Vrms
	Line Input Impedance	-		24k Ω	
Audio-SP	Maximum Power Output (Electric)	f: 1kHz, THD: 1%	1W + 1W	3W + 3W	
	Signal to Noise Ratio	f: 1kHz		45dB	
	Channel Separation	f: 1kHz		40dB	
	Distortion	f: 1kHz, Output: 1W			1%
	Responce Characteristics	THD: 1% Output: 1W 0dB at 1kHz	100Hz	6dB	
			100Hz	6dB	
Heaedphone	Maximum Electric Power Output	f: 1kHz, THD: 1%, Rc: 32 Ω	5mW	7mW	
	Distortion	f: 1kHz, Output: 1mW Rc: 32 Ω			1%
Mic	Microphone Sensitivity	f: 1kHz, Pin=1Pa (0dB=1V/Pa)		-43dB	

6. ENVIRONMENTS

6.1 Ambient temperature, humidity and altitude

	Operating	Storage and shipment
Temperature	0 ~ 40° C (32 ~ 104° F)	-20 ~ +60° C (-4 ~ 140° F)
Humidity	5 ~ 90 % *	5 ~ 90 % *
Altitude	3,000 m (Max.) (10,000 ft)	12,000 m (Max.) (40,000 ft)

* Non-condensation

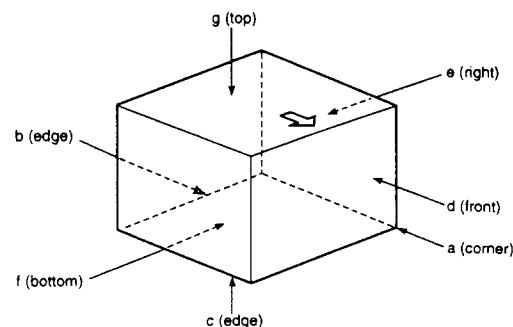
6.2 Vibration and shock

6.2.1 Vibration

	Order of tests	Direction of vibration		Acceleration		Frequency	Sweep	Test time		
				Non-operation	Storage and shipment					
Unpacked	1	Vertical	Up to down	2.9 m/s ² (0.3 G)		5 - 55 Hz	120 s	30 min.		
	2	Horizontal	Front to back					15 min.		
	3		Right to left							
Packed	1	Vertical	Up to down		10m/s ² (1.0 G)	5 - 50 Hz	810 s Log sweep	40 min.		
	2	Horizontal	Front to back		5 m/s ² (0.5 G)			20 min.		
	3		Right to left							

6.2.2 Shock (Drop test)

Unpacked	20 G One time for each face (6 faces) (non-operation)			
Packed	Order of drop	Face to drop is to face the floor. (See the figure)	Height	Number of drop
	1	a, b, c, d, e, g	60 cm	1 time for each
	2	f	70 cm	



7. REGULATORY STANDARDS

7.1 Safety standards

Applicable standards

- UL 1950; Listing
- CSA 22.2 No. 950; Certification
- TüV EN60950 (IEC950)/GS (ZH1)
- NORDIC (SEMKO, NEMKO, DEMKO, FIMKO)

7.2 X-Ray standards

Applicable standards

- DHHS, 21CFR subchapter J
- PTB; Approval
- HWC

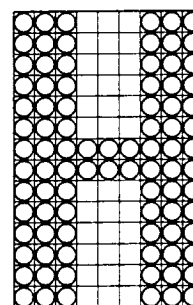
7.3 EMC standards

Applicable standards

- VCCI class 2
- FCC part 15, Subpart B, class B
- DOC class B
- CISPR22 class B (EN55022)

<EMI test pattern>

White, full "H" characters (9 x 14 dots), block (12 x 24 dots) "H" character font is as follows:



7.4 OTHERS

Applicable standards

- Energy Star
- MPR II
- TCO '92
- ISO 9241-3 (Ergonomics)

8. POWER CORD

UL and CSA approved AC power cord is put in packaged. Length : 2.0 meter (6.56 feet) if you use in other country (for example Germany), please use a power cord approved by safety agency of each country (VDE in Germany).

9. SIGNAL CABLE

Signal cable with Mini D-Sub 15P connectors at both end is put in package.

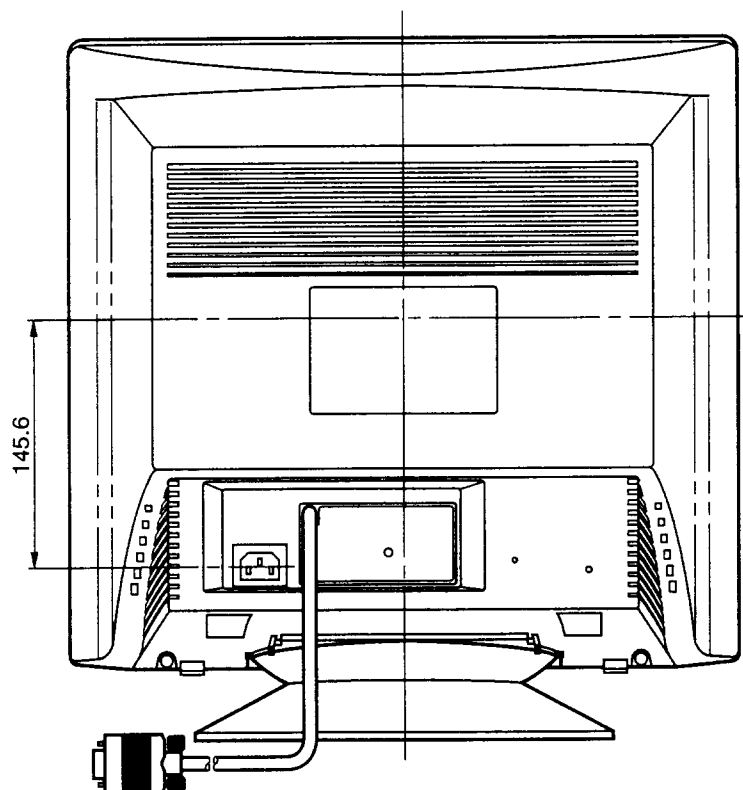
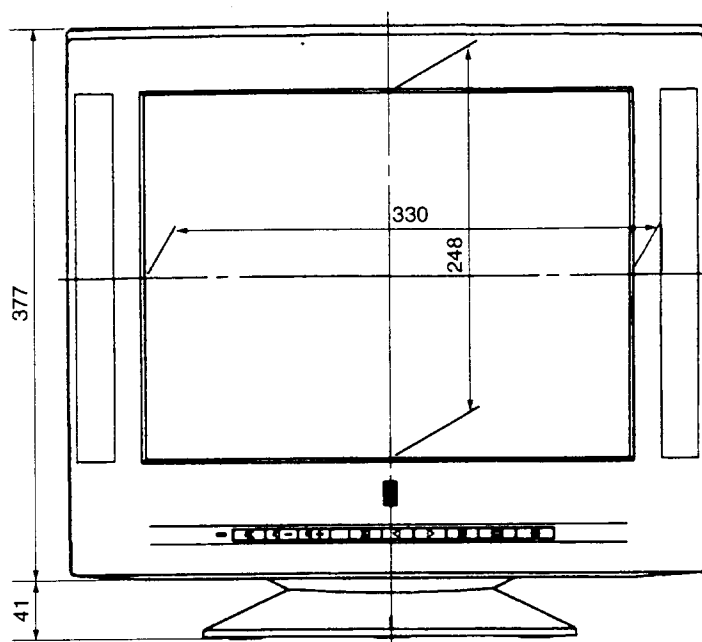
Length : 1.3 meter

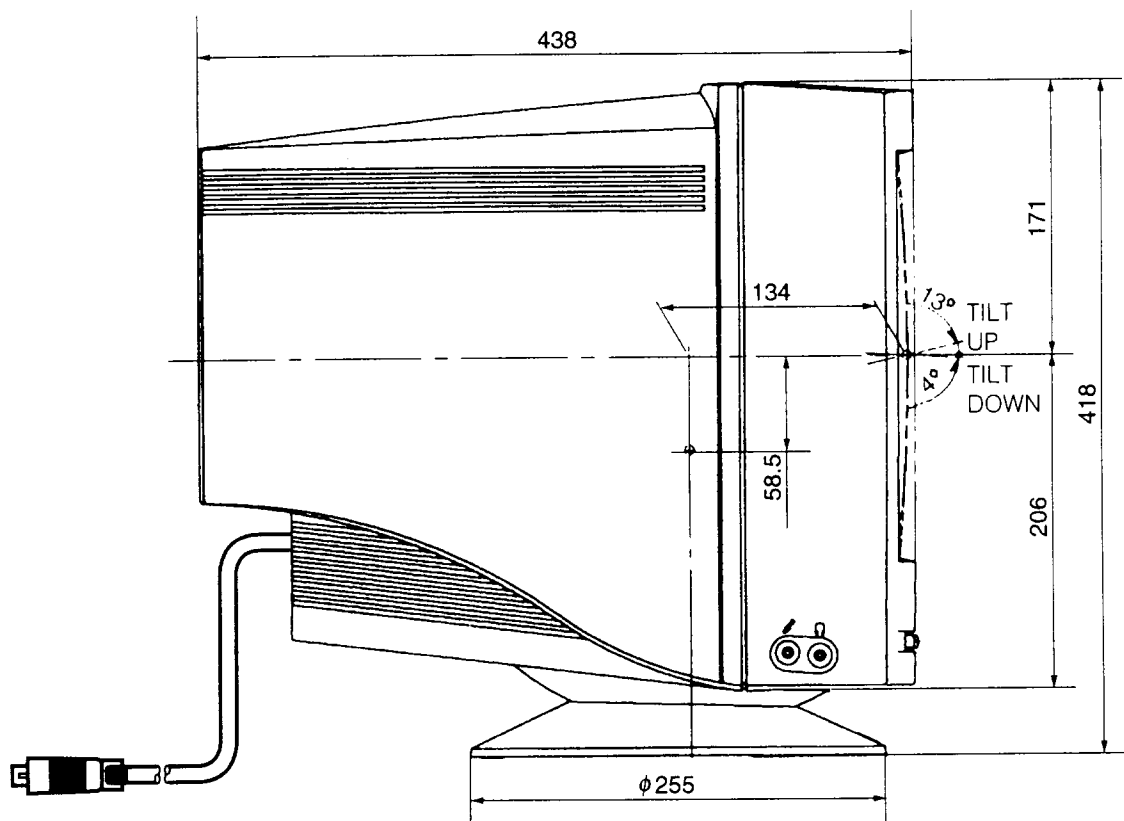
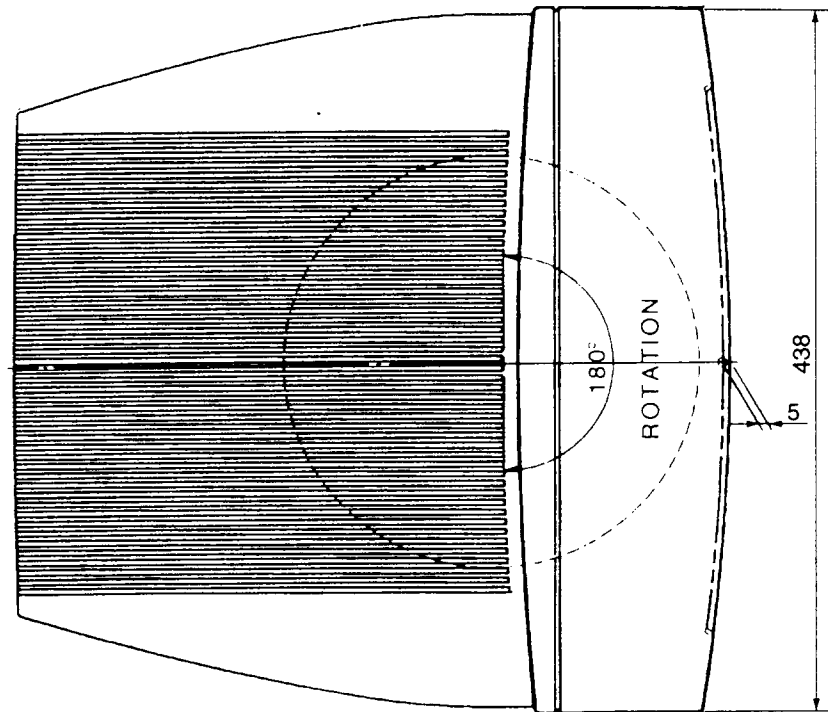
10. RELIABILITY

>55.000hrs (demonstrated MTBF)

For Service Manuals
MAURITRON SERVICES
 8 Cherry Tree Road, Chinnor
 Oxfordshire, OX9 4QY.
 Tel (01844) 351694
 Fax (01844) 352554
 email:- mauritron@dial.pipex.com

DIMENSIONS



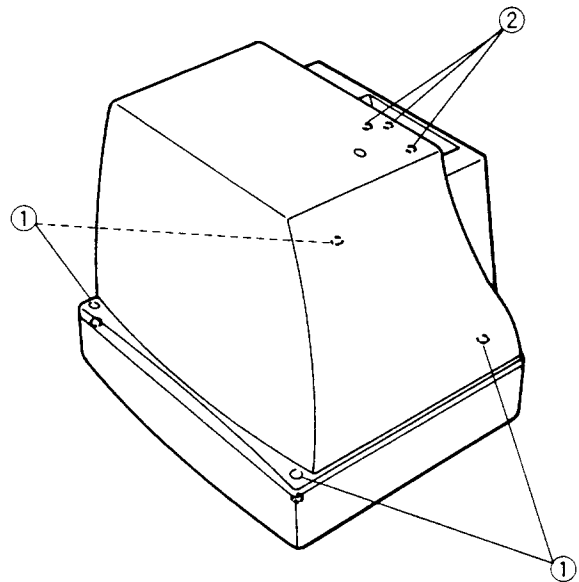
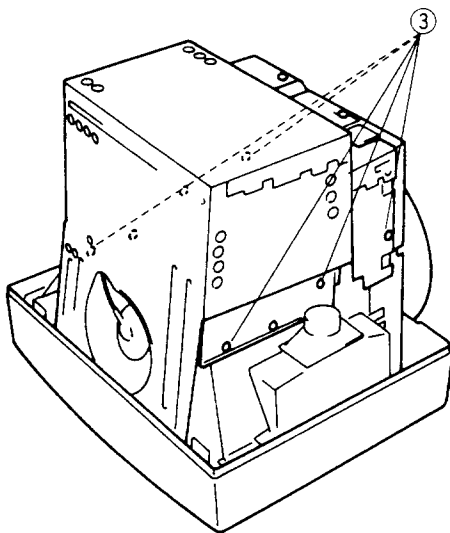


DISASSEMBLY INSTRUCTIONS

1. Rear cover removal

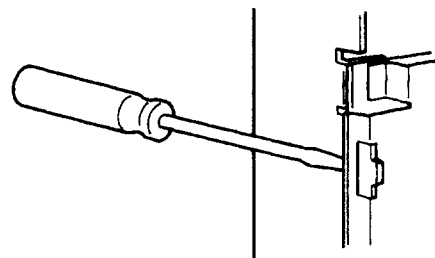
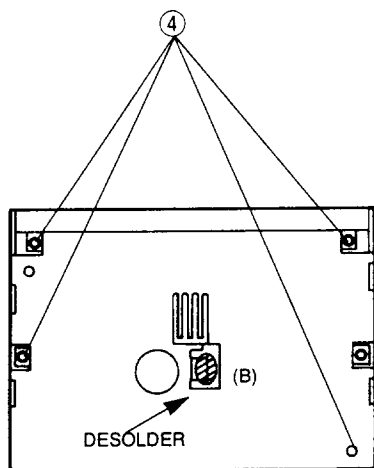
Note: Spread a mat underneath to avoid damaging the CRT surface.

- 1) Remove four large screws ① and small screw ② from the rear cover.
- 2) Remove the cover.
- 3) Remove ten screws ③ from the shield case.
- 4) Remove the shield case.

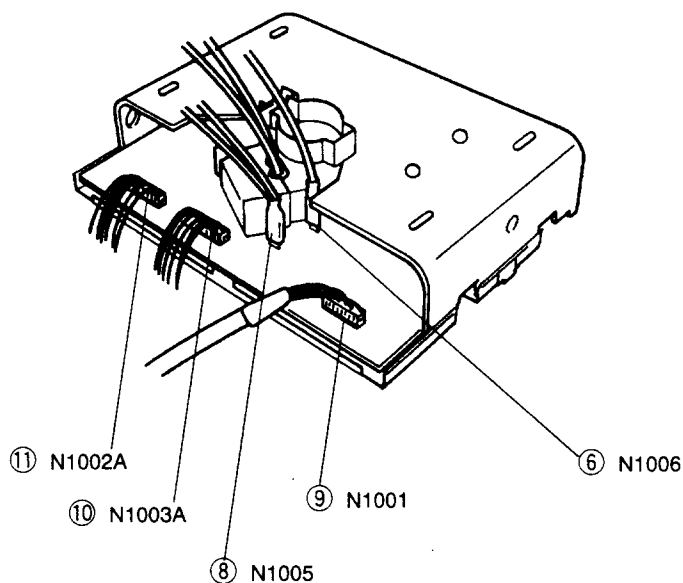
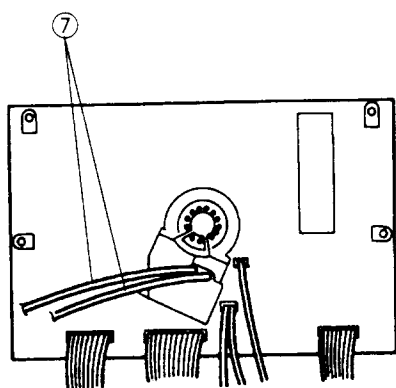
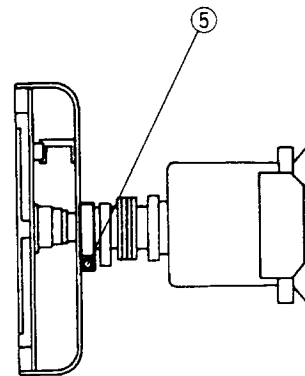


2. Video PCB removal

- 1) Remove four screws ④ securing the shield cover.
- 2) Desolder (B) and Remove the shield cover (A).

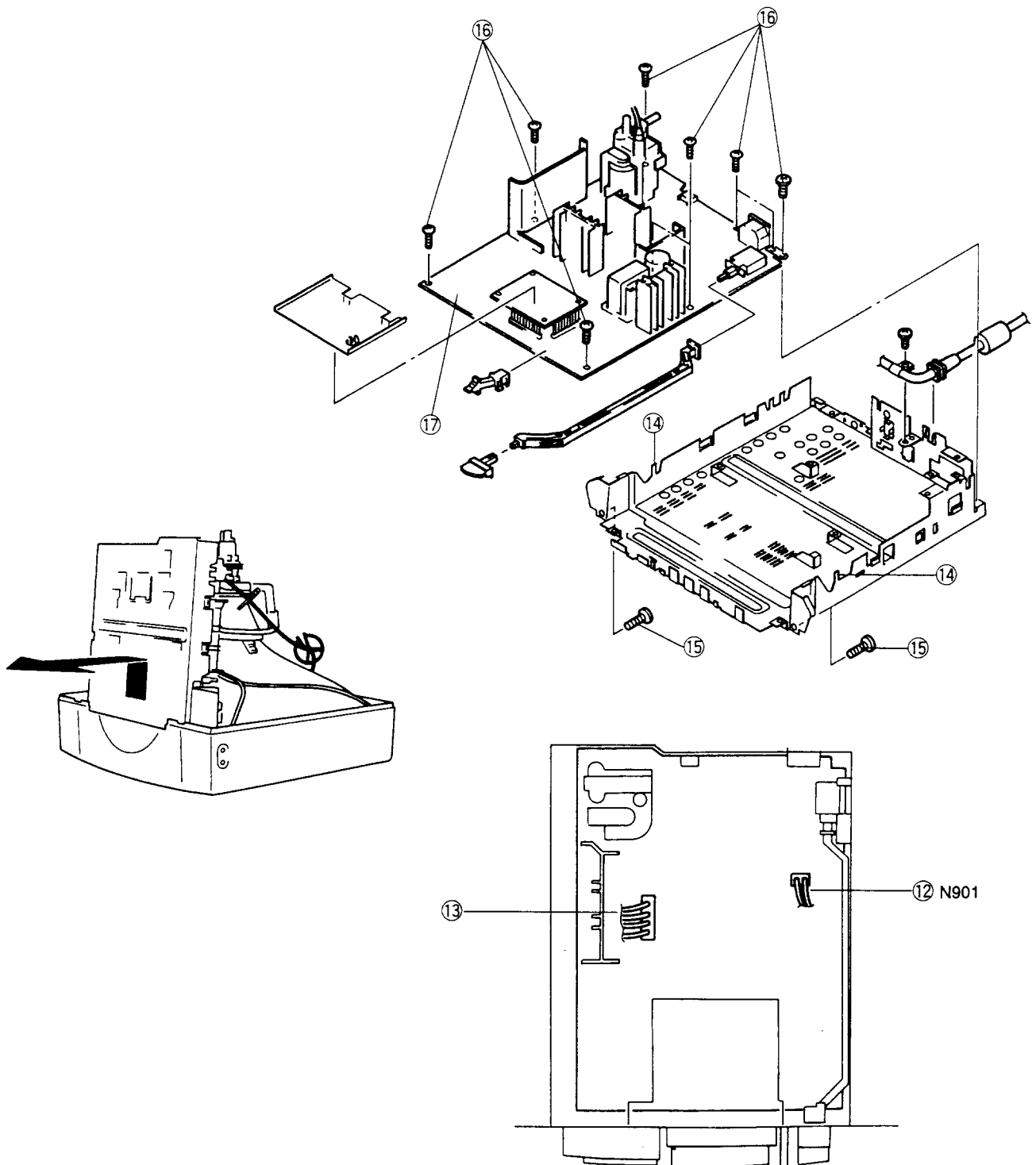


- 3) Loosen the screw ⑤ securing the CRT neck and the shield case.
- 4) Remove the PCB block from the CRT.
- 5) Remove the N1006 connector ⑥.
- 6) Remove two focus leads ⑦ after pulling up the focus lead securing-lever.
- 7) Remove ground connector ⑧ (N1005) connected to the PCB.
- 8) Remove N1001 connector ⑨.
- 9) Remove N1003A connector ⑩.
- 10) Remove N1002A connector ⑪.
- 11) Remove the PCB from the shield case.



3. Main PCB Removal

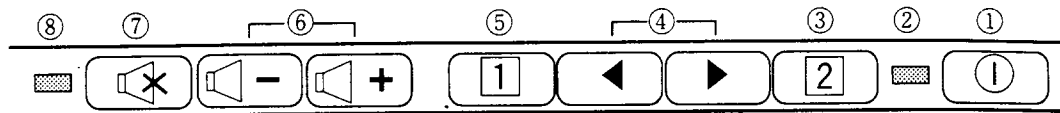
- 1) Remove the connector ⑫ (N901) of the degauss coil.
- 2) Remove the DY connector ⑬.
- 3) Remove the anode cap.
- 4) Remove two ground connector ⑭.
- 5) Move the CRT face down and remove two screws ⑮ securing the bottom fitting metal.
- 6) Remove the fitting metal and the PCB from the cabinet.
- 7) Remove ten screws ⑯ securing the fitting metal and PCB.
- 8) Remove the PCB ⑯ with the figure referenced.



CONTROL LOCATION

Basic operation of parts

Control panel



- ① Power switch To switch on and off the monitor.
- ② Pilot LED Light up green when power is ON ; turns yellow in power management mode.
- ③ OSD 2 key Selected or switch change data.
- ④ OSD ◀ ▶ key (1) To display contrast menu ; to adjust contrast
(2) To adjust level of selected item.
- ⑤ OSD 1 key To display main menu ; quit menu. Store change data in the memory.
- ⑥ Volume key Adjusts the sound volume for the built-in speakers and the headphone terminals.
- ⑦ Mute key Turns the built-in speakers and the headphone terminals sound ON and OFF.
- ⑧ Mute LED Indicates that the built-in speakers are in mute operation.

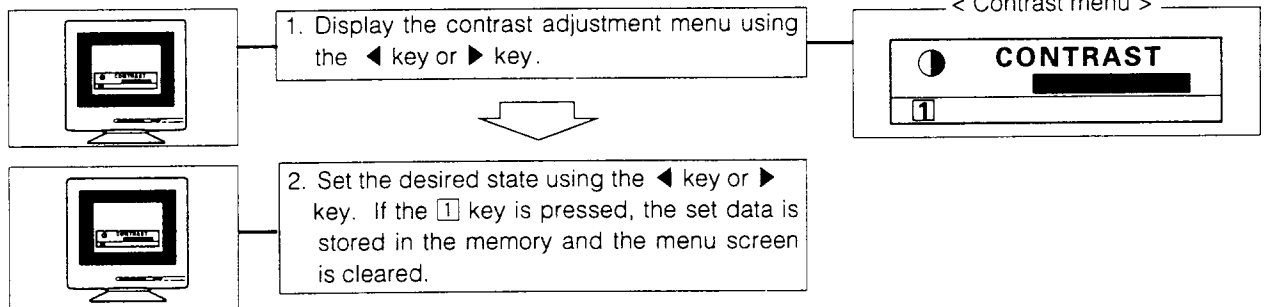
Examples of on-screen operation

A. Contrast adjustment

Display changes

Steps of operation

On-screen display changes

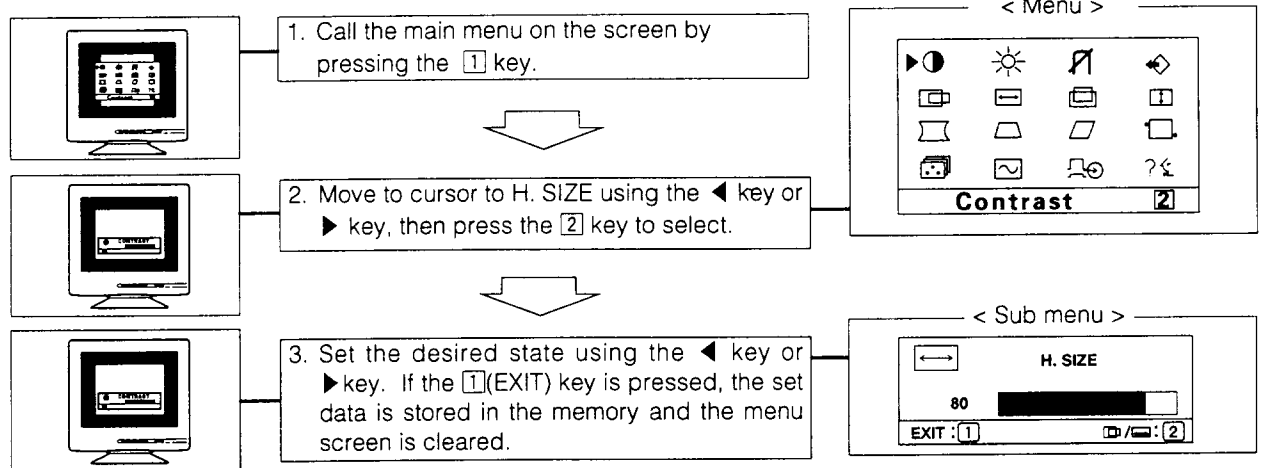


B. H. size adjustment

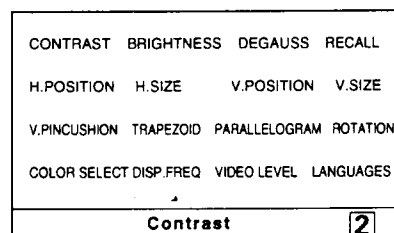
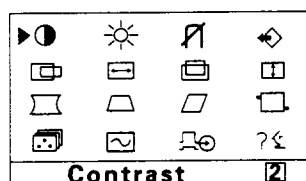
Display changes

Steps of operation

On-screen display changes



Main menu



CAUTION FOR ADJUSTMENT AND REPAIR

1. Degaussing is inevitably required at purity adjustment or convergence adjustment.
2. If you check or adjust electrical specification or function, more than 20 minutes burn-in is required.
3. Reforming of the lead wire is required after your repair work.
4. Prior to starting work, be sure to check that the input signal is at the specified timing and that the polarity is as specified in all modes.
5. Brightness control: After mounting the rear cover, brightness tends to decrease about 5 cd/m^2 on a flat white field and about 1 cm/m^2 on a white raster field. This should be taken into consideration.
6. Brightness stabilizing time: It takes about 20 to 50 seconds for the brightness to stabilize after turning the power off for 5 seconds (AC). Therefore, care should be taken to this.
7. Aging should be made in white raster of $30 \sim 50 \text{ cd/m}^2$ and raster size, $320 \times 240 \text{ mm}$ before adjusting the ITC.
8. Set the CONTRAST to MAX and BRIGHTNESS to CENTER using the O.S.D.

CAUTION FOR SERVICING

When servicing or replacing the CRT, high voltage sometimes remains on the anode. So, completely discharge high voltage before servicing or replacing the CRT so as to prevent a shock to the service person.

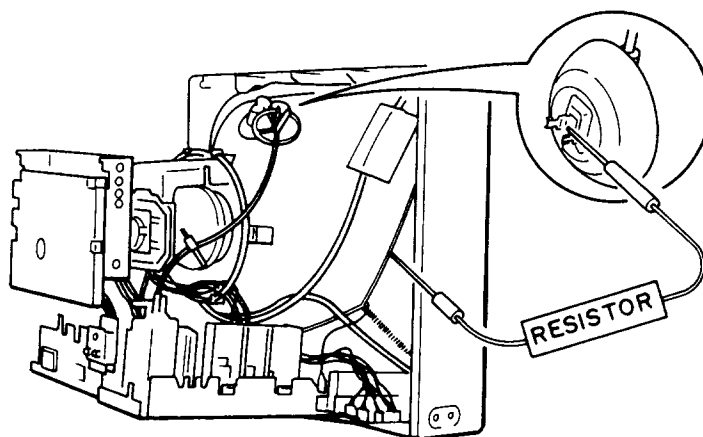
CRT Anode Discharge

1. When you check the CRT anode or replace the CRT, discharge the CRT anode to the external conductive coating (aquadag) of CRT, especially when checked right after power turn-off.
2. Ground one end of a jumper wire which has a resistor ($30 \text{ kV} < \text{resisting pressure } 100 \text{ M}\Omega$) and connect the other point to the CRT anode.

Note: Grounding must be done first.

This model has a section that does not share a common ground with the power supply section. The different sections are referred to as the HOT section and the COLD section in the precautions below.

1. Do not touch the HOT section and the COLD section at the same time. You may be hit by an electric shock.
2. Do not short the HOT section to the COLD section. This could blow the fuse or damage parts.
3. Never measure the HOT section and the COLD section at the same time when using tools such as oscilloscopes or multimeters.
4. Always unplug the unit before beginning any operation such as removing the chassis.



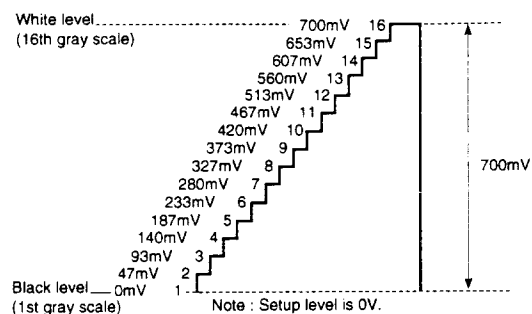
OTHER TOOLS

- Oscilloscope (dual trace)
- Scope probe – Attenuation: 100:1
Attenuation: 10:1
- Digital Voltmeter – Range: 0 to 1000 V DC
Accuracy: 0.1 %
- TV color Analyzer II – that reads luminance and chromaticity X and Y coordinates.
- Digital High Voltmeter
- AC power supply – Output voltage : 0 to 300 V
- Degaussing coil
- Convergence meter
- Scale
- Double-faced scale
- Microscope – Scale factor: 50
- White racquer (Paint)

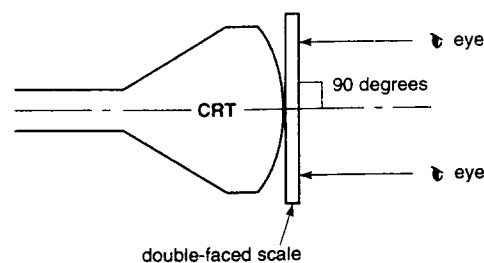
STANDARD CONDITION OF ADJUSTMENT PROCEDURE

- Signal timing : Standard timing 1024 x 768
(See page 5)
- Display pattern : White, full "H" character
- Signal level : V/H: TTL level video: 700 mV
- Input source : AC 120 V, 60 Hz
- Ambient temperature : Room temperature
- Warm-up time : More than 30 minutes
- Brightness control : Center
- Contrast control : Max.
- Magnetic field : Vertical: 40 μ T
Horizontal: 0 μ T
- Signal cable : Attached

Video input signal from PC.



- Use a Helmholtz device to adjust an unit with no horizontal magnetic field and a vertical field of 40 μ T. Inspect the unit under the same conditions.
- The ambient illuminance must be 200 lux.
- Use an external degaussing coil any time the DEGAUSS switch does not remove color shading.
- To check the image width, height, linearity and distortion, proceed as below.



Measure level with respect to tube axis.

1. Software operating procedure

- A) Power on the computer.
- B) Connect the Communication cable for monitor adjustment.
- C) Insert the adjustment disk into the drive.
- D) At the A:> prompt type "VSR" then press [ENTER].

A function to identify the connected monitor is provided to prevent accidents due to erroneous use of the HV7 chassis program. If this program is used for any monitor other than the HV7, the message reading "This monitor is not an HV7 chassis. All further activity has been prevented" is displayed and the operation is stopped.

- E) Refer to the adjustment procedures.

2. Adjustment Program

Main Menu of Adjustment Program

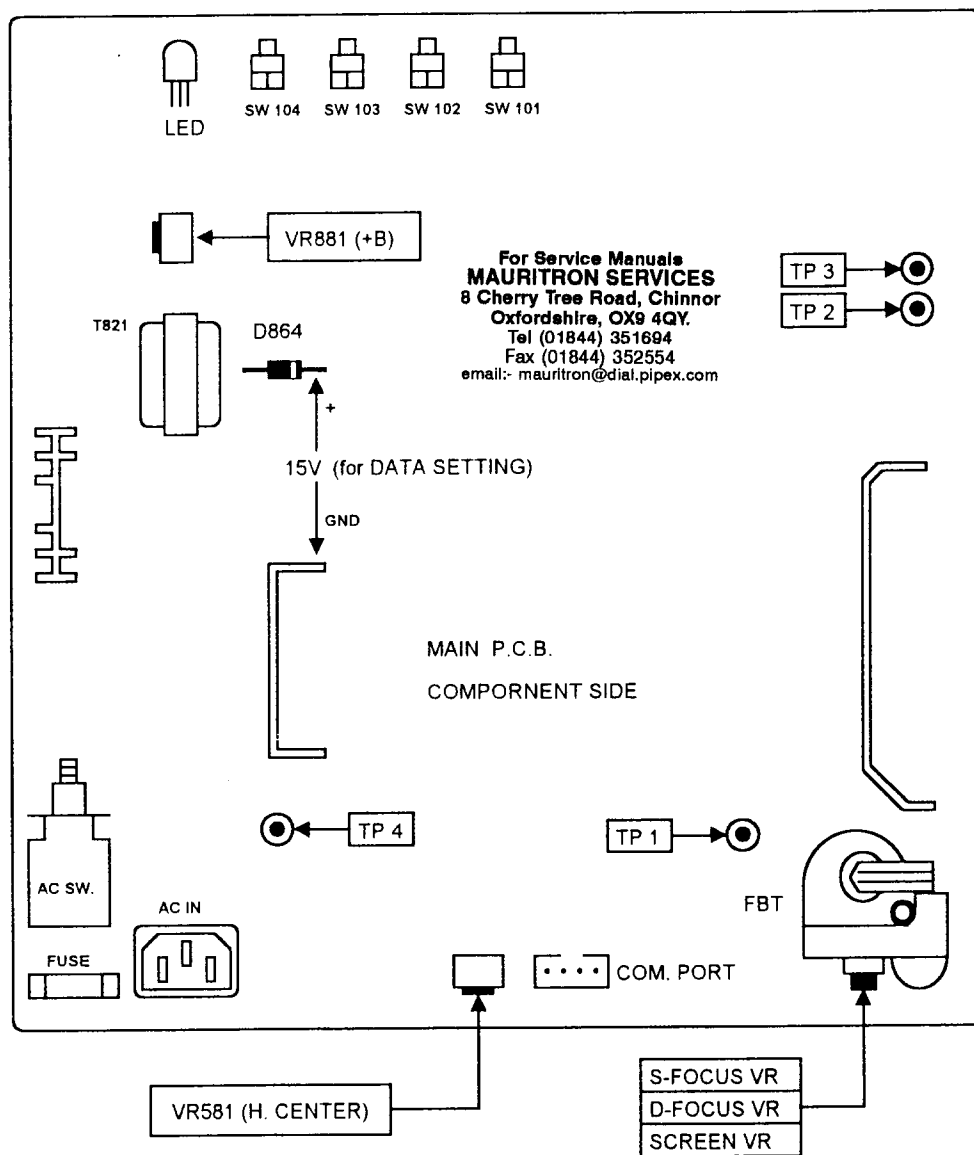
<<HV7 ADJUSTMENT PROGRAM MENU>> (e: exit, q: quit) <Ver *.*>

1) Load data from FILE	6) Save data to FILE
2) Adjust VSR setting	7) Special ADJUST
3) Adjust STD setting	8) Information Service
4) Adjust Factory preset	9) Show Version & Error
5) Clear User preset	

Description of Function of Each Menu

- 1) **Load Data from File**
This transfers the data file from the disk to the EEPROM on the monitor.
- 2) **Adjust VSR Setting**
To guarantee that the full range of horizontal frequencies operate correctly. The reference voltage and the distortion offset data should be set.
- 3) **Adjust STD Setting**
This is used to control the size and color position for standard timing.
- 4) **Adjust Factory Preset**
Makes adjustments to the factory presets. This data is also referenced when in modes other than the preset mode.
- 5) **Clear User Preset**
Clear the data written in the user preset domain. There is no data in the user presets when the product shipped from the factory.
- 6) **Save Data to File**
Transfers the data from the EEPROM on the monitor to a data file on a floppy disk or hard drive. The data file can be named anything as long as it is less than 8 characters long.
- 7) **Special Adjust**
This menu has the following functions
 - ① Color and brightness adjustment
 - ② Related data is automatically set on the basis of adjustment results to save the time for adjustment.
(Example: Color adjustment applies only to the 9300 K, while 6550 K and user color data are automatically set.)
 - ③ To prevent operation errors in changes of various type of control flags, these flags are automatically returned to the default settings (Final Tune).
- 8) **Information Service**
Displays the H/V frequencies that is being supplied to the monitor and gives the operational status of the monitor.
- 9) **Show Version and Error**
Shows the version of the microprocessor that is in the monitor. Also, if there is an error in the operation of the monitor.
The error is displayed on the screen of the PC.

SERVICE ADJUSTMENT CONTROL LOCATION



REQUIRED ADJUSTMENT PROCEDURE AFTER A PARTS IS REPLACED (✓ IS REQUIRED)

ADJUSTMENT ITEM		REPLACED PARTS															
		MAIN P.C.B.	CTL. P.C.B.	VIDEO P.C.B.	CRT DY	IC1301 IC1302 IC1401	Q1051 Q1052 Q1151 Q1152 Q1251 Q1252	IC401	IC501	Q673 Q674 Q675	Q581 Q582	IC521 Q521 FBT	IC821 Q821 T821	IC103	IC104	IC101	IC902
A	DATA SETTING *	✓	✓														✓
B	+B ADJUST	✓	✓										✓				✓
C	H. DRIVE DUTY	✓	✓						✓						✓		✓
D	H. DRIVE +B	✓	✓						✓	✓		✓			✓		✓
E	EHT	✓	✓						✓	✓		✓			✓		✓
F	H. CENTER	✓	✓								✓	✓					✓
G	H.V. SIZE / POSI V.PCC (1)	✓	✓					✓	✓			✓			✓		✓
H	V. LIN (C)	✓	✓					✓						✓			✓
I	H.V. SIZE / POSI V.PCC (2)	✓	✓					✓	✓			✓			✓		✓
J	BRIGHTNESS, COLOR	✓	✓	✓	✓							✓					✓
K	FOCUS	✓	✓									✓					✓
L	FINAL TUNE	✓	✓	✓	✓	✓						✓					✓
M	DATA SAVING	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PURITY & CONVERGENCE				✓												
	SCREEN CHECK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

* (A) DATA SETTING : Do not load standard data except when main PCB (With/CTL PCB) and IC902(EEPROM) are replaced.

CTL. PCB = Micro controller and DAC PCB.

ADJUSTMENT PROCEDURE





















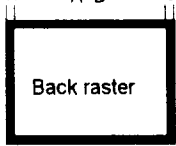
1. Description of Adjustment Method

ITEM		◇ Test Meter ▼ Test Point □ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
Program Menu						
A	STANDARD DATA SETTING		A1		Do not connect the power and signal cable to monitor.	
	1) Load data from FILE	▼ D864 - GND Refer to service adjustment control location.	A2		Apply 15V to D864 CATHODE and GND. (Do not apply 5V to IC101. Because IC862 supply 5V and RESET signal to IC101)	
			A3		Set the cell to the menu at left and press	
			A4		A message FILE -> EEPROM FILE NAME (q or Q escape) [] : is displayed. So key in the DACDATA.DAT (when using the standard data) and press	
			AE		Disconnect 15V cable, then turn on the power switch of the monitor.	
Do not load standard data except when Main P.C.B. and EEPROM are replaced.						
B	+B ADJUST	◇ Digital voltmeter ▼ TP4 ~ GND □ RGB OFF (SYNC ONLY)	B1 B2	Mode-1	Check that the input signal to the monitor is [fH 60.0KHz] and [fV 75.0Hz]. Make the adjustment to the value shown at right by turning the VR881 on the main PCB.	80V ±0.5V
C	H. DRIVE DUTY	◇ Oscilloscope	C1		Set the cell to the menu at left and press	 $t2 + t1 \times 100 =$ 53% ±3% 51% ±3% 48.5% ±3% 46% ±3%
	2) Adjust VSR setting	▼ TP3 ~ GND □ Crosshatch <div>Oscilloscope Range</div> HV7-1 10μs/div. HV7-2 5μs/div. HV7-3 5μs/div. HV7-4 2μs/div.	C2		Set the cell to the adjusting mode <u>INTP [0]</u> and press	
			C3	HV7-1	Check that the input signal to the monitor is [fH 29.5KHz] and [fV 48.0Hz] and press	
			C4		Set the cell to <u>H. DRIVE DUTY</u> and press	
			C5		Make the adjustment to the value shown at right by using and	
			C6		Register by pressing and return to menu of C2 by pressing	
			C7	HV7-2	Input signal [fH 39.0KHz] and [fV 77.1Hz]	
			C8		Select Adjusting mode <u>INTP [1]</u> , and repeat above procedure.	
			C9	HV7-3	Input signal [fH 54.0KHz] and [fV 105.0Hz]	
			C10		Select Adjusting mode <u>INTP [2]</u> , and repeat above procedure.	
			C11	HV7-4	Input signal [fH 70.0KHz] and [fV 165.0Hz]	
			C12		Select Adjusting mode <u>INTP [3]</u> , and repeat above procedure.	
			CE		Press to return to main menu.	

Note 1 : Check to be sure that the program disk name is **TXD1734** before making necessary adjustment.

















Note 2 : Unless otherwise specified, the monitor state is as given at right.

Note 3 : The underlined places indicate the adjustment items on the screen of the PC.

ITEM Program Menu		<input type="checkbox"/> Test Meter <input type="checkbox"/> Test Point <input type="checkbox"/> Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
D	H. DRIVE +B 2) Adjust VSR setting	<input type="checkbox"/> Digital voltmeter <input type="checkbox"/> TP2 ~ GND <input type="checkbox"/> Crosshatch	D1	HV7-1	Set the cell to the menu at left and press  .	20.5V ±0.5V
			D2		Set the cell to the adjusting mode <u>INTP [0]</u> and press  .	
			D3		Check that the input signal to the monitor is [fH 29.5KHz] and [fV 48.0Hz] and press  .	
			D4		Set the cell to <u>H. DRIVE +B</u> and press  .	
			D5		Make the adjustment to the value shown at right by using  and  .	
			D6		Register by press  and return to menu of D2 by press  .	
			D7	HV7-2	Input signal [fH 39.0KHz] and [fV 77.1Hz]	17.0V ±0.5V
			D8		Select Adjusting mode <u>INTP [1]</u> , and repeat above procedure.	
			D9	HV7-3	Input signal [fH 54.0KHz] and [fV 105.0Hz]	17.0V ±0.5V
			D10		Select Adjusting mode <u>INTP [2]</u> , and repeat above procedure.	
			D11	HV7-4	Input signal [fH 70.0KHz] and [fV 165.0Hz]	14.5V ±0.5V
			D12		Select Adjusting mode <u>INTP [3]</u> , and repeat above procedure.	
			DE		Press  to return to main menu.	
E	EHT ADJUST 2) Adjust VSR setting 7) Special ADJUST	<input type="checkbox"/> Digital voltmeter <input type="checkbox"/> TP1 ~ GND <input type="checkbox"/> RGB off (Sync only)	E1	HV7-4	Set the cell to the menu at left and press  .	150.0V ±0.5V
			E2		Set the cell to the adjusting mode <u>INTP[3]</u> and press  .	
			E3		Check that the input signal to the monitor is [fH 70.0KHz] and [fV 165.0Hz] and press  .	
			E4		Move the cell to <u>EHT</u> and press  .	
			E5		Make adjustment to the value shown at right by using  and  .	
			E6		Register by pressing  and return to the main menu by pressing  .	
			E7		Set the cell to the menu at left and press  .	
			E8		Select the <u>6: CALCULATE H.OUT +B</u> from the menu.	
			E9		This messages will appear : H +B Data Calculated . Hit Return Key !	
			EE		Press  to return to menu of E8 . Press  to return to the main menu.	
F	H. CENTER	<input type="checkbox"/> RGB off (Sync only)	F1	Mode-1	Set the Brightness to MAX on the OSD.	
			F2		Check that the input signal to the monitor is [fH 60.0KHz] and [fV 75.0Hz].	
			F3		Make the adjustment as shown at right by turning the VR581 on the main PCB.	
						Set the raster to the center with respect to the bezel.

ITEM Program Menu		<input type="checkbox"/> Test Meter <input type="checkbox"/> Test Point <input type="checkbox"/> Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
G	H/V. SIZE, POSI and V. PCC (1) 4) Adjust Factory preset	<input type="checkbox"/> Crosshatch	G1	Mode-1	Set the cell to the menu at left and press	H : 300mm ±5 V : 225mm ±5 H/V Posi : Center V. PCC : Best point
			G2		Check that the input signal to the monitor is [fH 60.0KHz] and [fV 75.0Hz] and press	
			G3		Set the cell to following items, press and make the adjustment to the value shown at right by using and	
					① <u>H. SIZE</u> ② <u>H. POSI</u> ③ <u>V. SIZE</u> ④ <u>V. POSI</u> ⑤ <u>V. PCC</u> ⑥ <u>PARALLELOGRAM</u> ⑦ <u>TRAPEZOID</u>	
			GE		After adjustment, return to the main menu by using and	
H	V. LIN (C) 3) Adjust STD setting	<input type="checkbox"/> Crosshatch	H1	Mode-1	Set the cell to the menu at left and press	
			H2		Check that the input signal to the monitor is [fH 60.0KHz] and [fV 75.0Hz] and press	
			H3		Set the cell to <u>V. LIN C</u> and press	
			HE		make the adjustment to the best point by using and After adjustment, return to the main menu by using	
I	H/V. SIZE, POSI and V. PCC (2) 2) Adjust VSR Setting	<input type="checkbox"/> Crosshatch	I1	HV7-1	Set the cell to the menu at left and press	H : 300mm ±5 V : 225mm ±5 H/V Posi : Center V. PCC : V. LIN : Best point
			I2		Set the cell to the adjusting mode <u>INTP [0]</u> and press	
			I3		Check that the input signal to the monitor is [fH 29.5KHz] and [fV 48.0Hz] and press	
			I4		Set the cell to following items, press and make the adjustment to the value shown at right by using and	
					① <u>H. SIZE</u> ② <u>H. POSI</u> ③ <u>V. SIZE</u> ④ <u>V. POSI</u> ⑤ <u>V. PCC</u> ⑥ <u>V. LIN (S)</u>	
			I5		After adjusting the above, return to menu of I2 by using	
			I6	HV7-2	Input signal [fH 39.0KHz] and [fV 77.1Hz]	
			I7		Select Adjusting mode <u>INTP [1]</u> , and repeat above procedure.	
			I8	HV7-3	Input signal [fH 54.0KHz] and [fV 105.0Hz]	
			I9		Select Adjusting mode <u>INTP [2]</u> , and repeat above procedure.	
			I10	HV7-4	Input signal [fH 70.0KHz] and [fV 165.0Hz]	
			I11		Select Adjusting mode <u>INTP [3]</u> , and repeat above procedure.	
			IE		After adjustment, return to the main menu by press	

Except H. SIZE and V. LIN(C),
other item is dose not register to
interpolation data.

ITEM Program Menu		<input type="checkbox"/> Test Meter <input type="checkbox"/> Test Point <input type="checkbox"/> Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
J	CRT CUT-OFF	<input type="checkbox"/> TV Color Analyzer II <input type="checkbox"/> RGB Off (Sync only)	J1	Mode-1	Set the Contrast to MAX, Brightness to Center and Color is 9300k using the OSD.	
	7) Special ADJUST 1: 9300K COLOR Adjust		J2		Check that the input signal to the monitor is [fH 60.0KHz], [fV 75.0Hz] and turn off the RGB signal.	
			J3		Set the cell to the menu at left and press  .	
			J4		Select <u>1: 9300K COLOR Adjust</u> from the menu.	
			J5		Make the adjustment <u>R, G and B Low Light</u> by using  ,  and Screen VR to CRT cut-off.	
			~			
			J14		Please refer to flow chart for this adjustment on page 28.	
	BRIGHTNESS COLOR ADJUST	<input type="checkbox"/> White window (5cm×5cm at center)	J15		Change to the pattern at left.	Y=130 cd/m ² x=0.283 ±0.20 y=0.298 ±0.20
			J16		Move the cell to the following items and make the adjustment to the value shown at right by using  and  .	
					<u>R. SUB CONT 9300K</u>	
					<u>G. SUB CONT 9300K</u>	
					<u>B. SUB CONT 9300K</u>	
			J17		Set Contrast to MIN using the OSD.	
	ABL	<input type="checkbox"/> White flat field (full window)	J18		Move the cell to the following items and make the adjustment to the value shown at right by using  ,  .	x=0.283 ±0.20 y=0.298 ±0.20
					<u>R. LOW LIGHT 9300K</u>	
					<u>G. LOW LIGHT 9300K</u>	
					<u>B. LOW LIGHT 9300K</u>	
					Adjust two colors only out of above three as shown in J13 on page 28.	
			J19		Change to the pattern at left.	
	1.0V ADJUST	<input type="checkbox"/> White window (5cm×5cm at center) 1.0V p-p video*	J20		Move the cell to <u>ABL</u> and make the adjustment to the value shown at right by using  ,  .	Y=113 cd/m ²
			J21		Press  to return to menu of J4.	
			J22		Change to the pattern at left.*	
			J23		Set the cell to the menu at left and press  .	
			J24		Select the <u>4: VIDEO 1.0Vpp ADJUST</u> from the menu.	
			J25		Set Input Video Level 1.0V using the OSD of the monitor.	
	DATA SETTING		J26		Make the adjustment to the value shown at right by using  ,  .	Y=130 cd/m ²
			J27		Press  to return to menu of J24.	
			J28		Select the <u>7: BRIGHTNESS LIMIT SETTING</u> from the menu.	
			JE		Press  to return to menu of J28 and Press  to return to the main menu.	

Should make Final Tune after this adjustment refer to item L on page 29.

Signal : Turn off the R, G, B (sync signal only)

Adjust Menu : 7) Special Adjust ▶ To Sub Menu

1: 9300K COLOR Adjust

CRT CUT-OFF ADJUSTMENT

WARNING

Do not turn the screen VR after this adjustment.

J 5 Set screen VR fully counterclockwise (Min).

J 6 Set data value to "95" for R, G, B Low Light

J 7 Set data value to "80" for BRIGHTNESS

J 8 Turn screen VR until the raster appears with any one of three (R, G, B) colors

If Red appears in **J 8**

J 9 Set Value to "00" for < R. Low Light 9300K >

J10 Turn screen VR until the raster appears with any one of two (G or B) colors.

If Green appears in **J10**

J11 Set Value to "00" for < G. Low Light 9300K >

J12 Adjust Screen VR to "0.46" cd/m² for Blue raster

J13 Adjust < R. Low Light 9300k > < G. Low Light 9300k > to [x=0.283 y=0.298]

If Blue appears in **J10**

J11 Set Value to "00" for < B. Low Light 9300K >

J12 Adjust Screen VR to "0.89" cd/m² for Red raster

J13 Adjust < R. Low Light 9300k > < G. Low Light 9300k > to [x=0.283 y=0.298]

If Green appears in **J 8**

J 9 Set Value to "00" for < G. Low Light 9300K >

J10 Turn screen VR until the raster appears with any one of two (R or B) colors.

If Red appears in **J10**

J11 Set Value to "00" for < R. Low Light 9300K >

J12 Adjust Screen VR to "0.46" cd/m² for Blue raster

J13 Adjust < R. Low Light 9300k > < G. Low Light 9300k > to [x=0.283 y=0.298]

If Blue appears in **J10**

J11 Set Value to "00" for < B. Low Light 9300K >

J12 Adjust Screen VR to "0.89" cd/m² for Red raster

J13 Adjust < R. Low Light 9300k > < G. Low Light 9300k > to [x=0.283 y=0.298]

If Blue appears in **J 8**

J 9 Set Value to "00" for < B. Low Light 9300K >

J10 Turn screen VR until the raster appears with any one of two (R or G) colors.

If Red appears in **J10**

J11 Set Value to "00" for < R. Low Light 9300K >

J12 Adjust Screen VR to "3.65" cd/m² for Green raster

J13 Adjust < R. Low Light 9300k > < B. Low Light 9300k > to [x=0.283 y=0.298]















If Green appears in **J10**

J11 Set Value to "00" for < G. Low Light 9300K >

J12 Adjust Screen VR to "0.89" cd/m² for Red raster

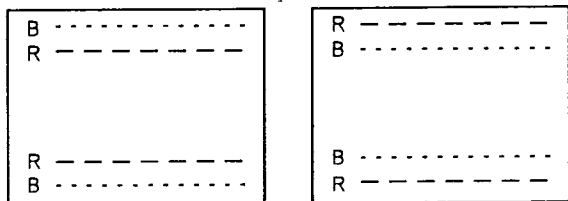
J13 Adjust < G. Low Light 9300k > < B. Low Light 9300k > to [x=0.283 y=0.298]

J14 Test Pattern : 16 gradation grayscale Adjust screen VR so the 2nd level of gray appears slightly.

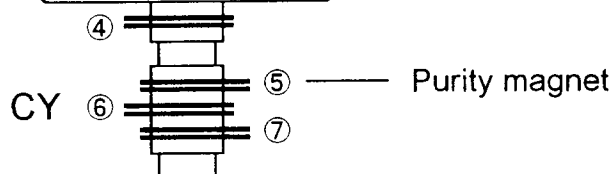
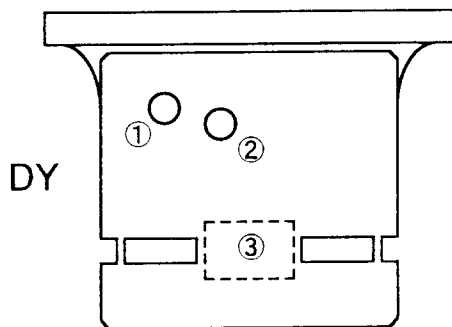
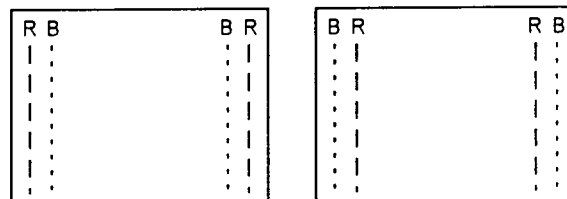
ITEM Program Menu		◇ Test Meter ▼ Test Point □ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
K	FOCUS	□ Character	K1	MODE-1	Check that the input signal to the monitor is [fH 60.0KHz] and [fV 75.0Hz]. Make the corner sections of the screen optimum by turning D-FOCUS VR on the FBT. Make the center section optimum by turning S-FOCUS VR on the FBT. Repeat K2 and K3 to make it optimum.	
			K2			
			K3			
			K4			
L	FINAL TUNE 7) Special ADJUST		L1		Set the cell to the menu at left and press  Select the <u>9:FINAL TUNE</u> from the menu. (Step 1):Data tuning. This messages will appear : <loading EEPROM data> ...end <tuning EEPROM data> ... end <saving data to EEPROM> ... end <RECALL data - PRESET data> wait a moment (Step 2):Erase user preset data. Erase All ' user preset data OK ? > Press  or  and  , go to L6. (Step 3):Calcalate color data. COLOR 6550K data OK ? > , press  and  USER COLOR data OK ? > , press  and  ABL data OK ? > , press  and  finished . (Hit return key) Press  , go to L8. (Step 4):Set brightness data and flag. <SET FLAG> wait a moment ... end tune end . Hit return key ! Press  , return to menu of L2. Press  , to return to the main menu.	
			L2			
			L3			
			L4			
			L5			
			L6			
			L7			
			L8			
M	DATA SAVING 6) Save data to file		M1		Set the cell to the menu at left and press  Key in the file name after [] : Use serial number as a file name (EXAMPLE : FF5110001 = "F5110001.DAT")	
			M2			

2. Adjustment Location for Purity and Convergence

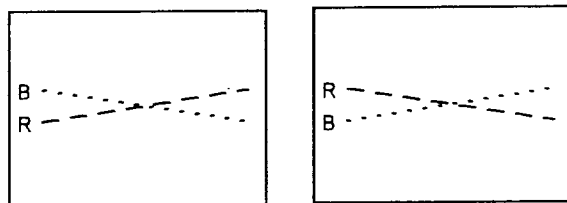
① Differential VR - YV



② Differential VR - YH

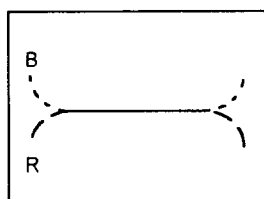


③ Differential Coil

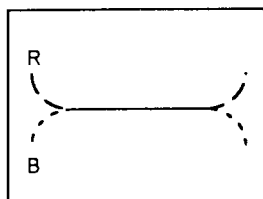


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④ Four-pole magnet B

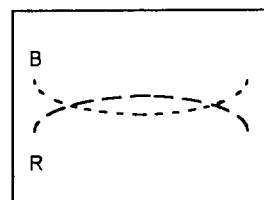


Beams are twisted lefthand

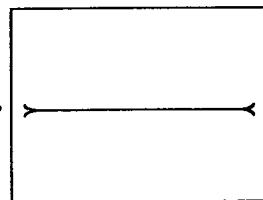


Beams are twisted righthand

For example lefthand

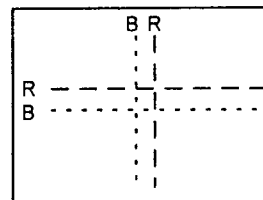
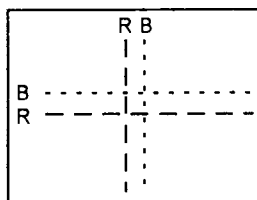


With four-pole magnet B ④

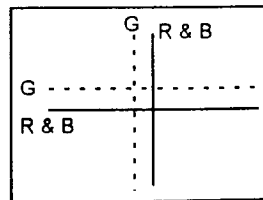
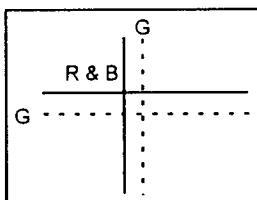


With four-pole magnet A ⑥

⑥ Four-pole magnet A



⑦ Six-pole magnet



TECHNICAL INFORMATION FOR DDC

- It must be noted that this monitor is designed to be applicable to DDC1 communication the following points are different from ordinary monitors.

1. Use the signal cable, the which is furnished as an accessory (applicable to DDC1) only.
 2. When replacing a PCB on which ROM for DDC1 is mounted, data writing is required.
- In addition to the above, a computer applicable to WINDOWS and a 5V power supply unit are required.

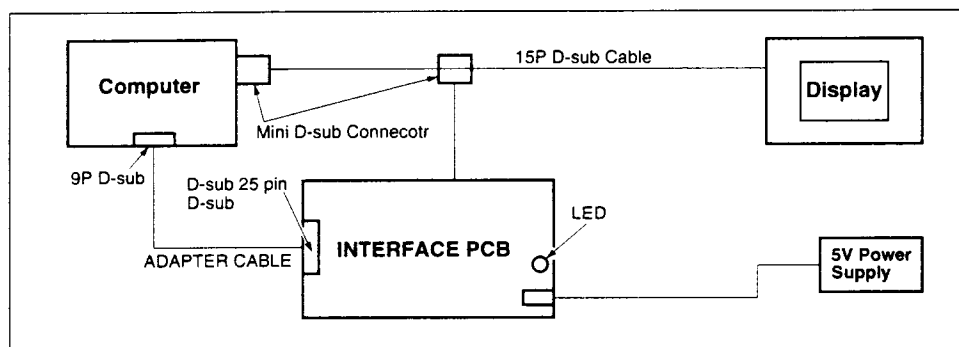
- DDC1 Data Read/write System

1. Communication jig

(1) The composition of Communication jig

- ① Interface PCB. ② Adapter cable (D-SUB 25P → 9P) ③ 15P D-SUB cable

(2) Connection diagram for communication jig.



(3) Procedure to turn on the power:

- ① Make connections as shown above.
- ② Turn on the computer.
- ③ Turn on the power supply of communication jig.
- ④ Turn on the power supply of the MONITOR.

(Note) If the above-mentioned operation is normal, LED of the communication jig turns green after step (4).

If this LED is red, repeat the steps (3) and (4).

(4) Confirmation of DDC mode

LED is mounted on the communication jig. According to its color, the DDC mode can be discriminated.

- | | |
|------------------------|---------------------|
| - When LED is green. | DDC1 mode. |
| - When LED is orange. | DDC2B mode. |
| - When LED is red. | Transmission error. |
| - When LED is not lit. | Obsolete. |

2. Preliminary arrangements for using DDC data read/write software

(1) Copy DDC WRITE. EXE from floppy disk to hard disk drive (Name: \PanaTool Directory).

(2) Register DDC data read/write software (DDCWRITE.EXE) in the Icon.

- ① Click the menu bar "Icon" of the program manager.
- ② Select "register and group create" from the pull down menu.
- ③ Select "group create."
- ④ Name the group PanaTool and register the group.
- ⑤ Repeat (1) and (2) again and select "Icon registration."
- ⑥ Enter "DDC1/2B" for [Title] and "Hard disk drive name: \PanaTool\DDCWRITE. EXE" for [Command line]. Then select [OK]

3. How to use DDC data read/write software.

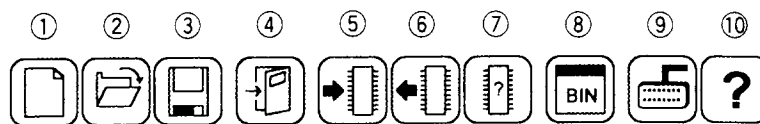
(1) Start of DDC data read/write software.

Double-click the "DDC1/2B" Icon in the PanaTool group.

(2) Meaning of a button displayed.

The tool bar indicates the nine icons shown below.

These icons are explained, from left to right :



- Icon ① : Initialization of screen display contents.
 Icon ② : File is opened and displayed on the screen.
 Icon ③ : Data are stored in a file.
 Icon ④ : Finish the DDC data read/write software.
 Icon ⑤ : Data displayed on the screen are written in EEPROM.
 Icon ⑥ : Contents of EEPROM are displayed on the screen.
 Icon ⑦ : Contents of EEPROM are compared with the data displayed on the screen.
 Icon ⑧ : Check binary data by text format.
 Icon ⑨ : Communication port setting.
 Contents of setting : PORT → Using Communication port No.
 Baud rate → 9600, Data → 8 bits, Parity → Nil, Stop → 1 bits
 Icon ⑩ : Version information display.

- (3) Using the tool bar explained in (2) above, write data in EEPROM and make operations of reading, etc.
 A pop-up window may be displayed on the way. In such a case, select a proper one according to the message.

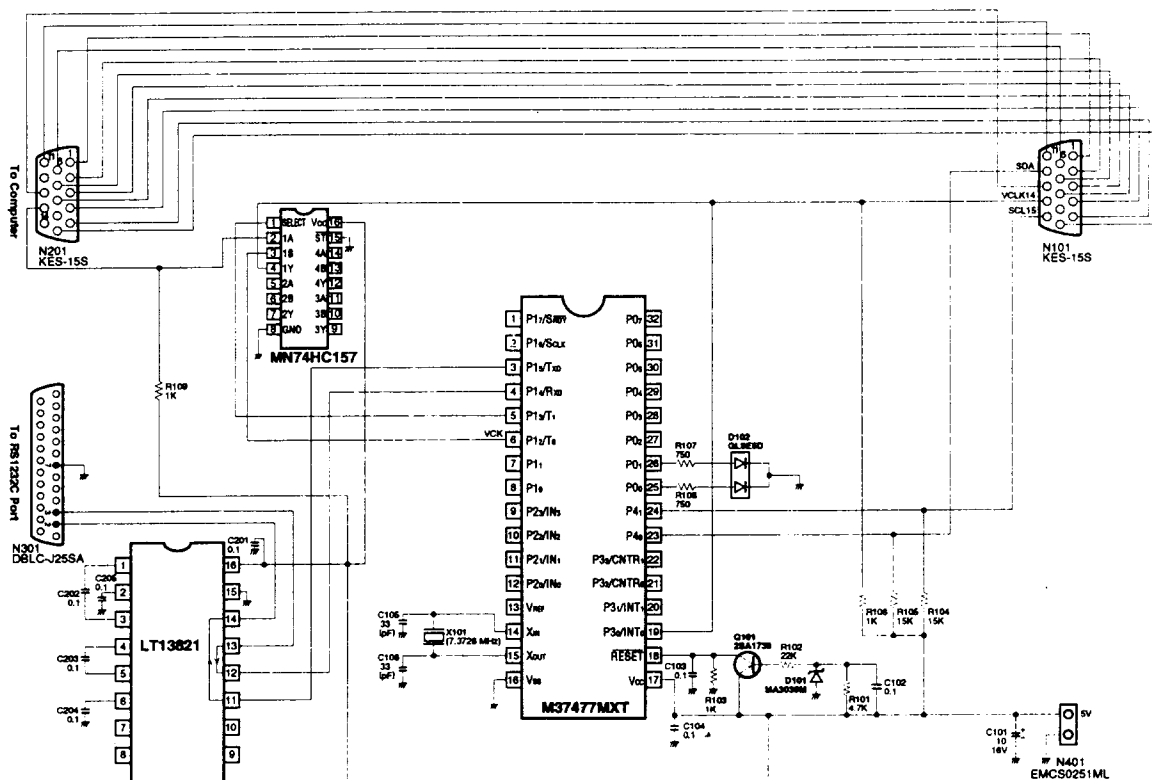
(Example 1) EEPROM data are displayed on the screen.

- ① Click the loon (6th from the left) in the tool bar, with the arrow pointing from the memory chip.
- ② Decided whether reading is started in DDC1 mode or DDC2B mode.
- ③ Select START.

(Example 2) Data displayed on the screen are written in EEPROM.

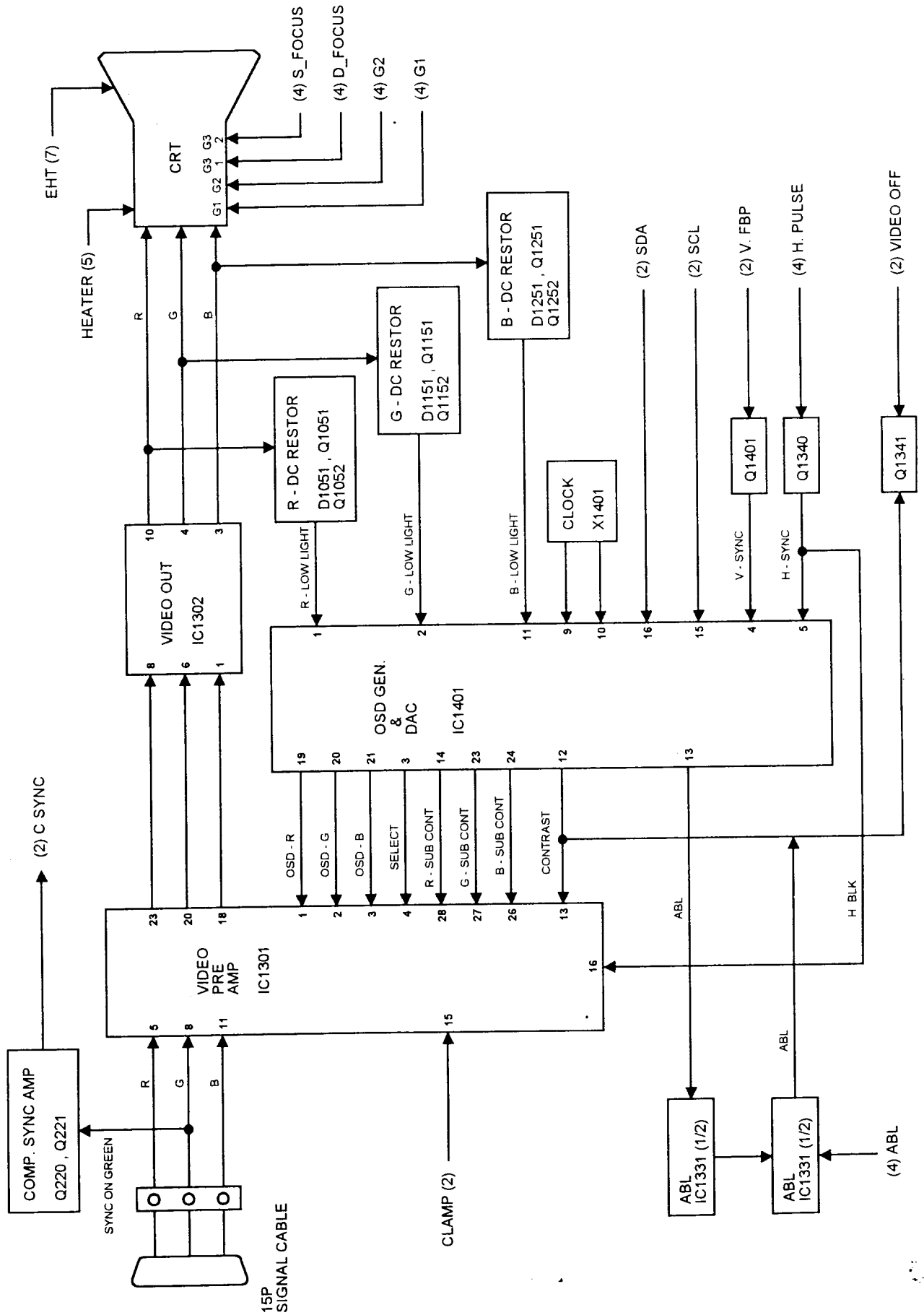
- ① Click the icon (5th from the left) in the tool bar, with the arrow pointing toward in the memory chip.
- ② Select START.

SCHEMATIC DIAGRAM FOR INTERFACE

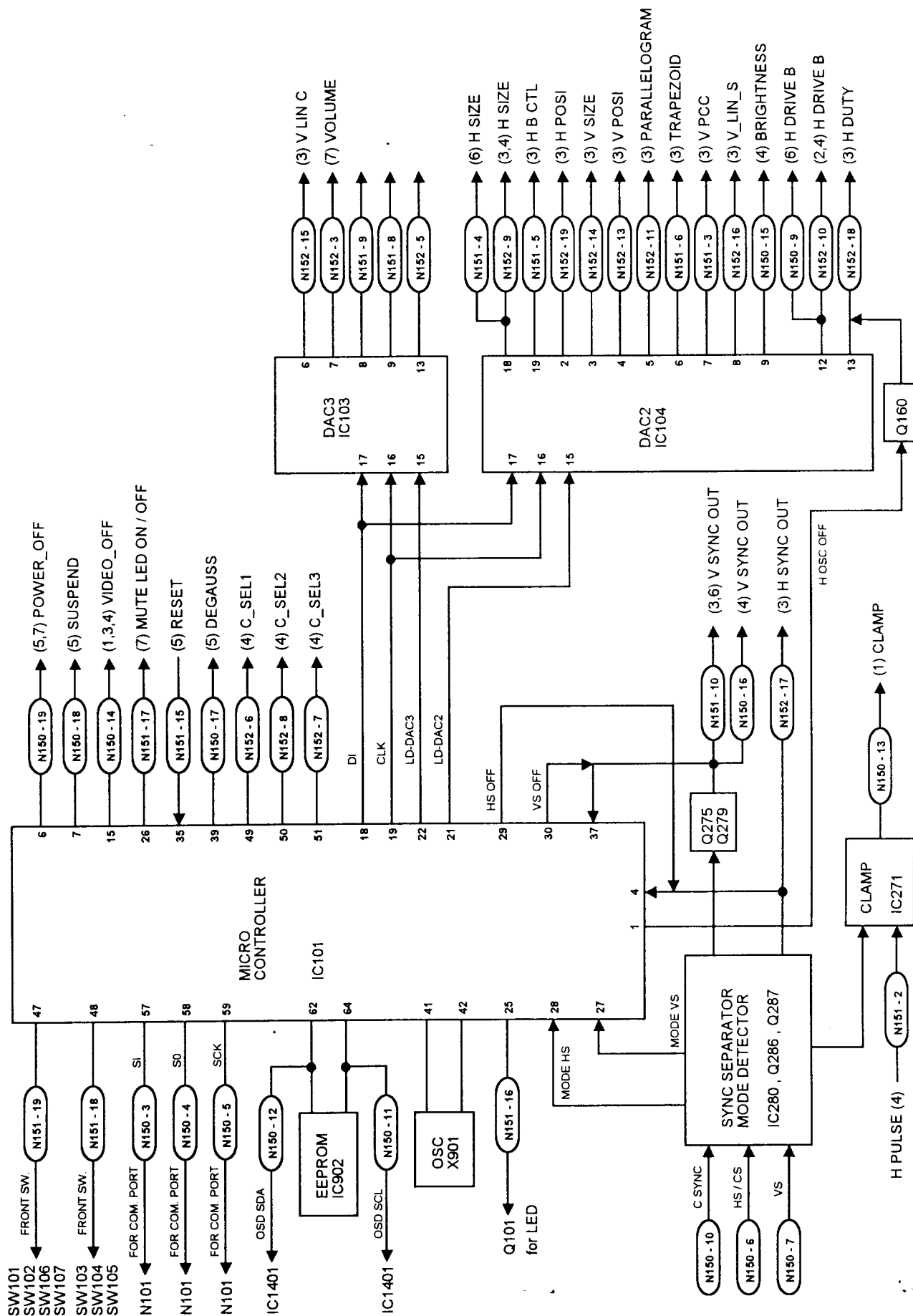


BLOCK DIAGRAM

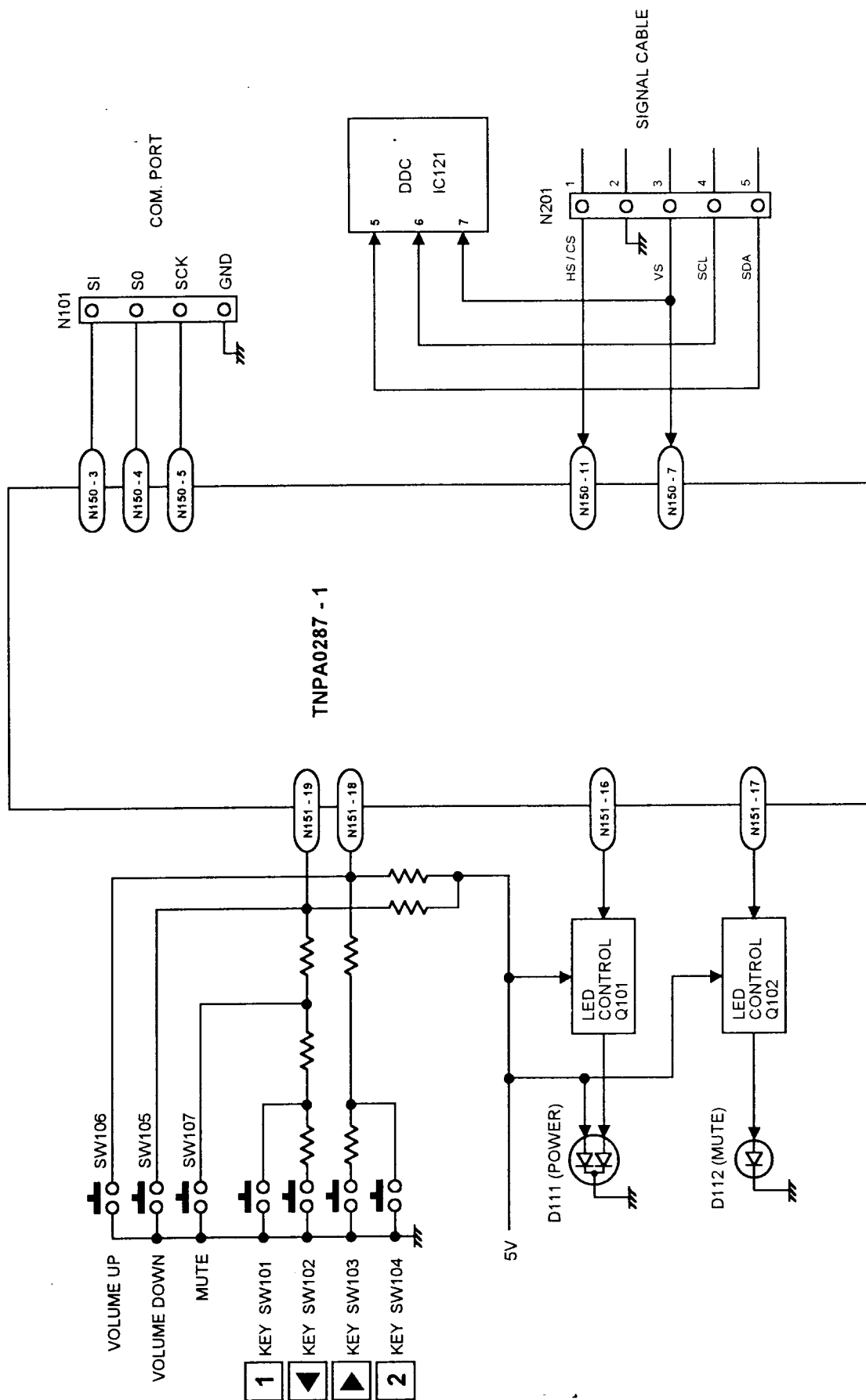
SHEET (1) / VIDEO OUT for HV7 & HV7F



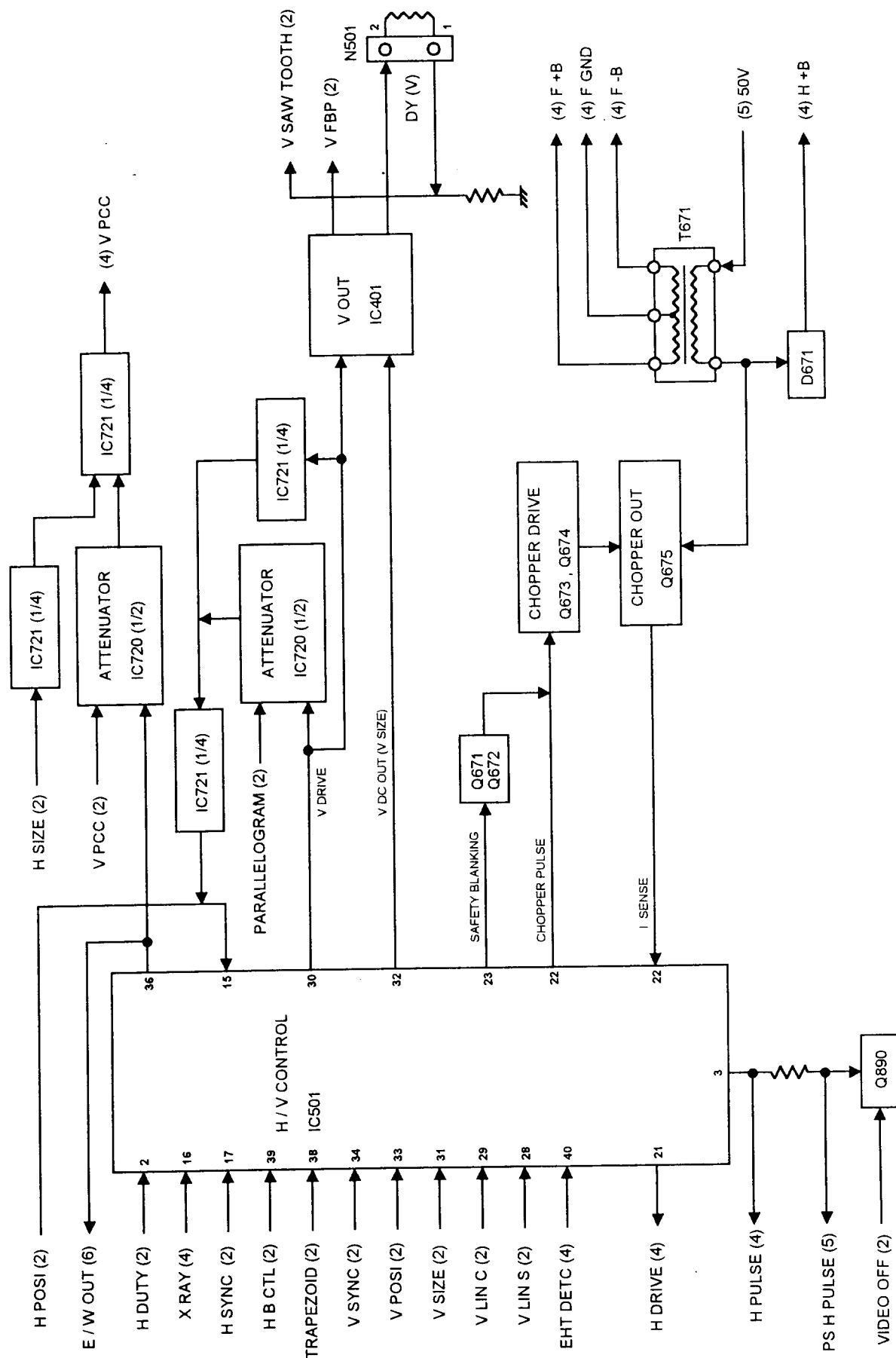
SHEET (2) / MICRO CONTROLLER / D. A. C. / HV SYNC for HV7F



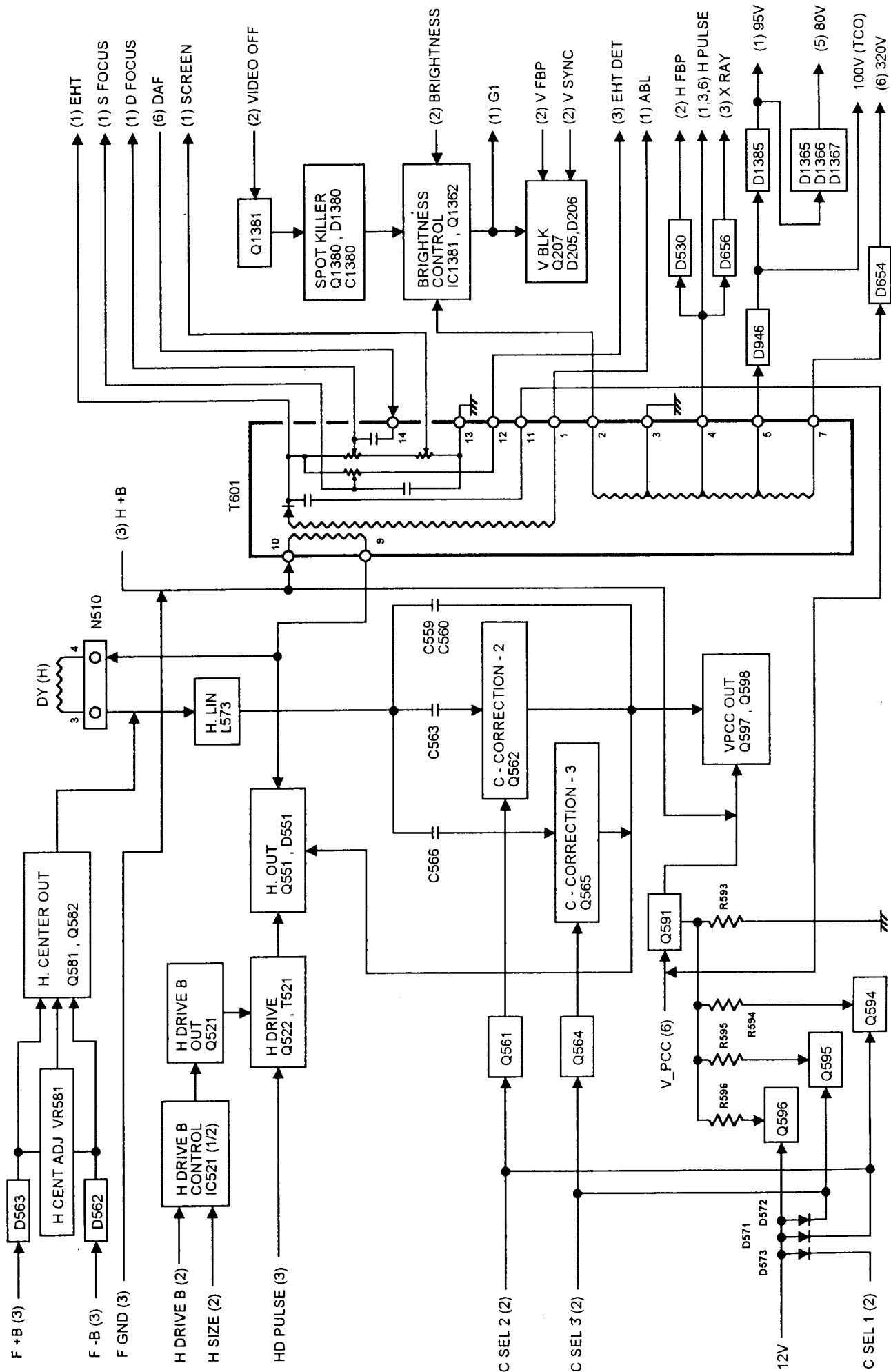
SHEET (2) / FRONT SW / DDC / COM. PORT / LED INDICATOR for HV7F



SHEET (3) / HV CONTROL / V OUT for HV7 & HV7F

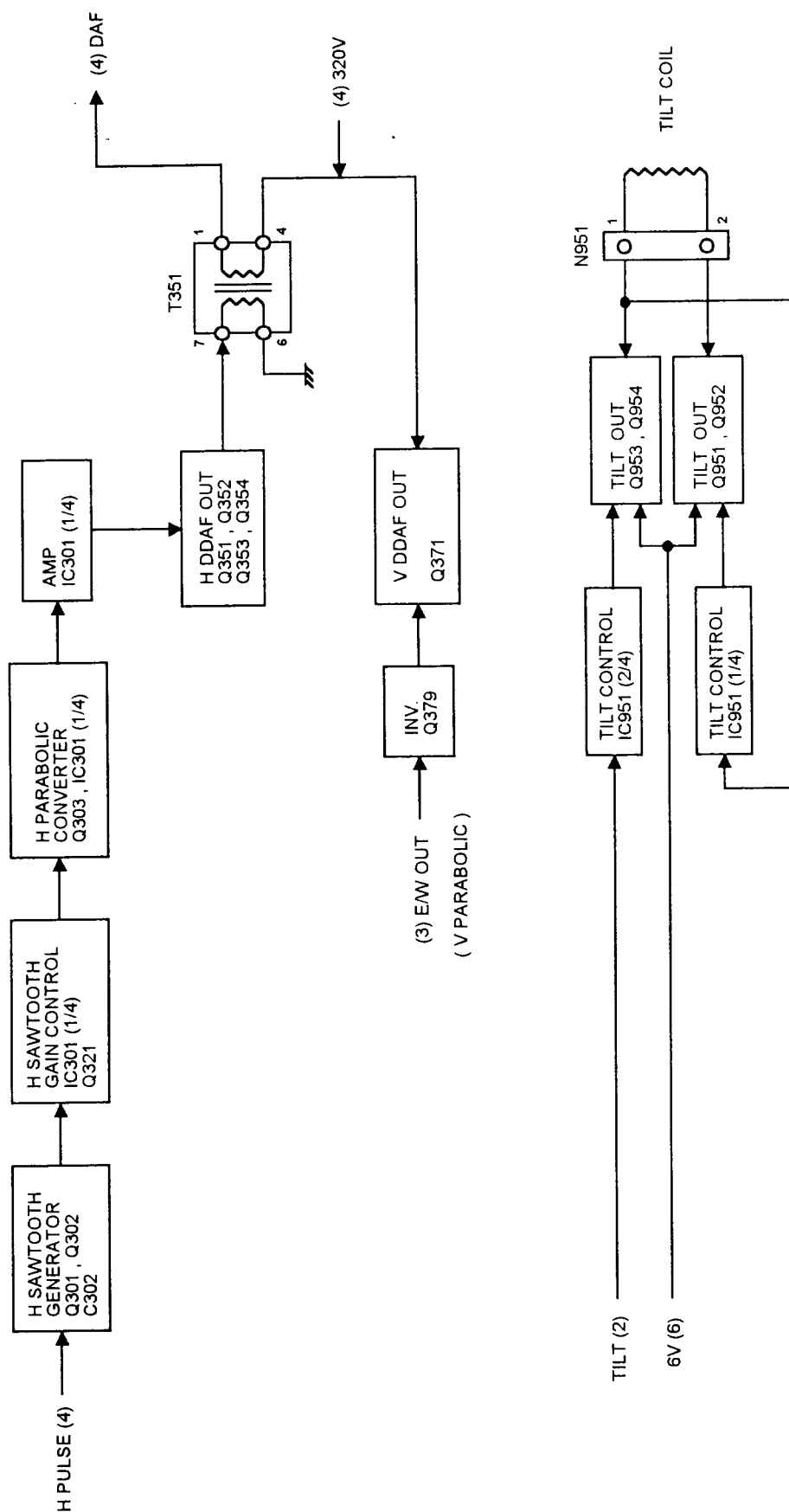


SHEET (4) / H DRIVE / H OUT for HV7 & HV7F

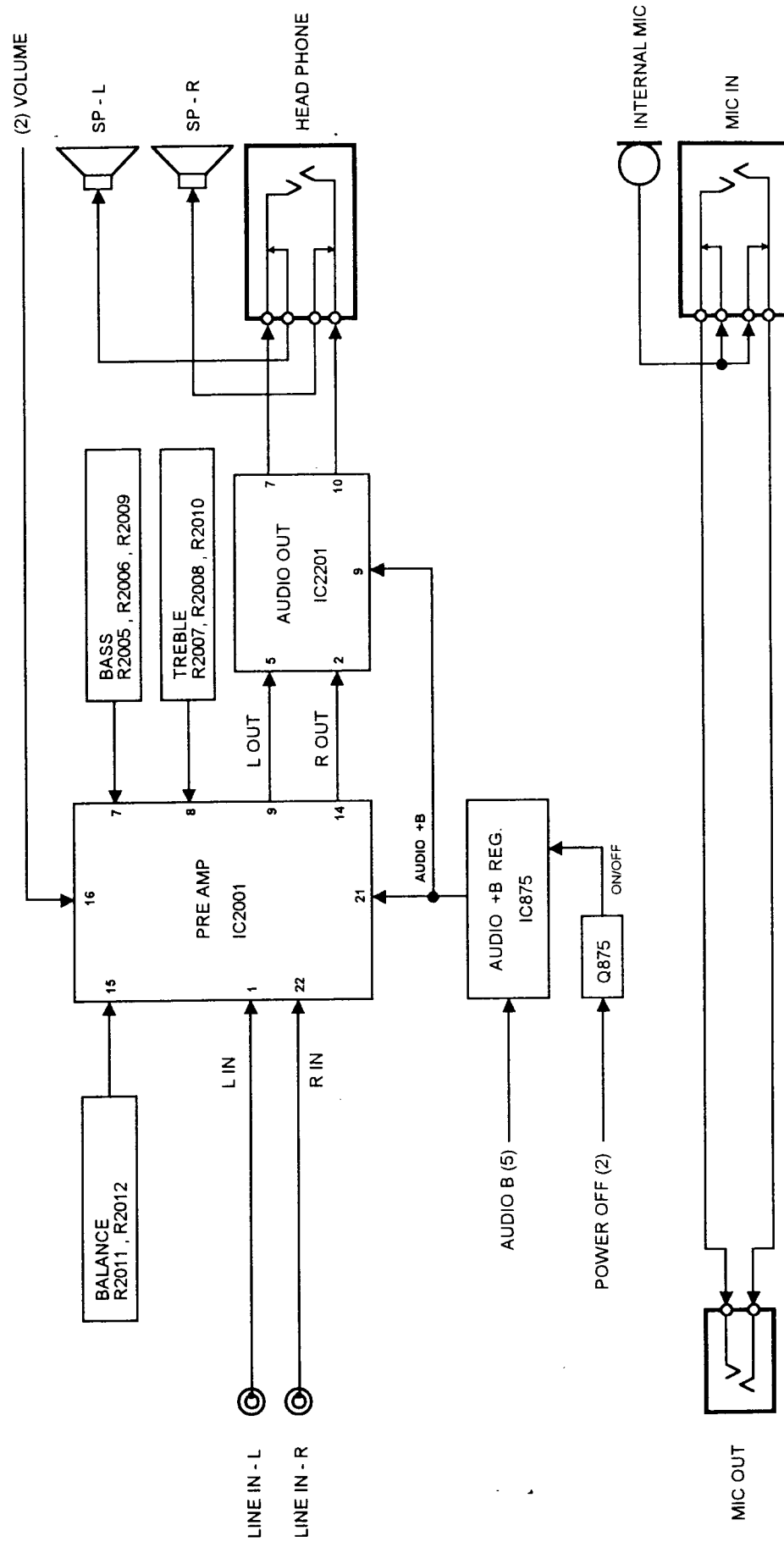


The diagram illustrates a complex power supply system for a vacuum furnace. It begins with an AC input (AC IN) passing through a fuse and an AC switch (AC SW) to a line filter (L801). The filtered AC is then connected to a rectifier (D821) and a thermistor (R802). The rectifier output is connected to a switching control IC (IC821) and a photo coupler (PC821). The switching control IC (IC821) is a central component that manages the power distribution. It is connected to various output stages, including a 24V regulator (Q863, Q864, IC870 (1/4)), a 12V regulator (Q870, Q871, IC870 (1/4)), a 15V on/off stage (Q885, Q886), a 5V regulator (IC862), and a 6V/4V regulator (Q865, Q866, IC870 (1/4)). The photo coupler (PC821) is connected to a +B ADJ. VR861 and an error signal (Q850, D850). The system also includes a degaussing coil (D866) and a heater (H874). The output voltages are labeled as (1) HEATER, (2) SUSPEND, (2) POWER OFF, (2) 8V, (1, 3, 4, 6) 12V, (3) 50V, (2, 3, 4) 24V, (3) 15V, (1, 2, 6) 5V, (2) RESET, (3, 4) -13V, (1) HEATER, (6) 6V, and (3) PS H PULSE. The diagram also shows a 12V input, a 12V output, and a 12V output.

SHEET (6) / DAF OUT / TILT CONTROL for HV7 & HV7F

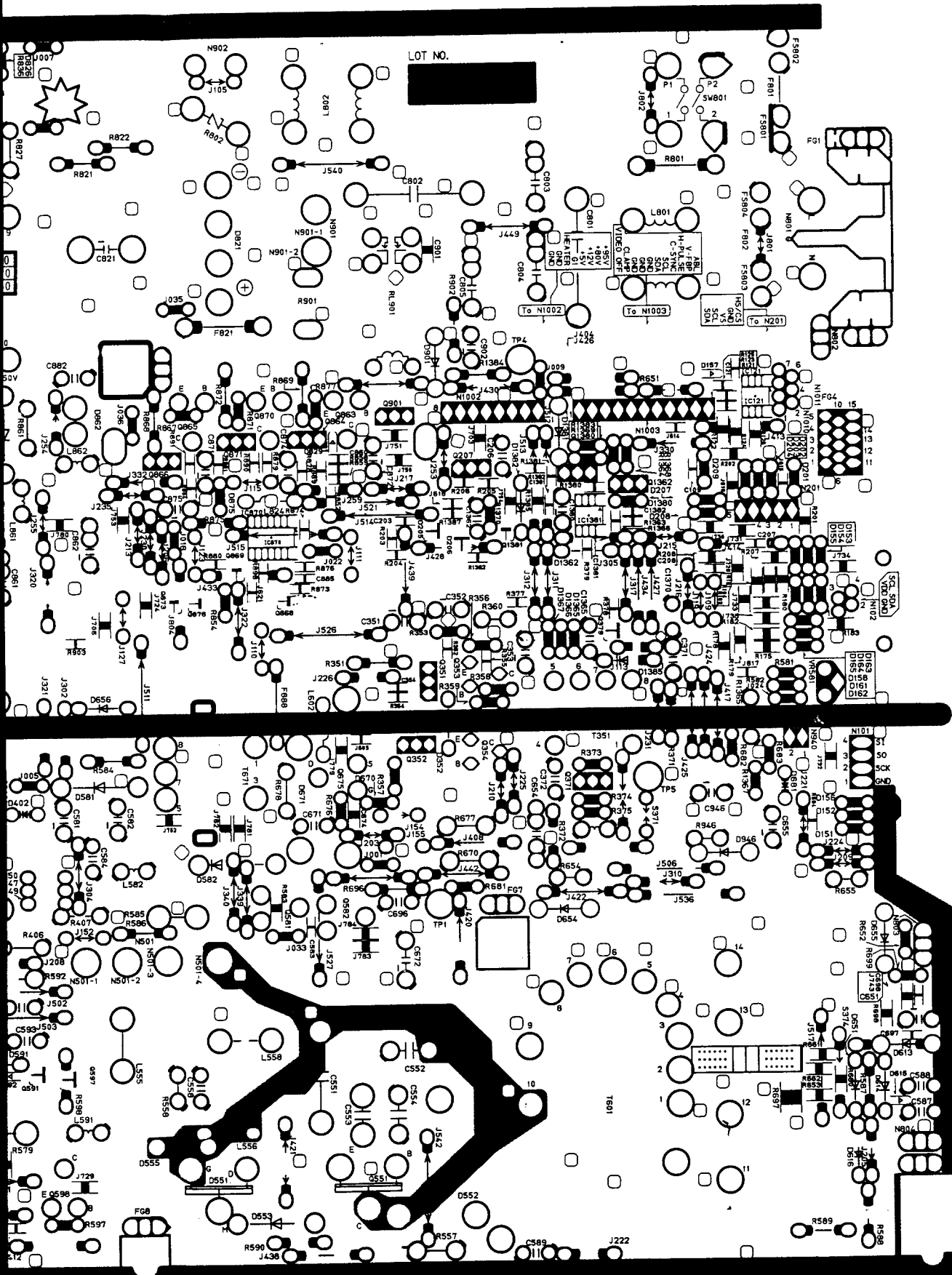


SHEET (7) / AUDIO CONTROL for HV7F

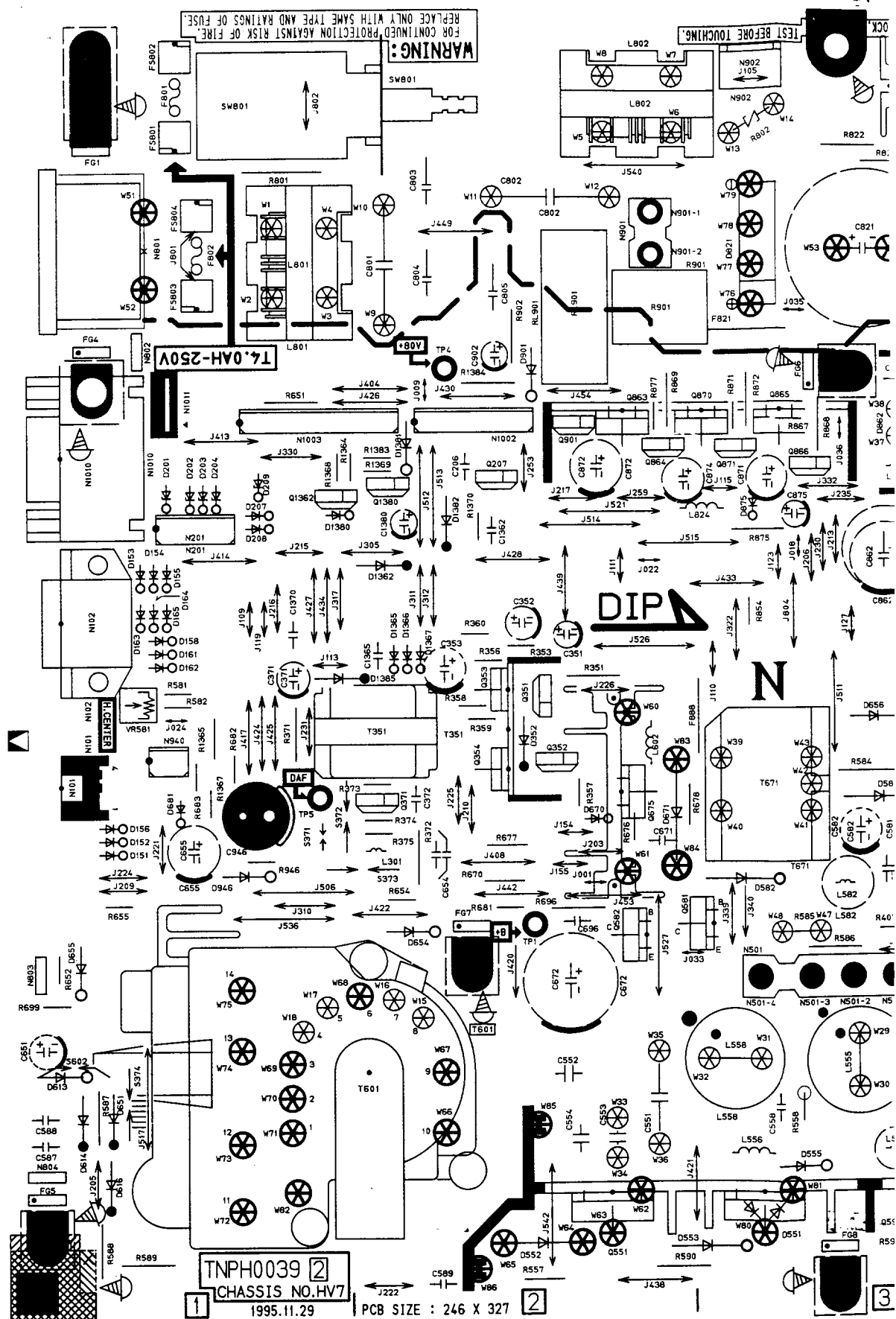




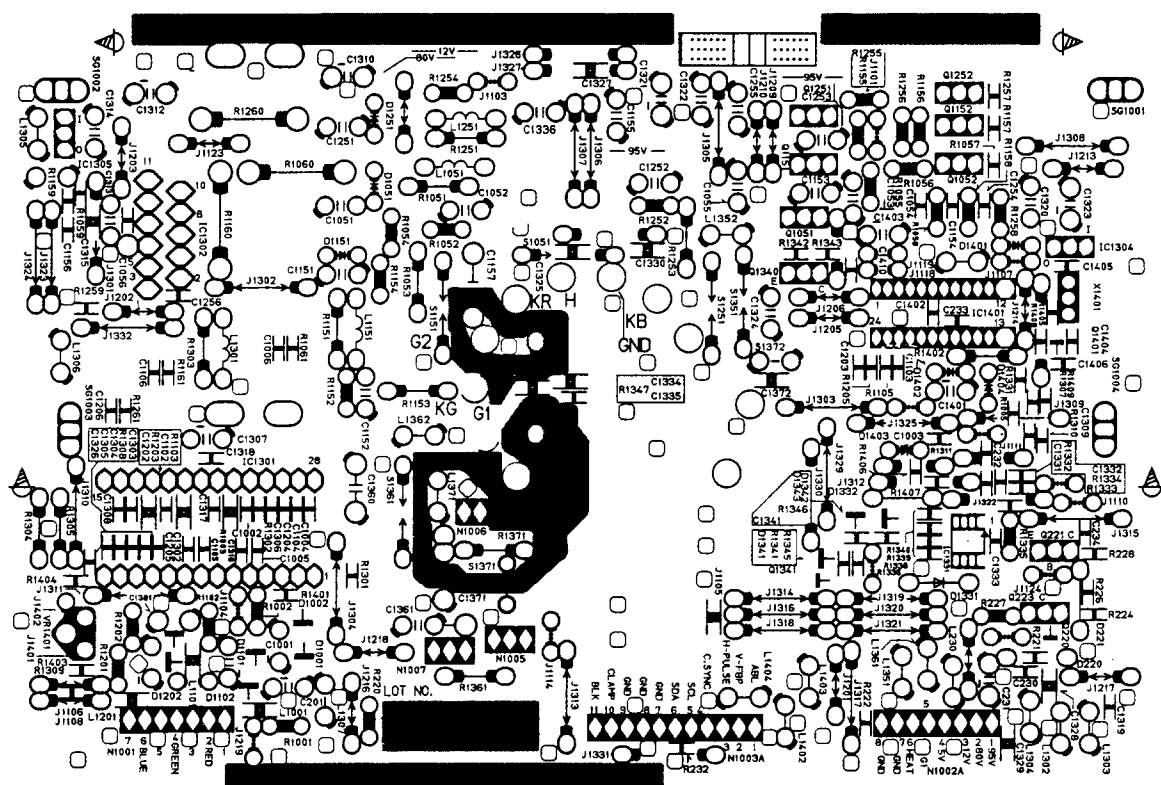
CONDUCTOR VIEW



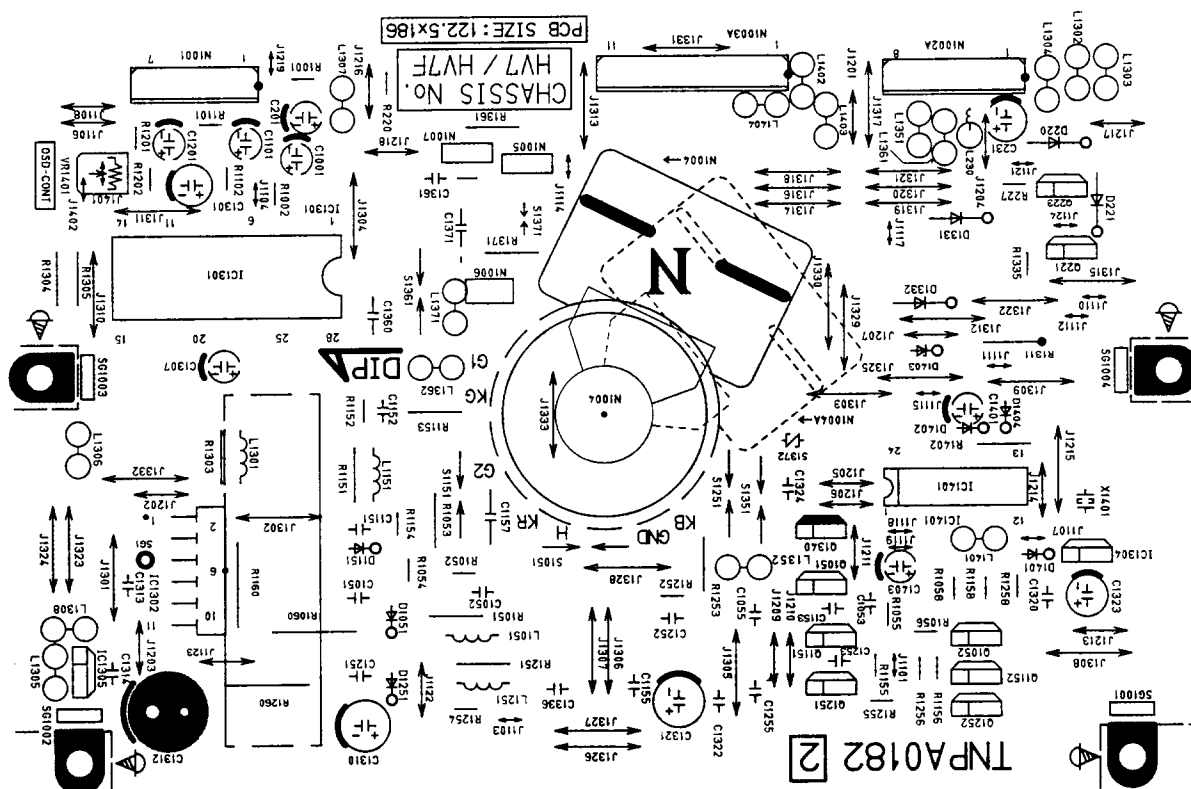
MAIN BOARD (Parts side)



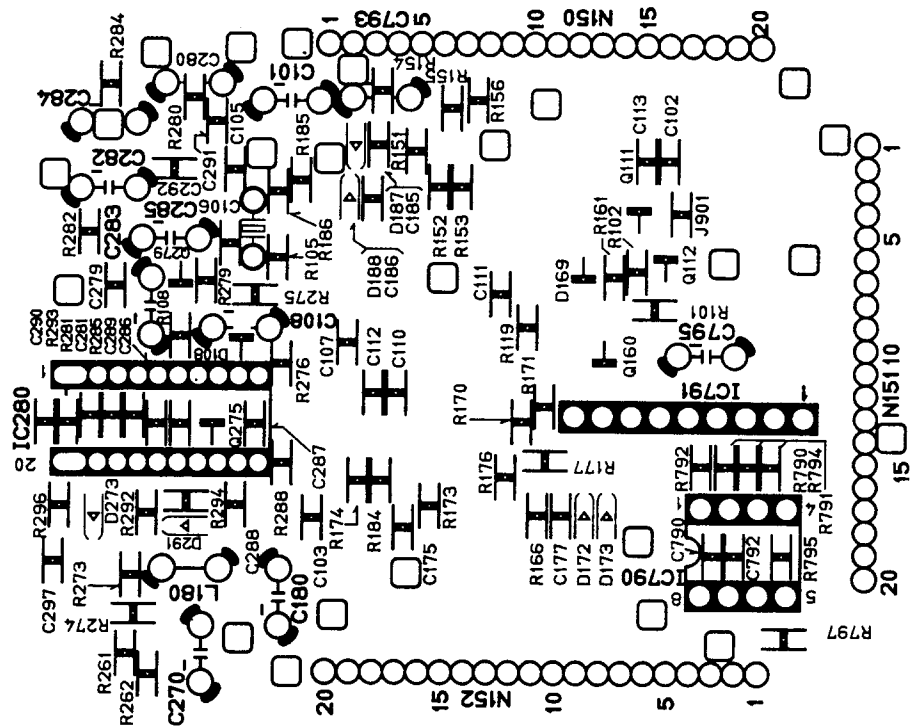
VIDEO BOARD (Solder side)



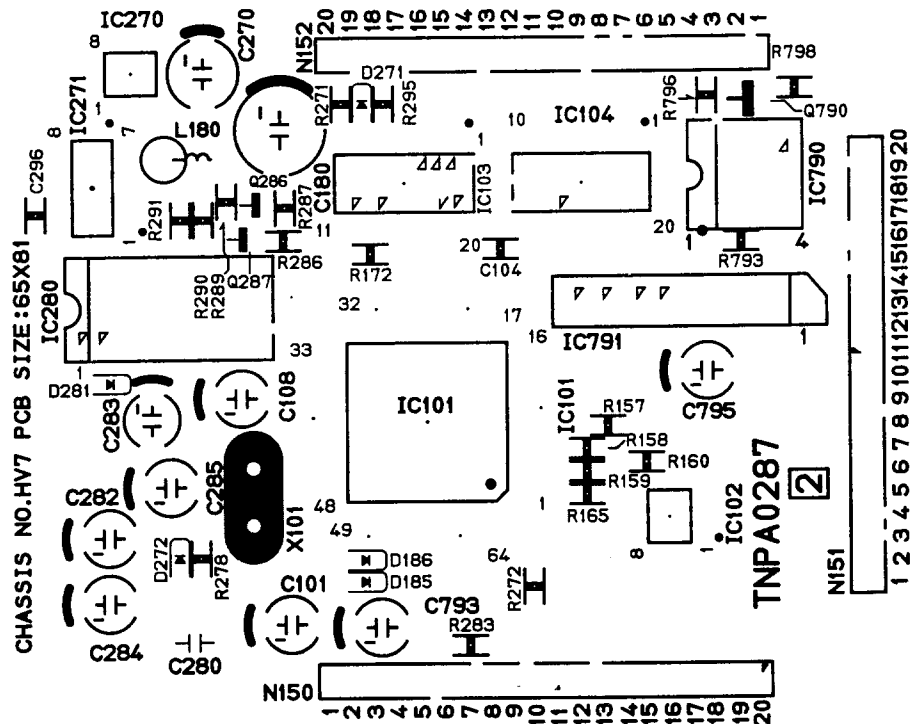
VIDEO BOARD (Parts side)



CONTROLLER BOARD (Solder side)



CONTROLLER BOARD (Parts side)



SCHEMATIC DIAGRAM










IMPORTANT SAFETY NOTICE

The component identified by shading or international symbol \triangle on the following schematic diagrams incorporate special features important for protection from X-Radiation, fire and electrical shock hazards. When servicing it is essential that only manufacturer's specified parts be used for those critical components.

NOTES :









1. RESISTOR

All resistors are carbon 1/4W resistor, unless otherwise noted by the following marks.
Unit of resistance is ohm (Ω), (K = 1,000, M = 1,000,000)

	Non Flammable		Solid
	Metal Oxide		Metal (Precision and high stability)
	Wire Wound		Thermistor
	Fusible		Positive coefficient Thermistor
	Flame Proof Rectangular		

2. CAPACITOR

All capacitors are ceramic 50V capacitor, unless otherwise noted by the following marks.
Unit of capacitance is μF , unless otherwise noted.

	Electrolytic		Polyester
	Tantalum		Metalized Polyester
	Bipolar		Polypropylene
	Polystyrene		Mica
	Temperature Compensation		Ceramic
			Ceramic (SL)

3. COIL

Unit of inductance is μH , unless otherwise noted.

4. VOLTAGE MEASUREMENT

Voltage is measured by a digital meter receiving normal signal.

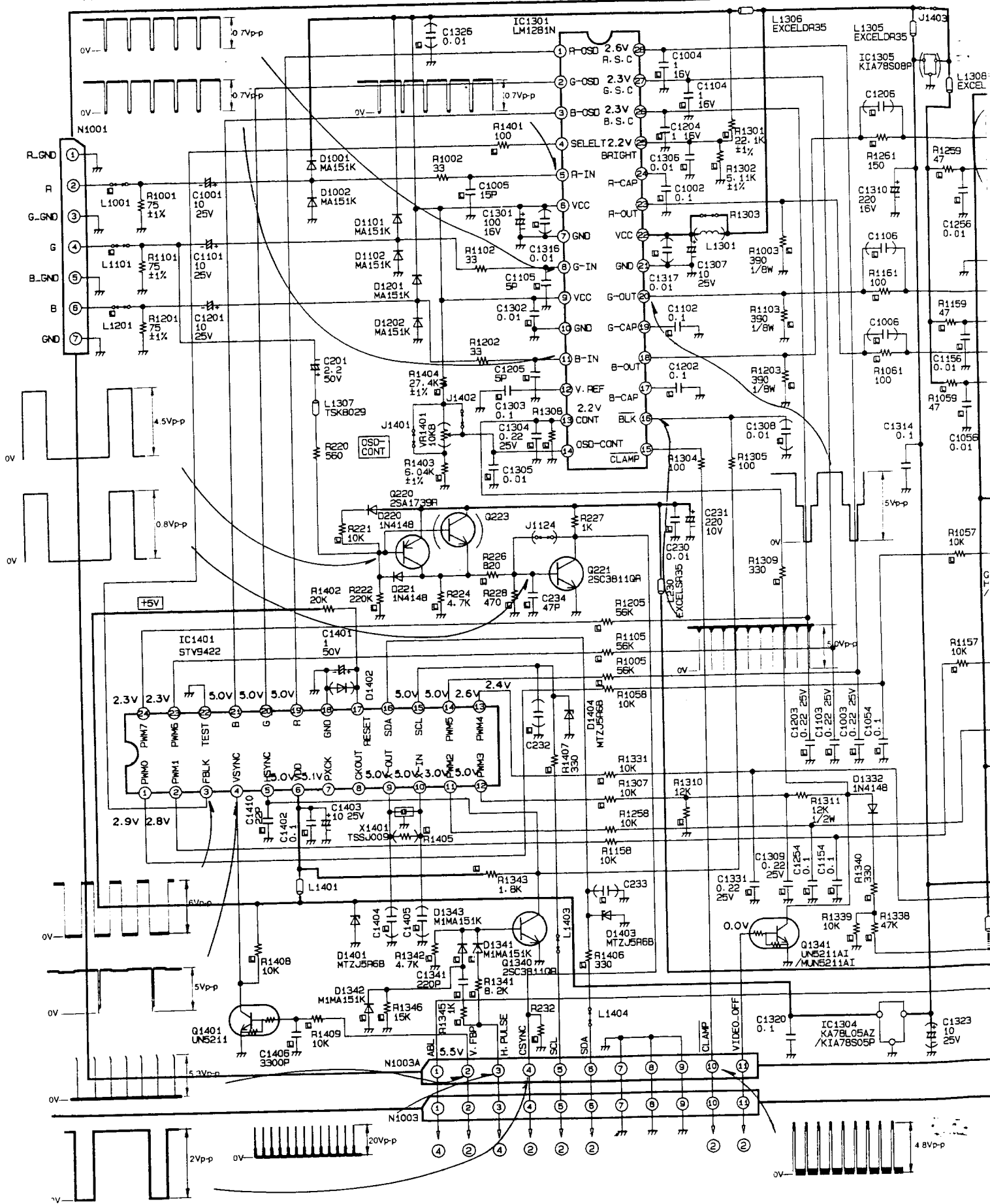
5. This schematic diagram is the latest at the time of printing and is subject to change without notice.

SERVICE NOTES :

This model has a section that does not share a common ground with the power supply section. The different sections are referred to as the HOT section and the COLD section in the precautions below.

1. Do not touch the HOT section and the COLD section at the same time. You may receive an electric shock.
2. Do not short the HOT section to the COLD section. This could blow the fuse or damage parts.
3. Never measure the HOT section and the COLD section at the same time when using tools such as oscilloscopes or multi-meters.
4. Always unplug the unit before beginning any operation such as removing the chassis.

***INPUT SIGNAL 1024×768 75Hz**



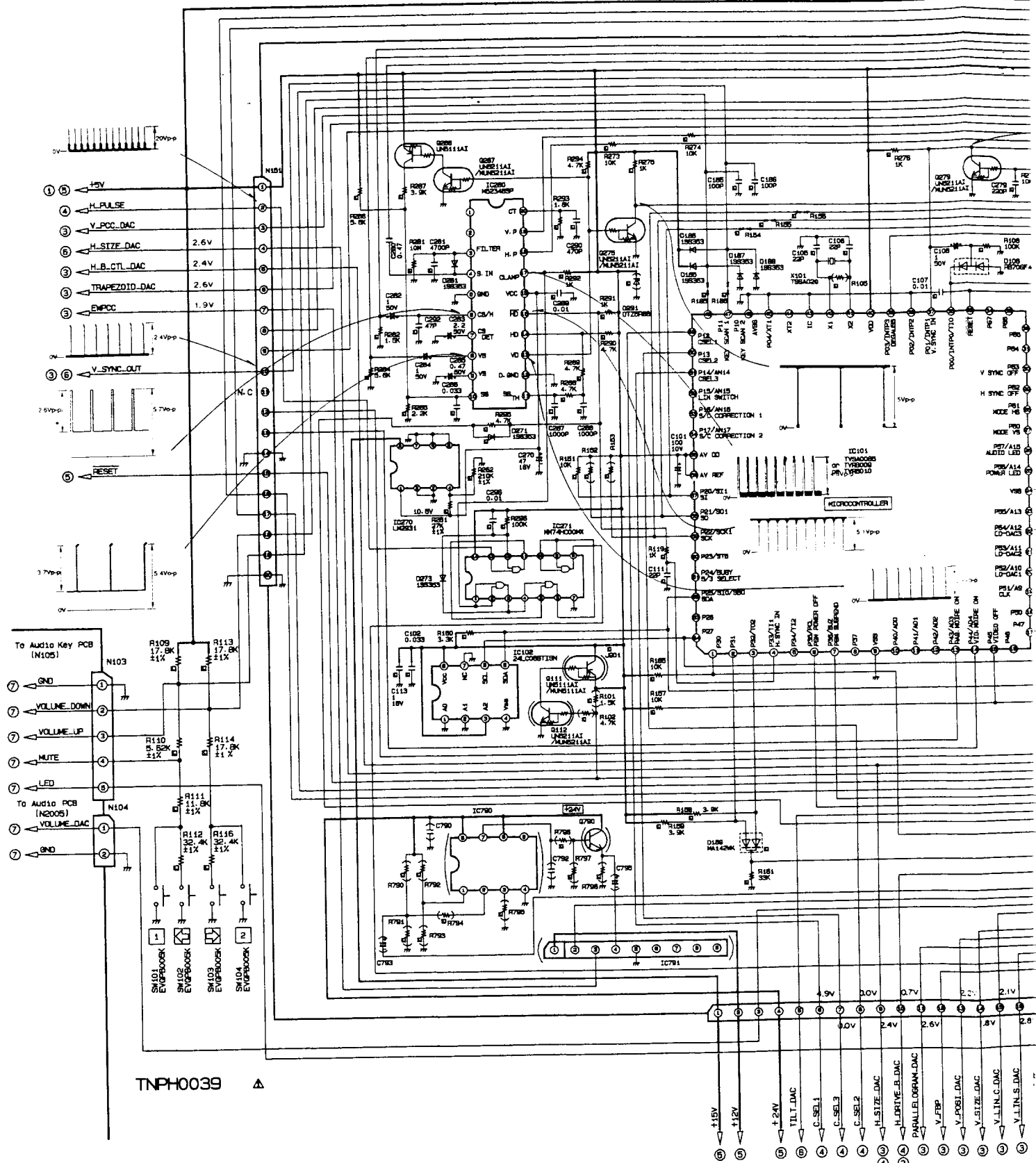
PM17 (TX-D1734F-M)

0Y:MEY41JHD

CHASSIS FAMILY No. : 17HV7F



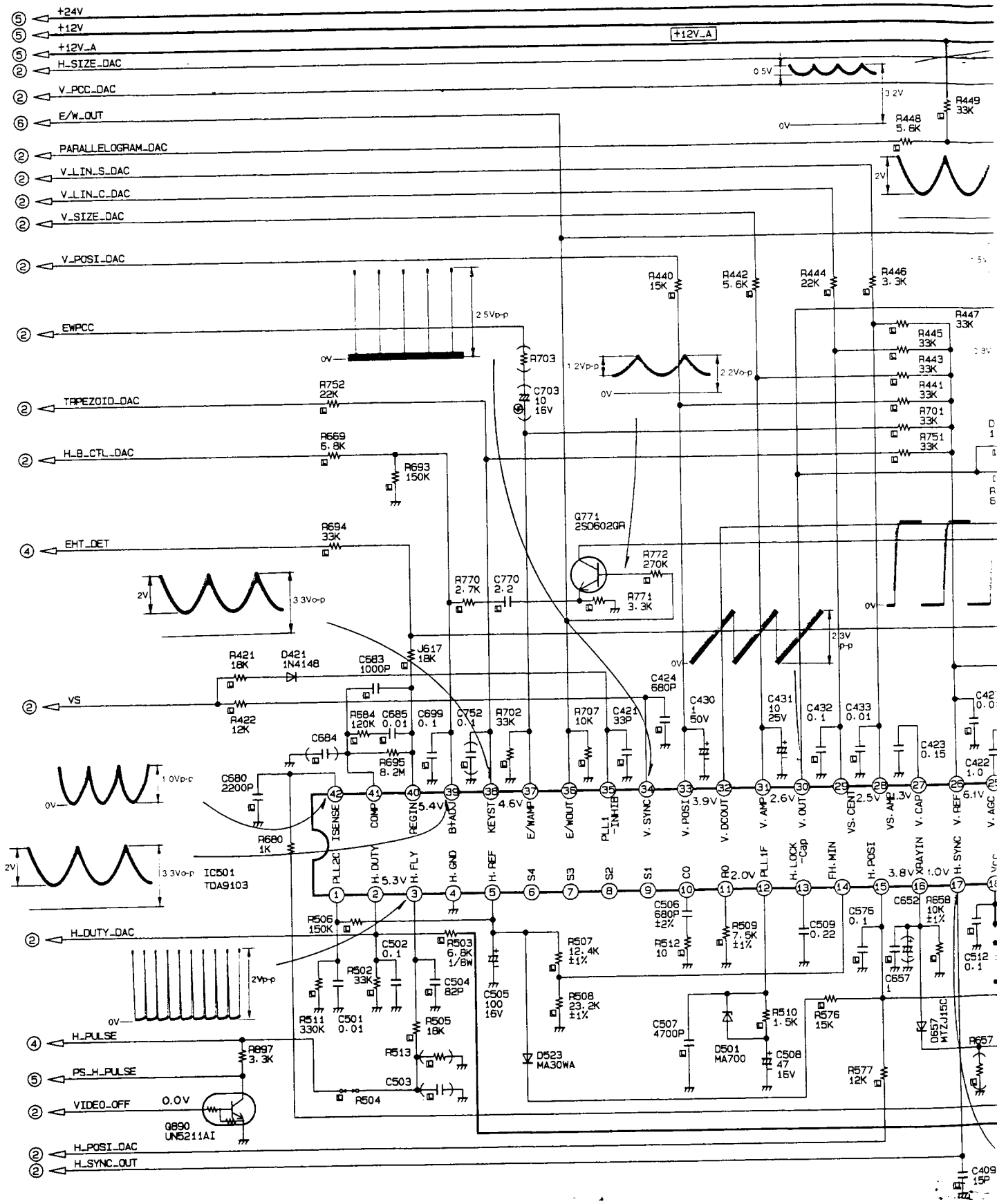
*INPUT SIGNAL 1024×768 75Hz



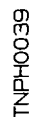




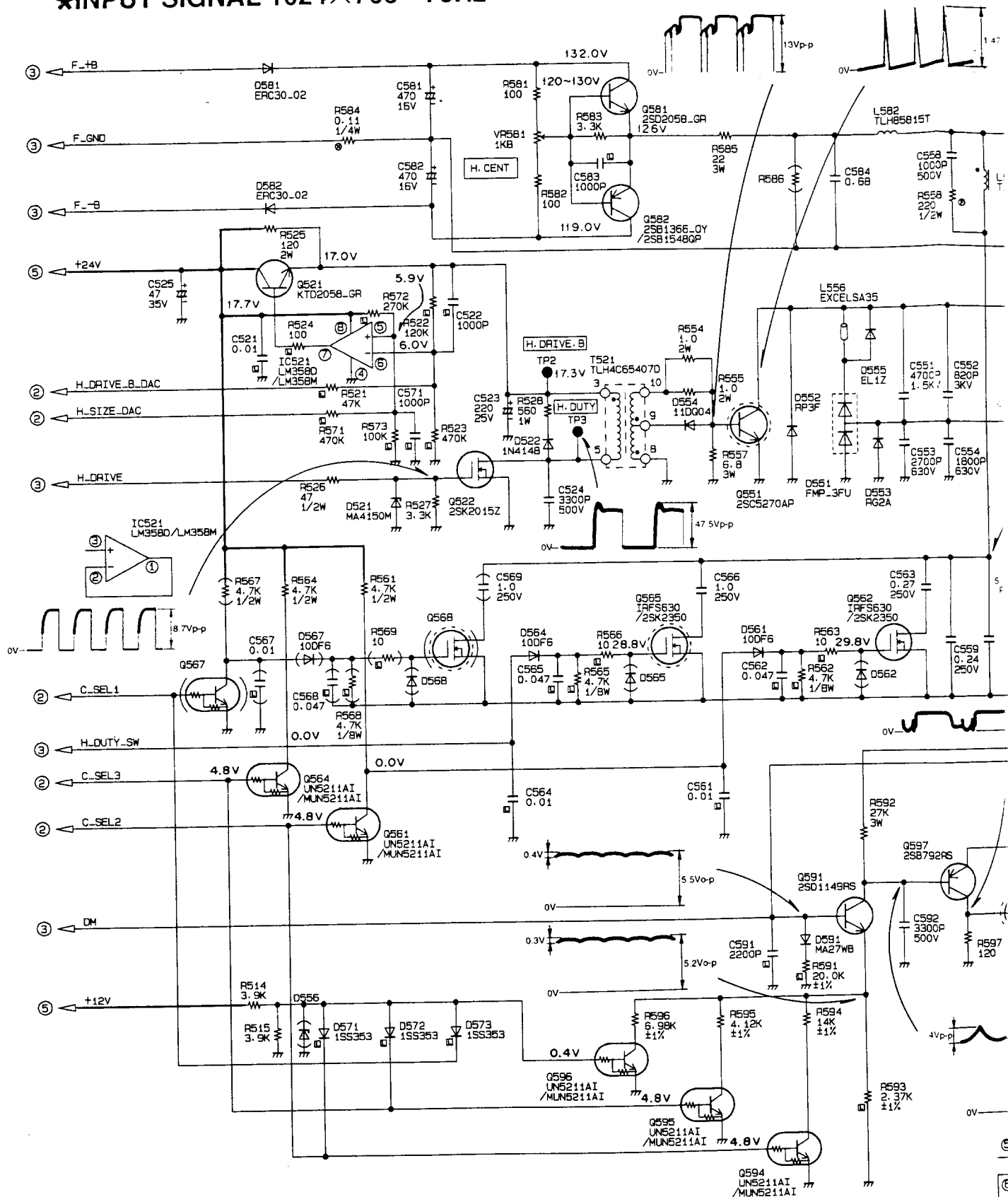
***INPUT SIGNAL 1024×768 75Hz**







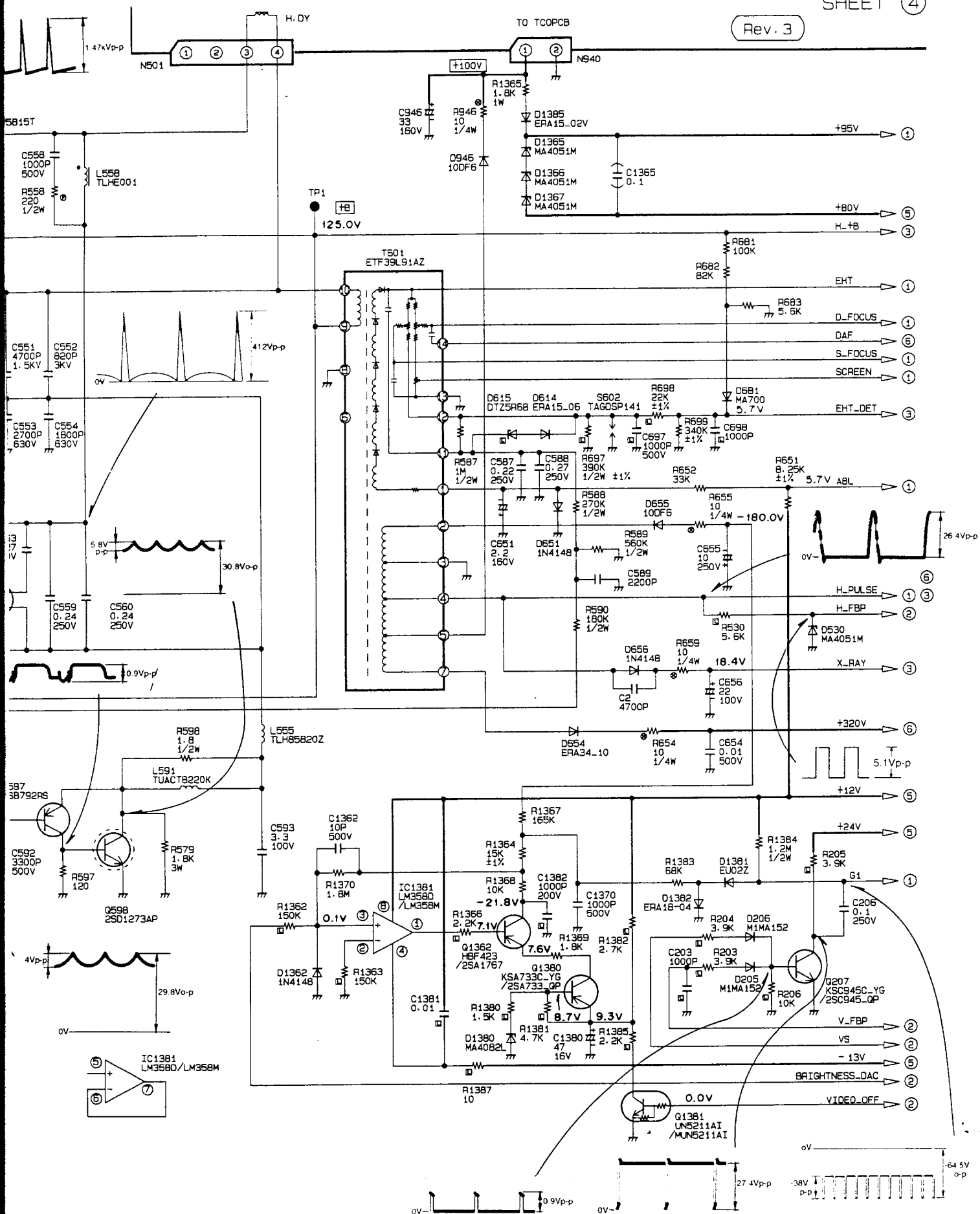
★INPUT SIGNAL 1024×768 75Hz



TNPH0039



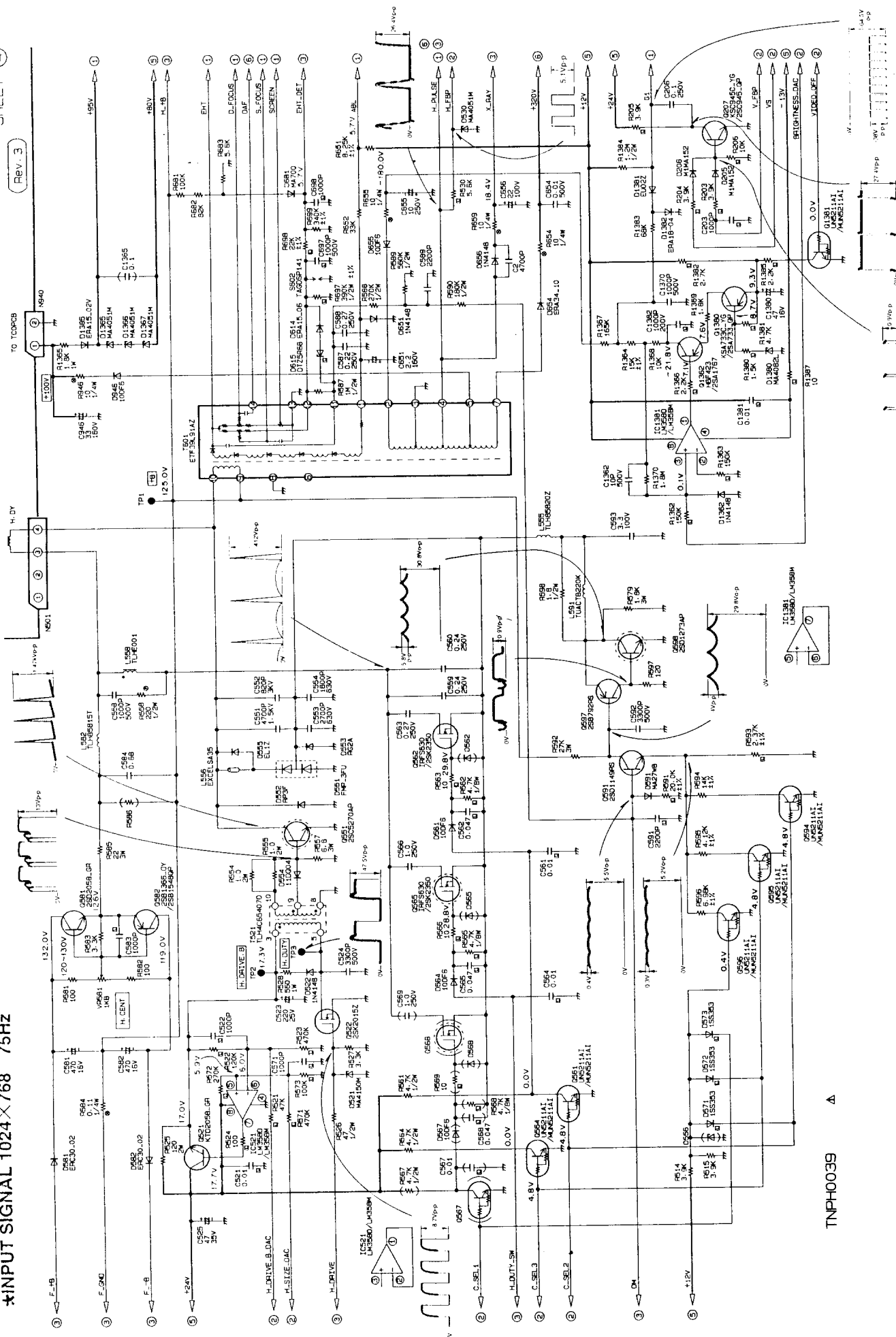
Rev. 3



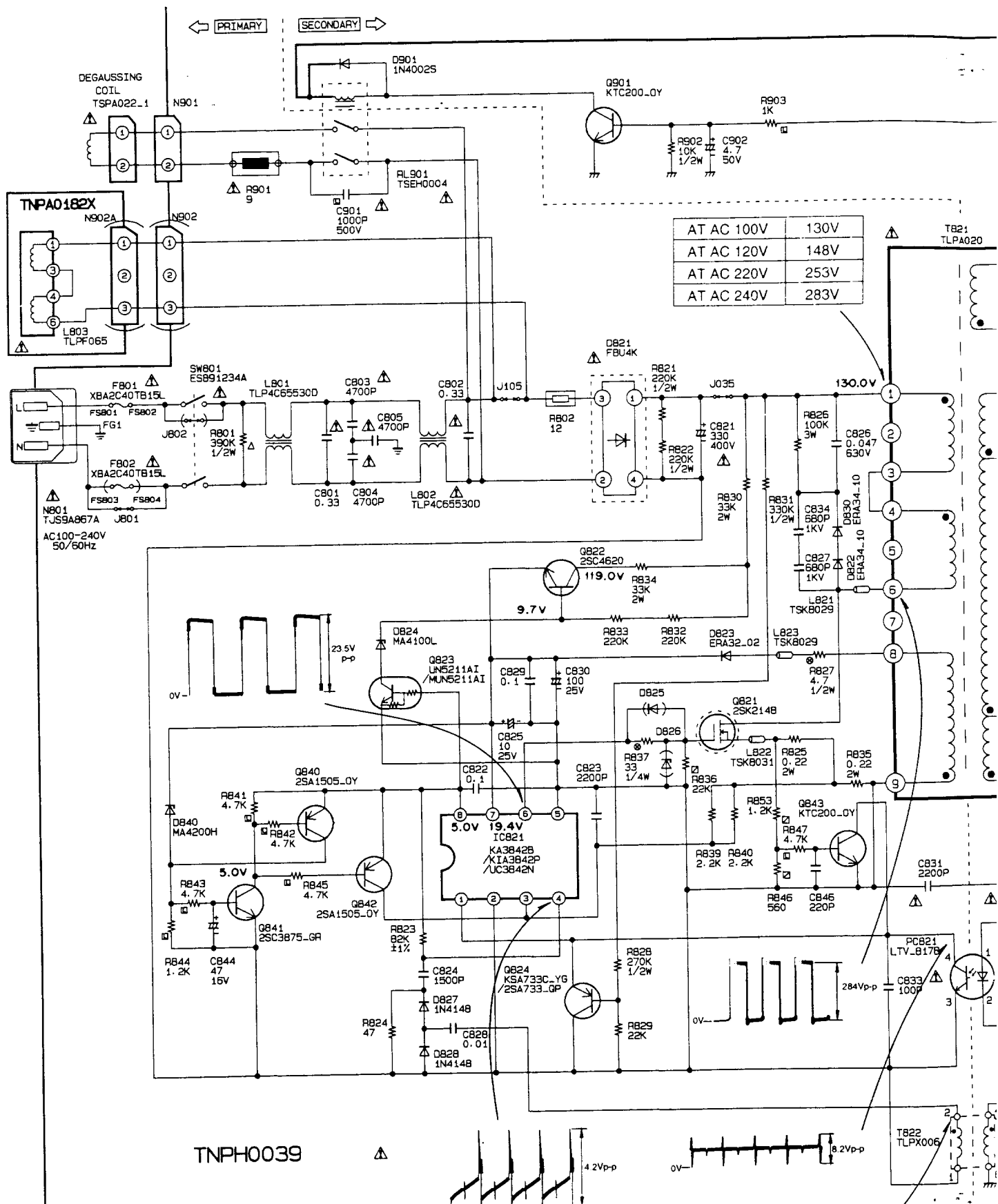
INPUT SIGNAL 1024X768 75Hz

SHEET 4

REV. 3



*INPUT SIGNAL 1024×768 75Hz

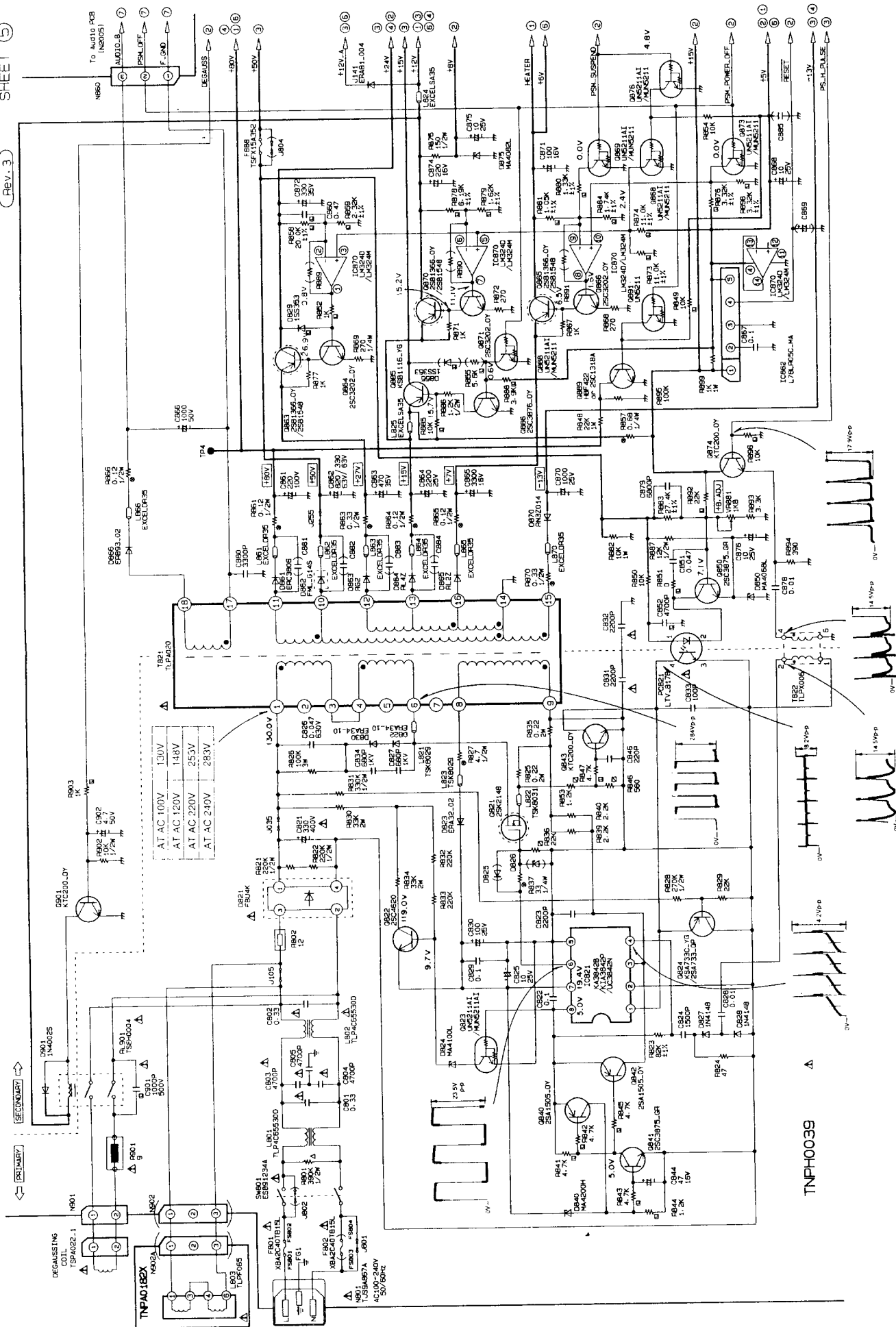




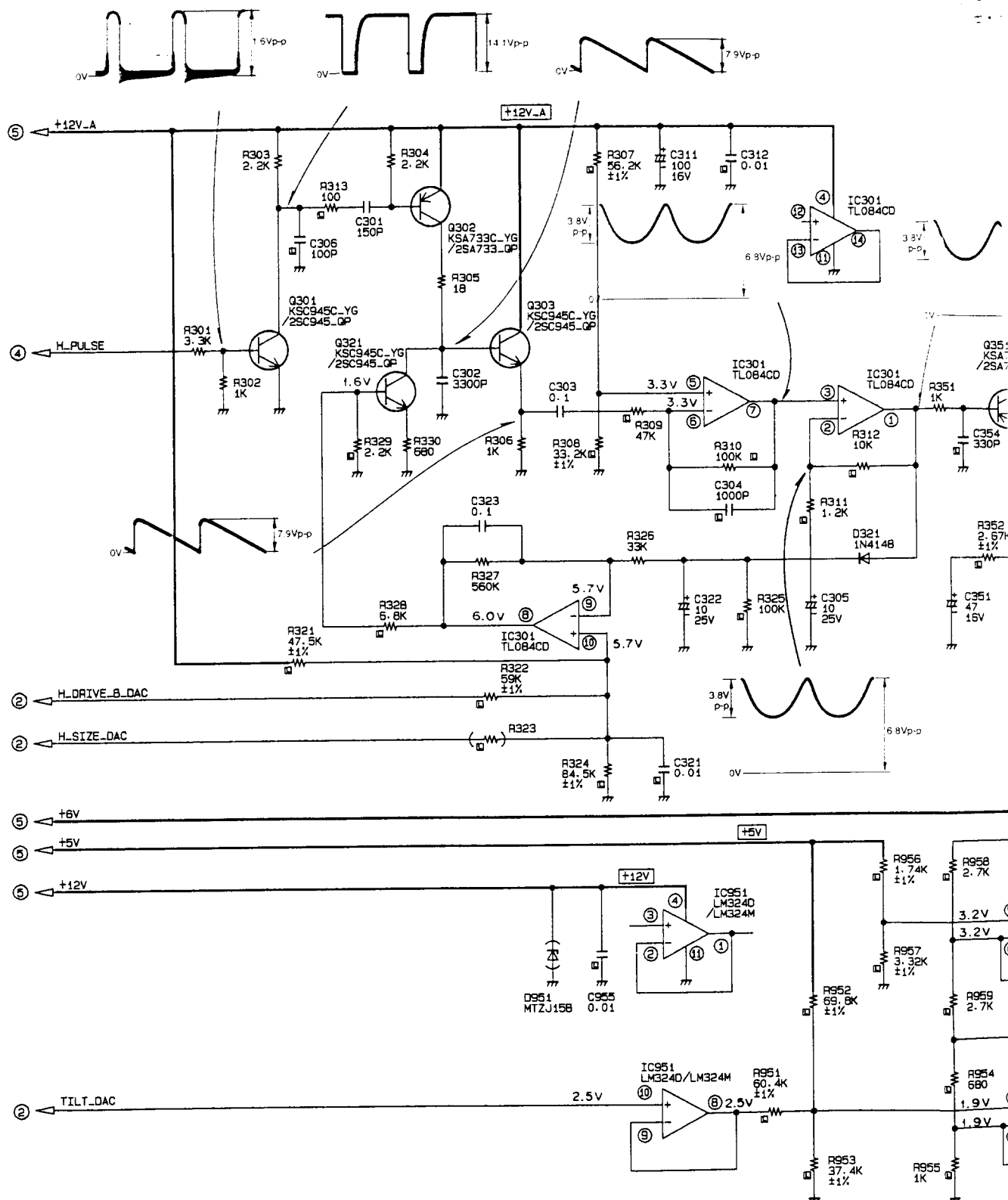
*INPUT SIGNAL 1024X768 75HZ

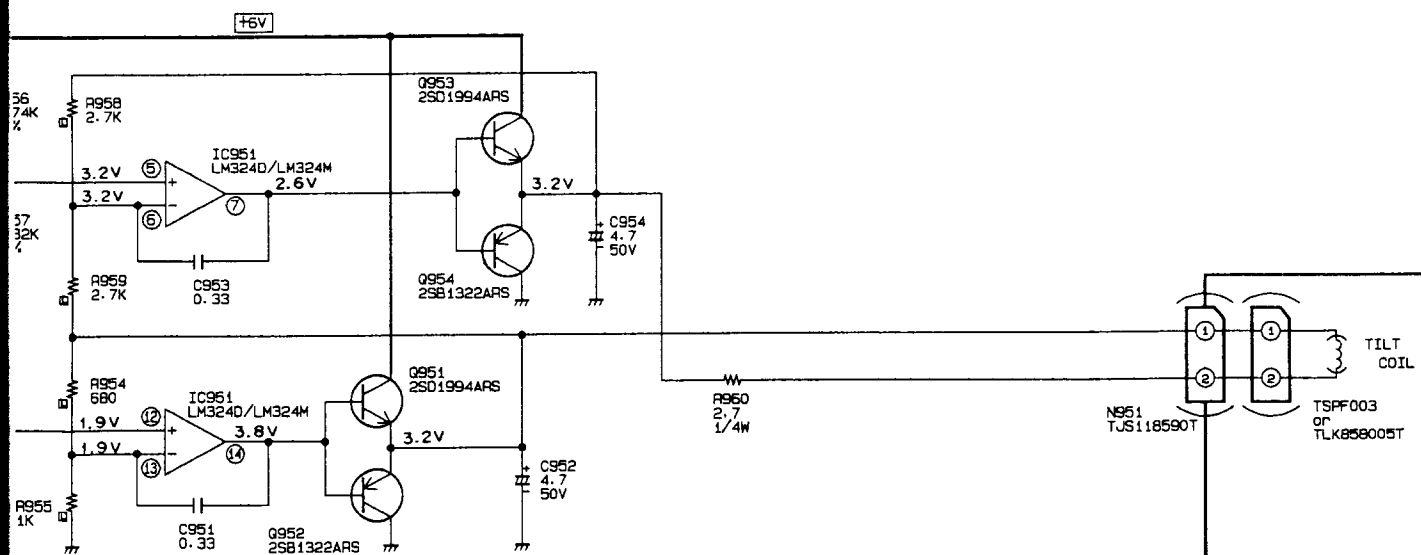
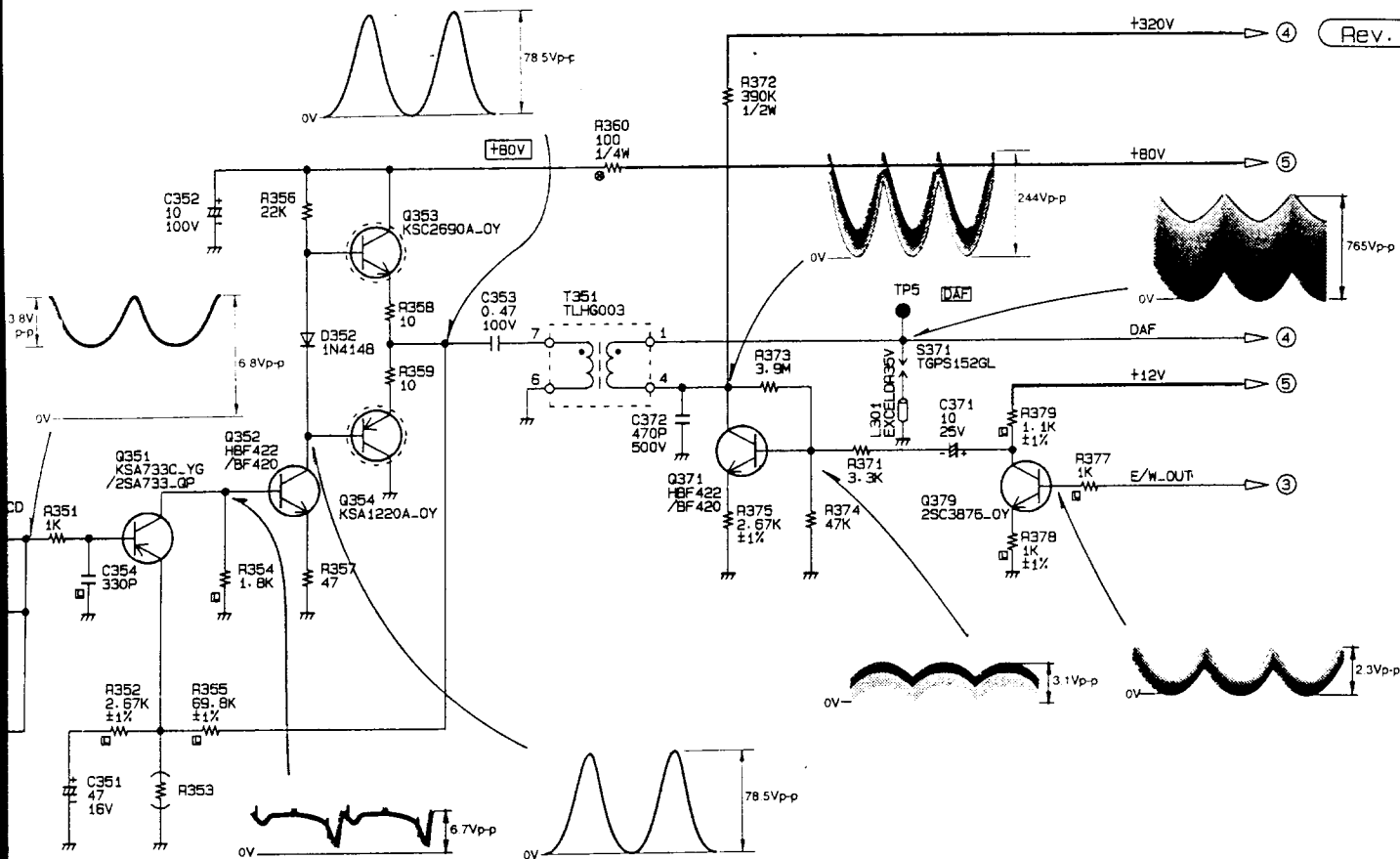
SHEET ⑤

Rev. 3



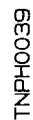
★INPUT SIGNAL 1024×768 75Hz

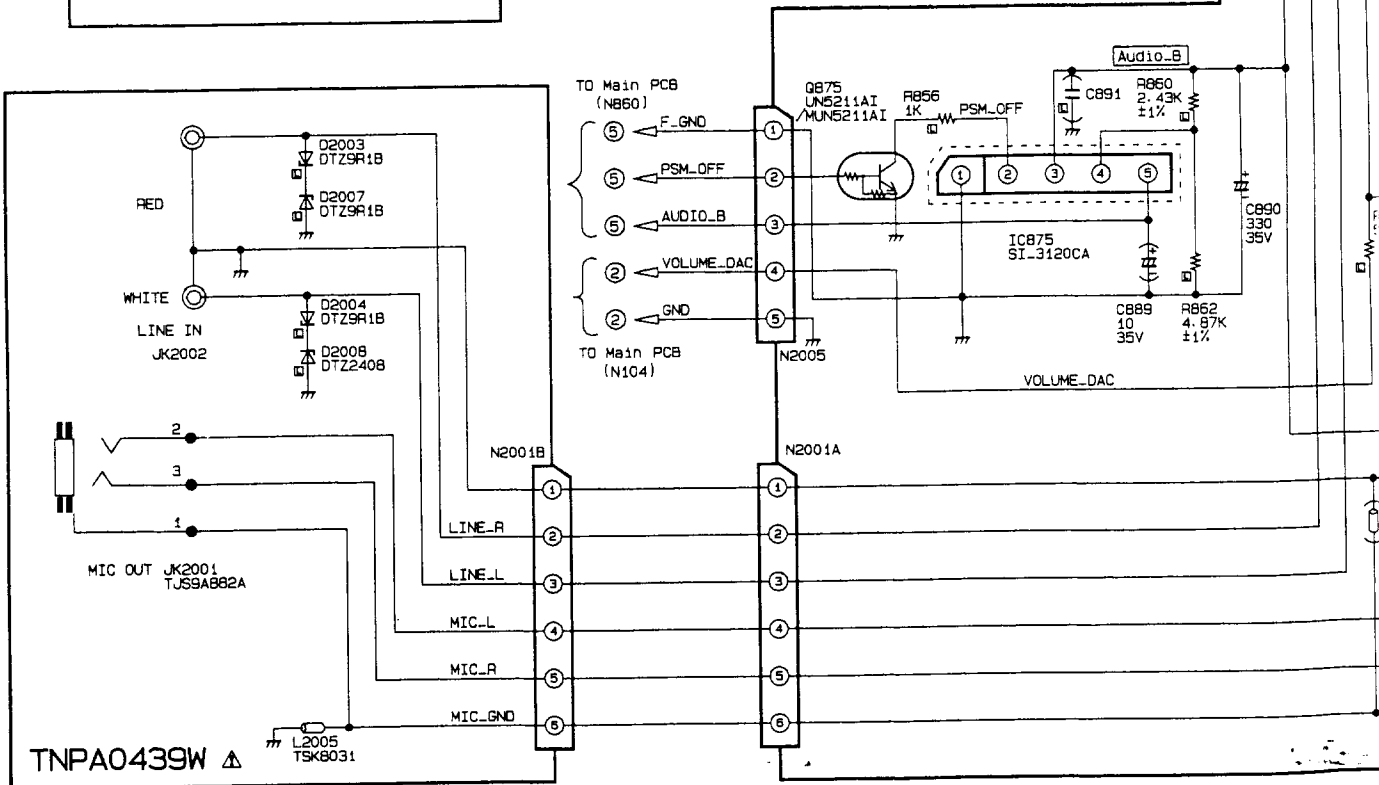
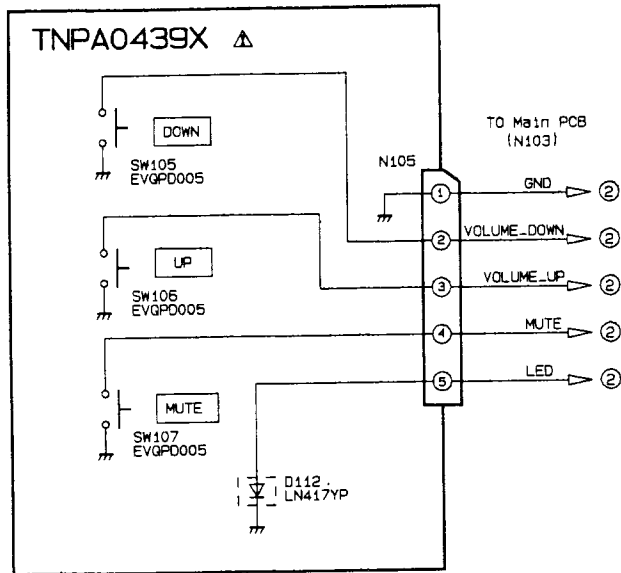




TNPH0039

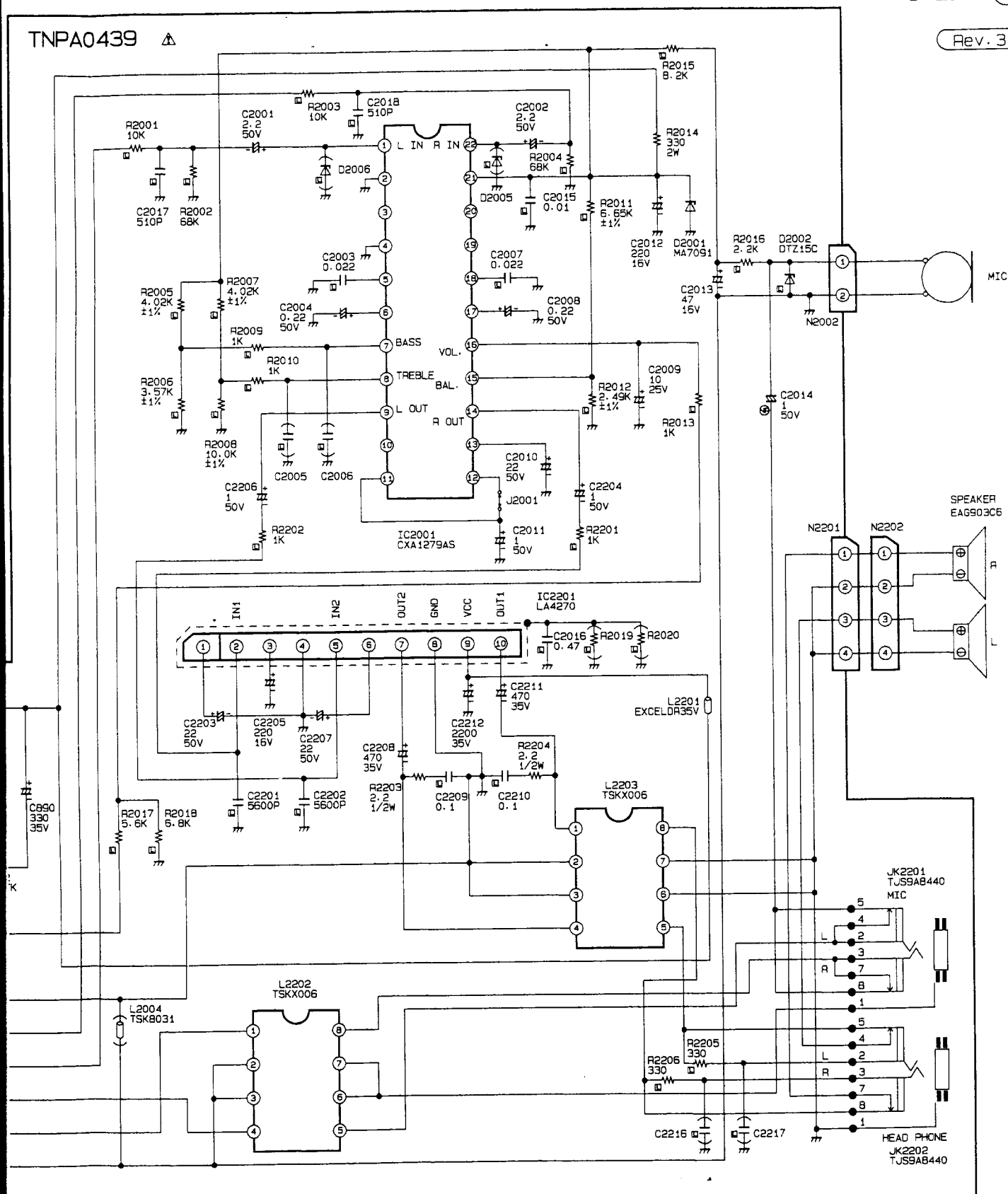




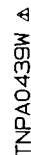


Important safety notice
 Components identified by ▲ mark
 have special characteristic
 important for safety.
 When replacing any of components,
 use only manufacturer's
 specified parts.

TNPA0439 ▲

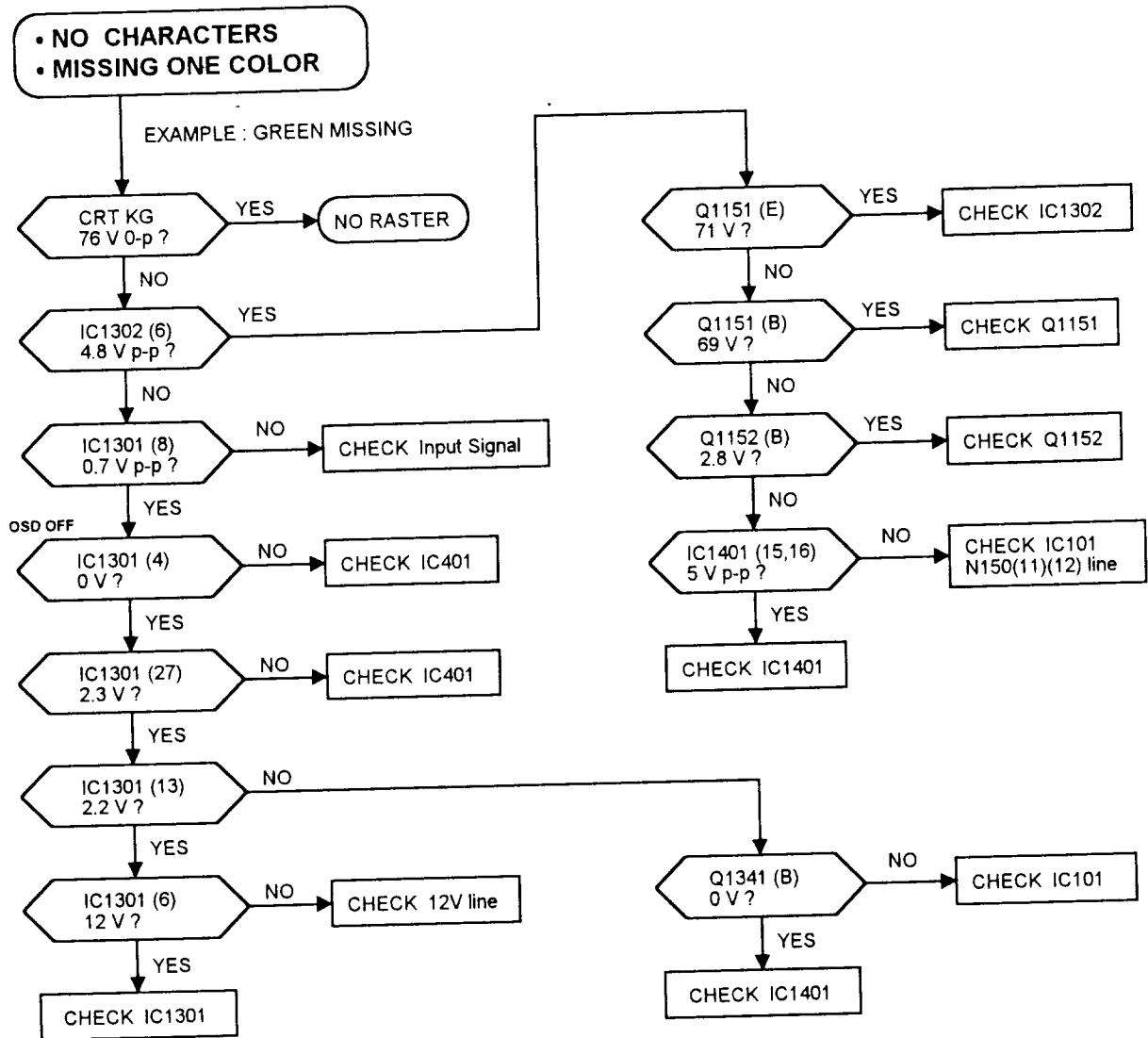


RESISTOR	<input checked="" type="checkbox"/> Solid	<input type="checkbox"/> Nonflammable	<input checked="" type="checkbox"/> Metal Oxide	<input checked="" type="checkbox"/> Flame Proof Rectangular	<input checked="" type="checkbox"/> Fusible	<input type="checkbox"/> Metal Film	<input type="checkbox"/> Wire Wound	<input type="checkbox"/> CHIP	
CAPACITOR	<input checked="" type="checkbox"/> Polyester	<input checked="" type="checkbox"/> Metallized Polyester	<input type="checkbox"/> Polystyrene	<input checked="" type="checkbox"/> Polypropylene	<input type="checkbox"/> Ceramic (SL)	<input checked="" type="checkbox"/> Temperature Compensation	<input type="checkbox"/> Ceramic	<input checked="" type="checkbox"/> Tantalum	<input type="checkbox"/> CHIP

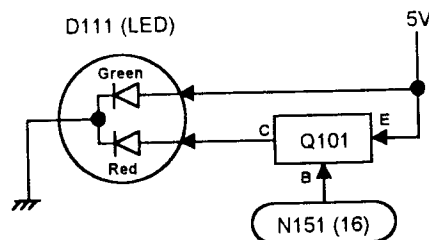


Important safety notice
Components identified by **Δ** mark
have special characteristic
important for safety.
When replacing any of components,
use only manufacturer's
specified parts.

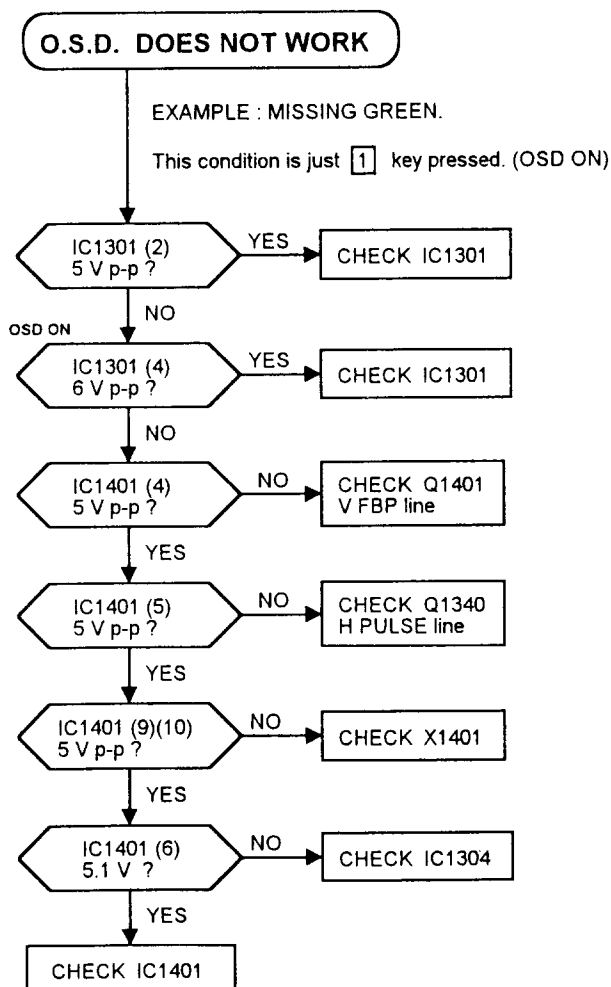
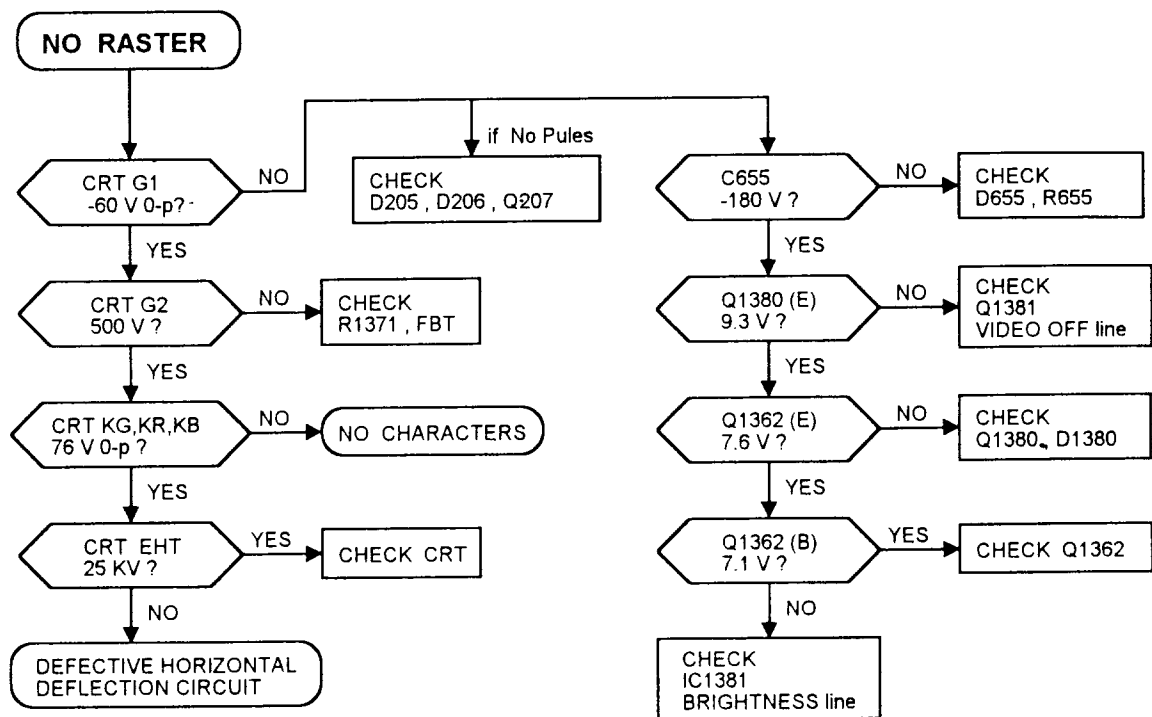
TROUBLE SHOOTING HINTS

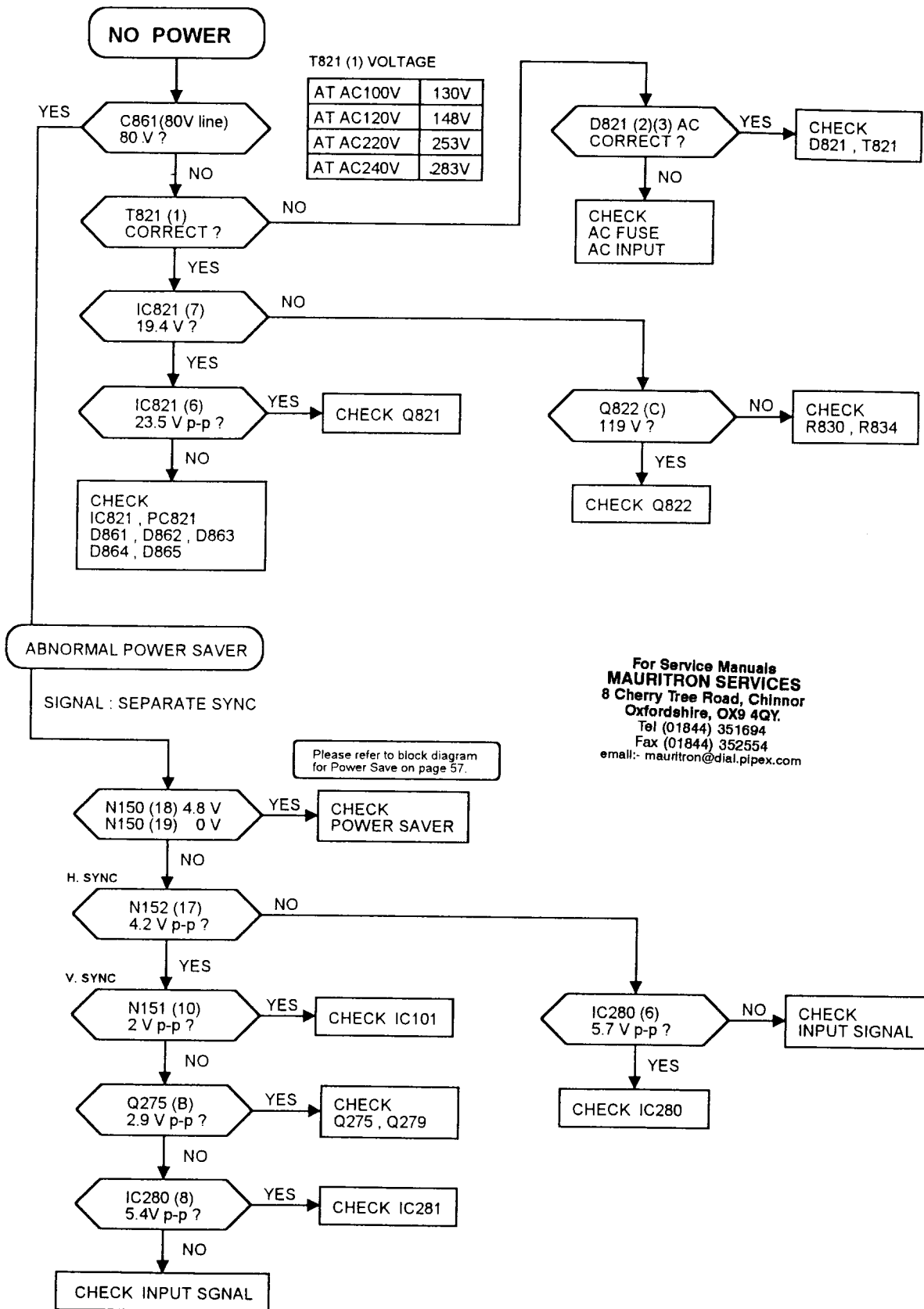


ABNORMAL POWER INDICATOR



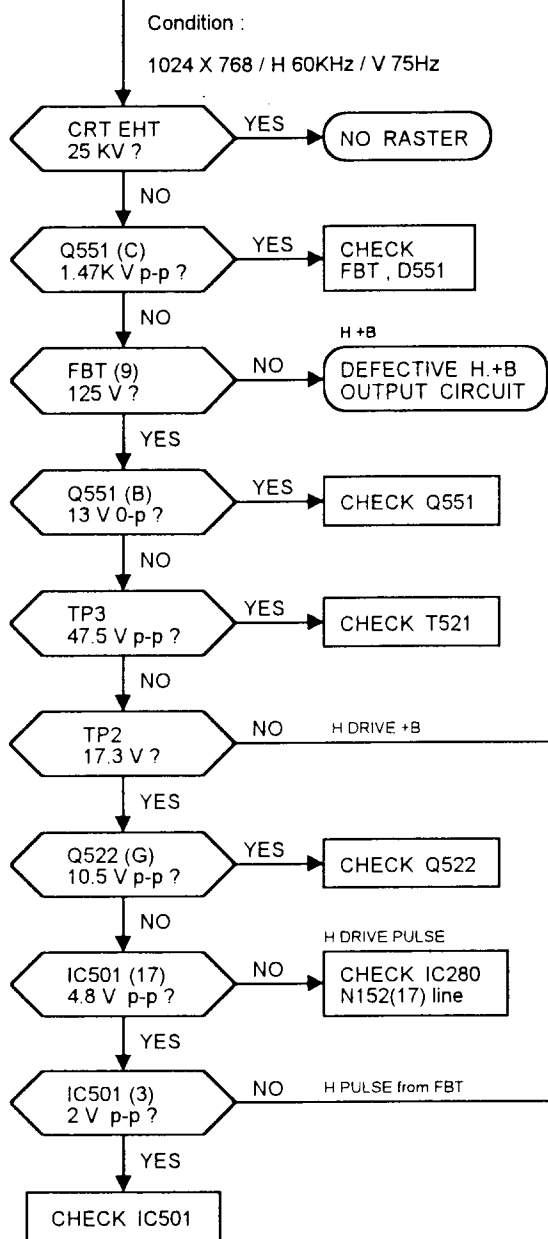
HS	VS	Q101(B)	COLOR
ON	ON	HIGH	GREEN
OFF	ON	LOW	YELLOW
ON	OFF	LOW	YELLOW
OFF	OFF	LOW	YELLOW





For Service Manuals
MAURITRON SERVICES
 8 Cherry Tree Road, Chinnor
 Oxfordshire, OX9 4QY.
 Tel (01844) 351694
 Fax (01844) 352554
 email:- mauritron@btinternet.com

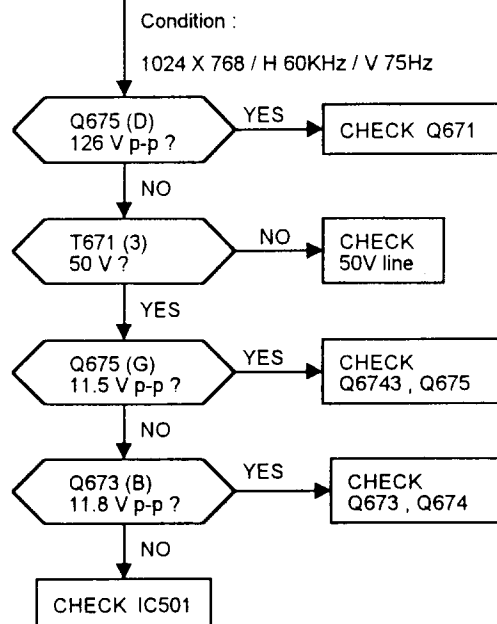
DEFECTIVE HORIZONTAL DEFLECTION CIRCUIT



H +B voltage for each mode

MODE 1 (fH 60KHz)	125 V
MODE 2 (fH 31KHz)	62 V
MODE 3 (fH 38KHz)	75 V
MODE 4 (fH 47KHz)	95 V
MODE 5 (fH 50KHz)	102 V
MODE 6 (fH 56KHz)	116 V
MODE 7 (fH 60KHz)	125 V
MODE 8 (fH 63KHz)	135 V

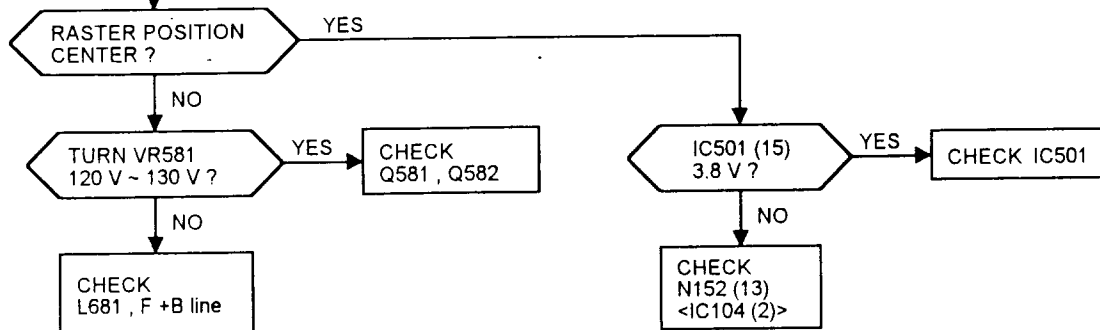
DEFECTIVE H. +B OUTPUT CIRCUIT



INCORRECT H. POSITION CONTROL

Condition :

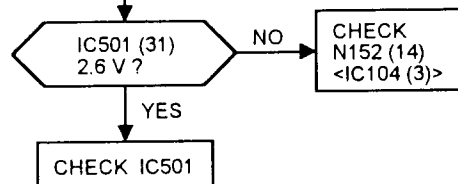
1024 X 768 / H 60KHz / V 75Hz



INCORRECT V. SIZE CONTROL

Condition :

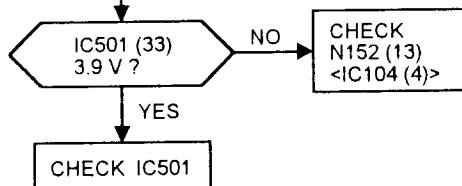
1024 X 768 / H 60KHz / V 75Hz



INCORRECT V. POSITION CONTROL

Condition :

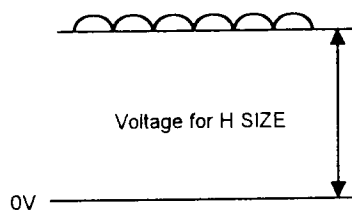
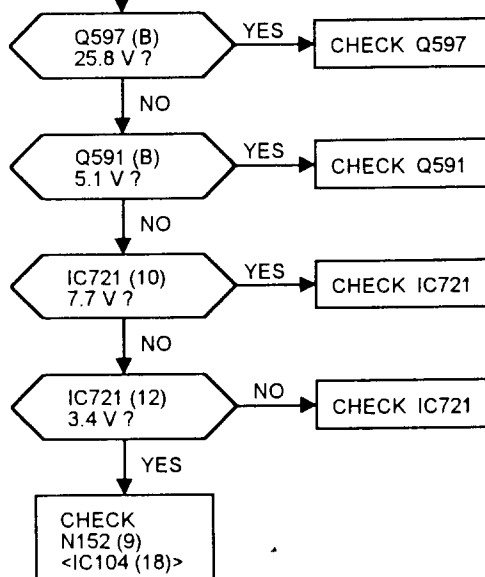
1024 X 768 / H 60KHz / V 75Hz



INCORRECT H. SIZE CONTROL

Condition :

1024 X 768 / H 60KHz / V 75Hz



H. SYNC DOES NOT HOLD

CHECK IC501

V. SYNC DOES NOT HOLD

CHECK IC501

If no horizontal and/or vertical sync from PC,
then the power save circuit becomes active.

**BRIGHT HORIZONTAL LINE
APPEARS ON THE SCREEN**

IC401 (5)
55.5 V p-p ?

YES

CHECK DY

NO

IC401 (1)
1.3 V 0-p ?

YES

CHECK IC401

NO

CHECK IC501

INCORRECT V.PCC

Condition :

1024 X 768 / H 60KHz / V 75Hz

Q598 (B)
0.9 V p-p ?

YES

CHECK Q598

NO

Q597 (B)
29.8 V 0-p ?

YES

CHECK Q597

NO

Q591 (B)
5.5 V 0-p ?

YES

CHECK Q591

NO

IC721 (9)
7.7 V ?

YES

CHECK IC721

NO

IC720 (2)
2.5 V ?

NO

CHECK
N151 (3)
< IC104 (7) >

YES

IC720 (4)
4.2 V 0-p ?

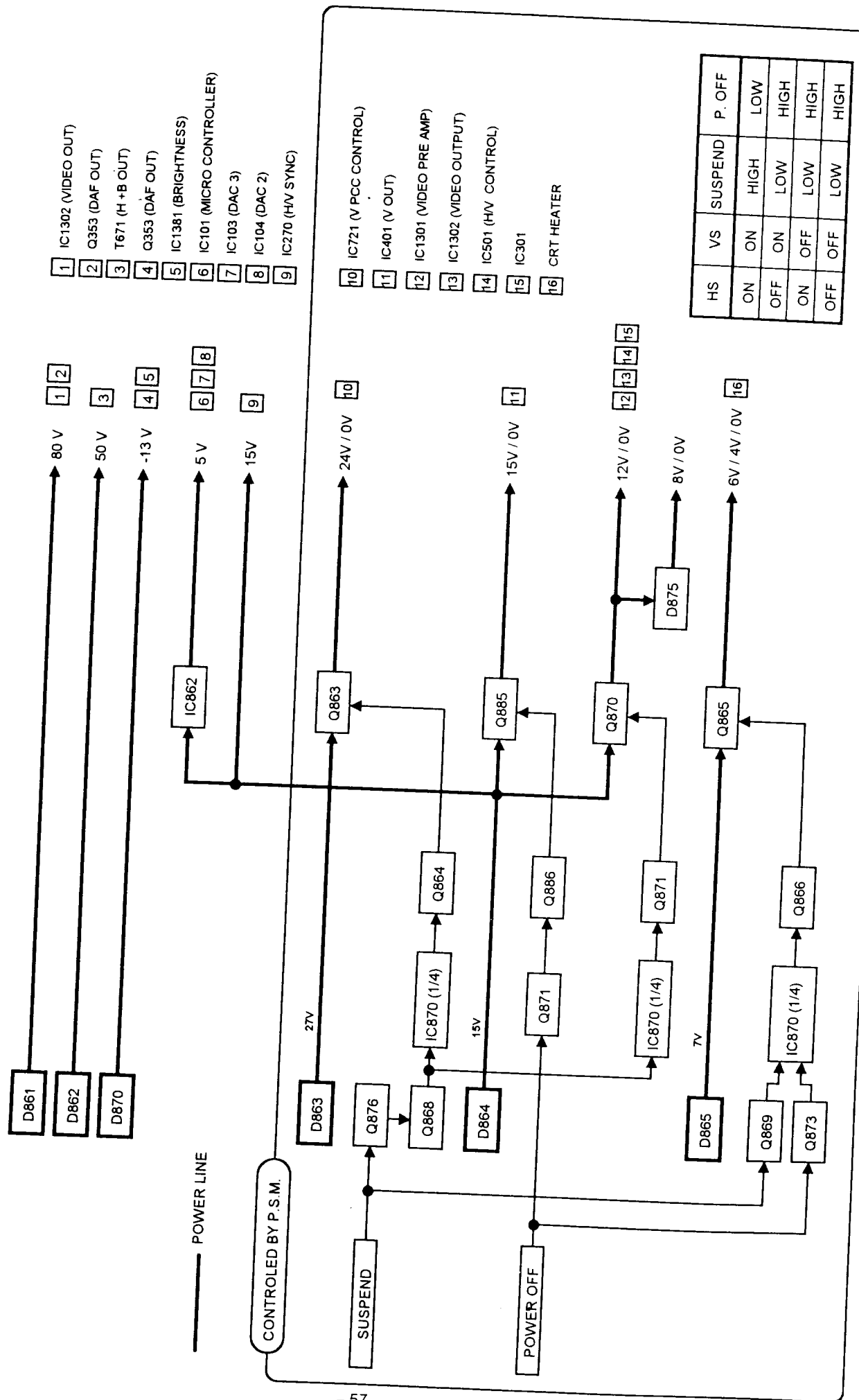
NO

CHECK IC501

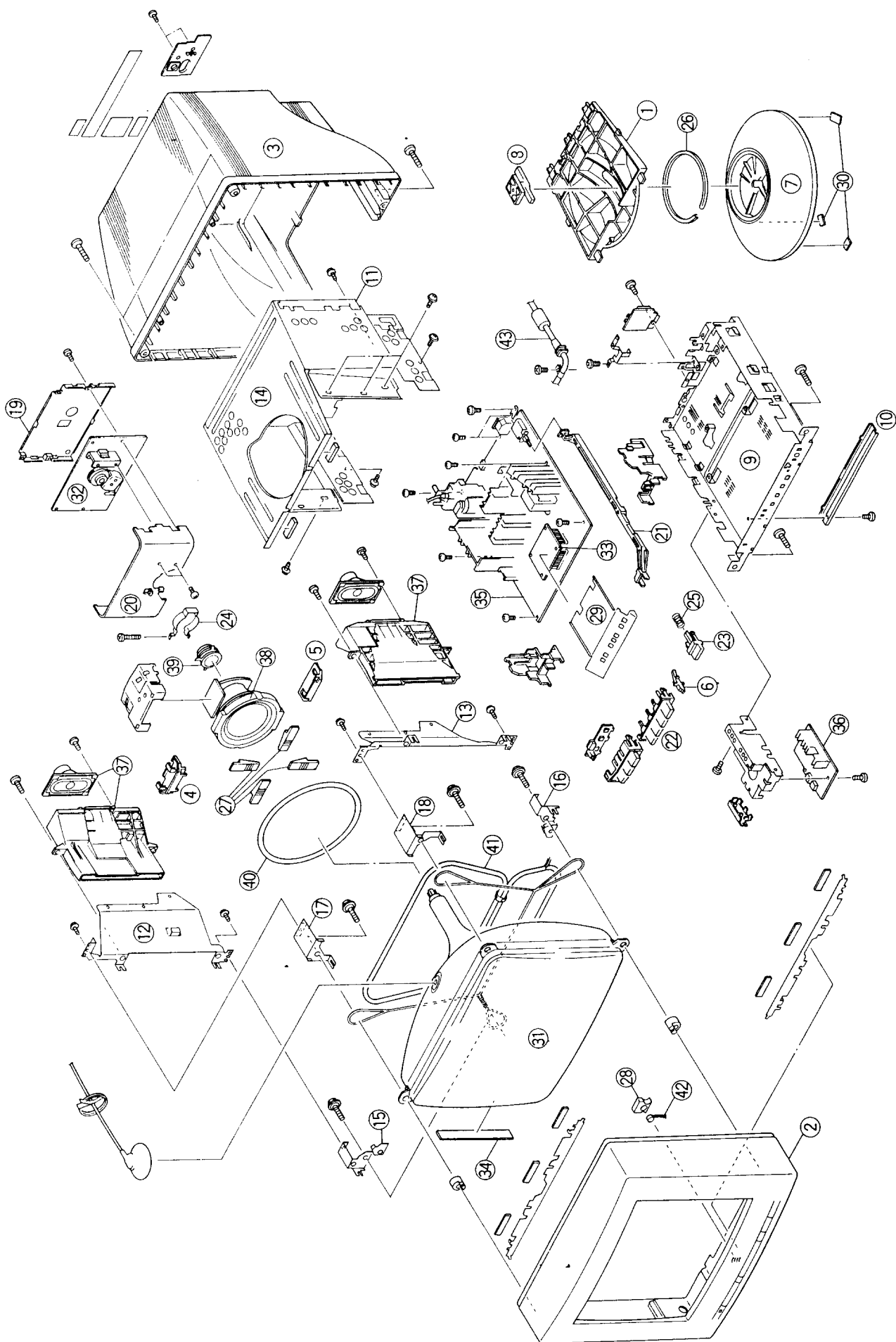
YES

CHECK IC720

REPAIR HINTS FOR POWER SAVE



EXPLODED VIEW



REPLACEMENT PARTS LIST

Important Safety Notice

Components identified by the International symbol have special characteristics important for safety. When replacing any of these components use only manufacture's specified parts.

RESISTOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
C	Carbon	F	± 1%
F	Fuse	J	± 5%
M	Metal Oxide	K	± 10%
S	Solid	M	± 20%
W	Wire Wound	G	± 2%

	Part No.	Description	
Example:	ERD25TJ104 (C) 100K (J)		1/4W

CAPACITOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
C	Ceramic	C	$\pm 0.25\text{pF}$
E	Electrolytic	D	$\pm 0.5\text{pF}$
P	Polyester	F	$\pm 1\text{pF}$
S	Styrol	J	$\pm 5\%$
T	Tantalum	K	$\pm 10\%$
PP	Polypropylene	L	$\pm 15\%$
		M	$\pm 20\%$
		P	$+100\% - 0\%$
		Z	$+80\% - 20\%$

	Part No.	Description
Example:	ECKF1H103ZF (C)	0.01μF (Z) 50V

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
	CABINET & MAIN PARTS				
△	1 TKY859516	BOTTOM CABINET	△	22 TBX8752602	KNOB(CONTROL)
△	2 TTE8719A02-2	ESCUTCHEON	△	23 TBX8752802	KNOB(POWER)
△	3 TZTKU0100AT	REAR COVER W/MODEL PLATE <-E,-G>		24 TESAO15	CRT PCB HOLDER
△	3 TZTKU0100AV	REAR COVER W/MODEL PLATE <-SW>		TES9148-4	SPRING(CRT EARTH)
△	3 TZTKU0100AW	REAR COVER W/MODEL PLATE <-U>		25 TES9296	SPRING(POWER SWITCH)
△	4 TKXA00701	TILT COIL HOLDER(UPPER)		26 TMM15404-1	SPACER RING
△	5 TKXA00801	TILT COIL HOLDER(UNDER)		TMM15414	CLAMPER(SMALL)
△	TKX872102	CRT SUPPORTER(R)		TMM16452	LEAD CLAMPER(LONG)
△	TKX872201	CRT SUPPORTER(L)		TMM17434-1	LEAD CLAMPER(SHORT)
△	TKKL5012	TERMINAL PANEL		TMM6463	CLAMPER(MIDDLE)
△	6 TTK859317	LED LENS		TMM7468	CLAMPER
△	7 TTK859979-4	PEDESTAL		TMM81416	CORD BAND(SMALL)
△	8 TTK859980	CENTER POST		TMM85541	LEAD CLAMPER(SMALL)
	9 TUAA04301	BOTTOM PLATE		TMM85576-1	CRT RUBBER
	10 TUX86195	BOTTOM PLATE BRACKET		27 TMM85586	RUBBER(WEDGE)
	TSAA3001-1	RADIATOR		28 TMM85597-1	MICROPHONE RUBBER
	11 TUCC5143	SHIELD CASE(REAR)		TMM87408	LEAD CLAMPER
	12 TUCC5156	SHIELD PLATE(R-FRONT)	△	29 TMKE053	PC BOARD BARRIER (MICRO COMPUTER)
	13 TUCC5157	SHIELD PLATE(L-FRONT)	△	TMKG032	CRT RUBBER
	14 TUCC5158	SHIELD CASE	△	TMKG035	SPONGE(FOR RADIATOR)
	TUCC5187	EARTH METAL(REAR)		30 TMK84990	SET LEG
	15 TUCX5020	EARTH METAL(R-UNDER)		TMK85570	FERRITE STICK(WEAK)
	16 TUCX5021	EARTH METAL(L-UNDER)		TMK85572	FERRITE STICK(STRONG)
	17 TUC86980	EARTH METAL(R-UPPER)		TMK87711	MICROPHONE SPONGE
	18 TUC86981	EARTH METAL(L-UPPER)		THECO019	SCREW(FOR CRT PCB HOLDER)
	19 TUSA007	SHIELD CASE(CRT PCB)		THT1027	SCREW(FOR CRT)
	20 TUSDO03-1	SHIELD PLATE(CRT PCB)		THT1069	SCREW(FOR SHIELD CASE)
△	TBMC483	MODEL PLATE<-SW>		XTB5+16A	SCREW
△	TBMC484	MODEL PLATE<-U>		XTN5+16A	SCREW
△	TBMC485	MODEL PLATE<-E,-G>		XTV3+10A	SCREW
△	TBXA05101	POWER SWITCH SHAFT		XTV3+6J	SCREW
				XTV3+8J	SCREW
				XYA4+EF8	SCREW
				XYE3+EJ10	SCREW
			△	31 M41KXH140X-J	PICTURE TUBE
				32 TNPA0182-21	PC BOARD W/COMPONENT(CRT)

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
△	33	TNPA0287-22 PC BOARD W/COMPONENT (MICRO COMPUTER)	IC521	LM358MX	IC
	34	TNPA0371-21 PC BOARD W/COMPONENT(TCO)	IC720	UPC1406HA	IC
	35	TNPH0039-24 PC BOARD W/COMPONENT (MAIN)	IC721	LM324MX	IC
△	36	TXANP51734FM PC BOARD W/COMPONENT (AUDIO/CONTROL/TERMINAL)	IC821	KA3842B	IC
	37	EAG903C6 DOME SPEAKER	IC862	L78LRO5C-MA	IC
	38	MEY41JHD DEFLECTION YOKE	IC870	LM324MX	IC
△	39	TLCB002 CONVERGENCE COIL	IC875	SI-3120CA	HYBRID IC
	40	TLK858005T TILT COIL	IC951	LM324MX	IC
	41	TSPA022-1 DEGAUSS COIL	IC1301	LM1281N	IC
△	42	TNQ80970 MICROPHONE	IC1302	CVA2419TX	HYBRID IC
	TSXF005	AUDIO CORD	IC1304	KA78L05AZ	IC
	TSXF006	MICROPHONE CORD	IC1331	LM358MX	IC
△	43	TSXF041-5 SIGNAL CORD	IC1381	LM358MX	IC
	TSX8484	POWER CORD<-E,-G>	IC1401	STV9422	IC
	TSX8492	POWER CORD<-SW>	IC2001	CXA1279AS	IC
△	TSX8493	POWER CORD<-U>	IC2201	LA4270	IC
	TSXX005	1P/2P CONNECTOR ASSY	TRANSISTORS		
	TSXX009	1P TERMINAL ASSY	Q11	2SK1470TD	TRANSISTOR
△	TSXX026	5P CONNECTOR ASSY	Q12	2SD602R	TRANSISTOR
	TSXX037	4P CONNECTOR ASSY	Q13	2SC4080DET	TRANSISTOR
	TXAJTC2P750A	2P CONNECTOR ASSY	Q14	2SC4080DET	TRANSISTOR
△	TXAJTC5P484	5P CONNECTOR ASSY	Q15	2SA1575DET	TRANSISTOR
	TXAJTC6P580	6P CONNECTOR ASSY	Q101	UN5111AI	TRANSISTOR
	TXA3A11734VM	CRT EARTH LEAD	Q102	UN5111AI	TRANSISTOR
△	TSC8909-0	FERRITE CORE	Q207	2SC945Q	TRANSISTOR
	XBA215T4.0AH	FUSE(4.0A)	Q220	2SA1739R	TRANSISTOR
	TSMA002	MAGNET	Q221	2SC3811R	TRANSISTOR
△	T4F31519Q	POLYESTER TAPE(50M)	Q275	UN5211AI	TRANSISTOR
	T4F72425Q	COTTON TAPE(55M)	Q279	UN5211AI	TRANSISTOR
	T4F90240	MAIRA TAPE	Q286	UN5111AI	TRANSISTOR
△	TPCA28901	OUTER CARTON	Q287	UN5211AI	TRANSISTOR
	TXAPD1D1733F	FILLER	Q301	2SC945Q	TRANSISTOR
	TPE814109-2	SET COVER	Q302	2SA733Q	TRANSISTOR
△	TQE8513-2	FUN BAG COVER	Q303	2SC945Q	TRANSISTOR
	TQBE0084	INSTRUCTION BOOK	Q321	2SC945Q	TRANSISTOR
	TQD1712010	PASS CARD	Q351	2SA733Q	TRANSISTOR
△	TQD8518073-2	WARRANTY CARD<-U>	Q352	2SC1473AR	TRANSISTOR
	TQDE18002	WARRANTY CARD<-E>	Q353	KSC2690A-OY	TRANSISTOR
	TQF83825-6	SERIAL NO. LABEL	Q354	KSA1220A-OY	TRANSISTOR
△	TQF85363-2	CARTON LABEL<-G>	Q371	2SC1473AR	TRANSISTOR
	TQF85363-3	CARTON LABEL<-SW>	Q379	2SC3876-OY	TRANSISTOR
	TQF85363-4	CARTON LABEL<-U>	Q521	2SD2058-GR	TRANSISTOR
△	TQF85363-8	CARTON LABEL<-E>	Q522	2SK2015Z	TRANSISTOR
	TQF86550	EARTH CAUTION LABEL<-SW>	Q551	2SC5270AO2FD	TRANSISTOR
	TQF86608	EARTH CAUTION LABEL <-E,-G>	Q561	UN5211AI	TRANSISTOR
I.C			Q562	2SK2161YB	TRANSISTOR
IC101	TVSA0085	IC	Q564	UN5211AI	TRANSISTOR
IC102	24LC08BTISN	IC	Q565	2SK2161YB	TRANSISTOR
IC103	MB88346BPFTF	IC	Q581	2SD2058-GR	TRANSISTOR
IC104	MB88346BPFTF	IC	Q582	2SB1548Q	TRANSISTOR
IC121	24LC21TISN	IC	Q591	2SD1149R	TRANSISTOR
IC270	LM2931CMX	IC	Q594	UN5211AI	TRANSISTOR
IC271	MM74HCOOMX	IC	Q595	UN5211AI	TRANSISTOR
IC280	M52346SP	IC	Q596	UN5211AI	TRANSISTOR
IC301	LF347MX	IC	Q597	2SB792R	TRANSISTOR
IC401	TDA8172	IC	Q598	2SD1273APLB	TRANSISTOR
IC501	TDA9103	IC	Q671	UN5211AI	TRANSISTOR
			Q672	UN5211AI	TRANSISTOR
			Q673	KTC3265-OY	TRANSISTOR
			Q674	KTA1298-OY	TRANSISTOR
			Q675	2SK1917F91	TRANSISTOR

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
Q771	2SD602R	TRANSISTOR	D188	1SS353	DIODE
Q821	2SK2148	TRANSISTOR	D201	MA4056M	DIODE
Q822	2SC4620V25	TRANSISTOR	D202	MA4056M	DIODE
Q823	UN5211AI	TRANSISTOR	D203	MA4056M	DIODE
Q824	2SA733Q	TRANSISTOR	D204	MA4056M	DIODE
Q840	2SA1505-OY	TRANSISTOR	D205	MA152K	DIODE
Q841	2SC3875-GR	TRANSISTOR	D206	MA152K	DIODE
Q842	2SA1505-OY	TRANSISTOR	D220	1N4148	DIODE
Q843	KTC200-OY	TRANSISTOR	D221	1N4148	DIODE
Q850	2SC3875-GR	TRANSISTOR	D271	1SS353	DIODE
Q863	2SB1548Q	TRANSISTOR	D272	1SS353	DIODE
Q864	2SC3202-OY	TRANSISTOR	D273	1SS353	DIODE
Q865	2SB1548Q	TRANSISTOR	D281	1SS353	DIODE
Q866	2SC3202-OY	TRANSISTOR	D321	1N4148	DIODE
Q868	UN5211AI	TRANSISTOR	D352	1N4148	DIODE
Q869	UN5211AI	TRANSISTOR	D401	1N4001S	DIODE
Q870	2SB1548Q	TRANSISTOR	D403	1SS353	DIODE
Q871	2SC3202-OY	TRANSISTOR	D410	1N4148	DIODE
Q873	UN5211AI	TRANSISTOR	D411	MA4051M	DIODE
Q874	KTC200-OY	TRANSISTOR	D421	1N4148	DIODE
Q875	UN5211AI	TRANSISTOR	D501	MA700	DIODE
Q876	UN5211AI	TRANSISTOR	D521	MA4150M	DIODE
Q885	KSB1116-YG	TRANSISTOR	D522	1N4148	DIODE
Q886	2SC3876-OY	TRANSISTOR	D523	MA30WA	DIODE
Q888	UN5211AI	TRANSISTOR	D530	MA4051M	DIODE
Q889	2SC1473AR	TRANSISTOR	D551	FMP-3FU	DIODE
Q890	UN5211AI	TRANSISTOR	D552	RP3F014-302	DIODE
Q891	UN5211AI	TRANSISTOR	D553	TVSRG2A	DIODE
Q901	KTC200-OY	TRANSISTOR	D554	11DQ04	DIODE
Q951	2SD1994AR	TRANSISTOR	D555	EL1Z	DIODE
Q952	2SB1322AR	TRANSISTOR	D561	10DF6	DIODE
Q953	2SD1994AR	TRANSISTOR	D564	10DF6	DIODE
Q954	2SB1322AR	TRANSISTOR	D571	1SS353	DIODE
Q1051	2SA1767Q	TRANSISTOR	D572	1SS353	DIODE
Q1052	2SC1473AR	TRANSISTOR	D573	1SS353	DIODE
Q1151	2SA1767Q	TRANSISTOR	D581	ERC30-02	DIODE
Q1152	2SC1473AR	TRANSISTOR	D582	ERC30-02	DIODE
Q1251	2SA1767Q	TRANSISTOR	D591	MA27WB	DIODE
Q1252	2SC1473AR	TRANSISTOR	D614	ERA1506	DIODE
Q1340	2SC3811R	TRANSISTOR	D615	DTZTT115R6B	DIODE
Q1341	UN5211AI	TRANSISTOR	D651	1N4148	DIODE
Q1362	2SA1767Q	TRANSISTOR	D654	ERA34-10	DIODE
Q1380	2SA733Q	TRANSISTOR	D655	10DF6	DIODE
Q1381	UN5211AI	TRANSISTOR	D656	1N4148	DIODE
Q1401	UN5211AI	TRANSISTOR	D657	MTZJ15C	DIODE
	DIODES		D671	31DF2	DIODE
D11	MA3X200FOL	DIODE	D681	MA700	DIODE
D12	MA3150M	DIODE	D821	FBU4KF	DIODE
D13	MA174	DIODE	D822	ERA34-10	DIODE
D14	MA111	DIODE	D823	ERA3202	DIODE
D108	RB706F40	DIODE	D824	MA4100L	DIODE
D111	SML1816W	DIODE(LED)	D827	1N4148	DIODE
D112	LN417YP	DIODE(LED)	D828	1N4148	DIODE
D151	MA4056M	DIODE	D829	1SS353	DIODE
D152	MA4056M	DIODE	D830	ERA34-10	DIODE
D156	MA4056M	DIODE	D840	MA4200H	DIODE
D157	MA728	DIODE	D850	MA4068L	DIODE
D169	MA142WK	DIODE	D861	ERC3806	DIODE
D185	1SS353	DIODE	D862	FML-G14S	DIODE
D186	1SS353	DIODE	D863	TVSRG2	DIODE
D187	1SS353	DIODE	D864	RL4Z	DIODE
			D865	RL2Z	DIODE

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
D866	ERB93-02	DIODE	L864	EXCELD35C	LC COMBINATION
D870	RN3Z014-305	DIODE	L865	EXCELD35C	LC COMBINATION
D875	MA4082L	DIODE	L866	EXCELD35C	LC COMBINATION
D901	1N4002S	DIODE	L870	EXCELD35C	LC COMBINATION
D946	10DF6	DIODE	L1051	TLTR47K186T	PEAKING COIL
D1001	MA151K	DIODE	L1151	TLTR33K186T	PEAKING COIL
D1002	MA151K	DIODE	L1251	TLTR22K186T	PEAKING COIL
D1051	MA167A	DIODE	L1302	TSK8029	FERRITE CORE
D1101	MA151K	DIODE	L1303	TSK8029	FERRITE CORE
D1102	MA151K	DIODE	L1304	TSK8029	FERRITE CORE
D1151	MA167A	DIODE	L1305	EXCELD35C	LC COMBINATION
D1201	MA151K	DIODE	L1306	EXCELD35C	LC COMBINATION
D1202	MA151K	DIODE	L1307	TSK8029	FERRITE CORE
D1251	MA167A	DIODE	L1308	EXCELD35C	LC COMBINATION
D1331	1N4148	DIODE	L1351	TSK8029	FERRITE CORE
D1332	1N4148	DIODE	L1352	TSK8031	FERRITE CORE
D1341	MA151K	DIODE	L1361	TSK8029	FERRITE CORE
D1342	MA151K	DIODE	L1362	TSK8031	FERRITE CORE
D1343	MA151K	DIODE	L1371	TSK8029	FERRITE CORE
D1362	1N4148	DIODE	L2201	EXCELD35C	LC COMBINATION
D1365	MA4051M	DIODE	L2202	TSKX006	FERRITE CORE
D1366	MA4051M	DIODE	L2203	TSKX006	FERRITE CORE
D1367	MA4051M	DIODE	△ T351	TLHGO03	D.A.F. TRANSFORMER
D1380	MA4082L	DIODE	△ T521	TLH4C65407D	COIL
D1381	EU02Z	DIODE	△ T601	ETF39L91AZ	FLYBACK TRANSFORMER
D1382	ERA18-04	DIODE	△ T671	TLHX004	TRANSFORMER
D1385	ERA1502	DIODE	△ T821	TLP4020	POWER TRANSFORMER
D1401	MTZU5R6B	DIODE	△ T822	TLPX006	TRANSFORMER
D1403	MTZU5R6B	DIODE		CONTROL	
D1404	MTZU5R6B	DIODE			
D2001	MA7091A	DIODE	VR581	EVND1AA00B13	CONTROL B 1K OHM
D2002	DTZTT1115C	DIODE	VR881	EVND1AA00B13	CONTROL B 1K OHM
D2003	DTZTT119R1B	DIODE		CAPACITORS	
D2004	DTZTT119R1B	DIODE			
D2007	DTZTT119R1B	DIODE			
D2008	DTZTT119R1B	DIODE	C2	ECQB1H472JF	P 4700PF J 50V
J141	ERA81004	DIODE	C11	ECUX1C225ZFW	C 2.2UF Z 16V
J302	EU02Z	DIODE	C12	ECUX1C224KBW	C 0.22UF K 16V
J507	EU02Z	DIODE	C13	ECUX1H104ZFX	C 0.1UF Z 50V
			C14	ECUX1H104ZFX	C 0.1UF Z 50V
	COIL & TRANSFORMERS		C16	ECUX1H561KBN	C 560PF K 50V
L180	ELEY561KA	PEAKING COIL	C17	TAC1022Z104H	C 0.1UF K 200V
L230	EXCELSR35S	LC COMBINATION	C101	ECEA1AGE101	E 100UF 10V
L301	EXCELD35C	LC COMBINATION	C102	ECUX1H333KBX	C 0.033UF K 50V
L555	TLH85820Z1	COIL	C103	ECUX1H103KBG	C 0.01UF K 50V
L556	EXCELSA35T	LC COMBINATION	C104	ECUX1H103KBG	C 0.01UF K 50V
△ L558	TLHE001	COIL	C105	ECUX1H220JCN	C 22PF J 50V
L582	TLH85815T	COIL	C106	ECUX1H220JCN	C 22PF J 50V
L591	TLUACNB220K	PEAKING COIL	C107	ECUX1H103KBG	C 0.01UF K 50V
L601	TSK8029	FERRITE CORE	C108	ECEA1HGE010	E 1UF 50V
L602	EXCELSA35T	LC COMBINATION	C109	ECUX1C105ZFX	C 1.0UF Z 16V
△ L801	TLP4C65530D	LINE FILTER	C110	ECUX1H221KBN	C 220PF K 50V
△ L802	TLP4C65530D	LINE FILTER	C111	ECUX1H220JCN	C 22PF J 50V
L821	TSK8029	FERRITE CORE	C112	ECUX1H221KBN	C 220PF K 50V
L822	TSK8031	FERRITE CORE	C113	ECUX1C105ZFX	C 1.0UF Z 16V
L823	TSK8029	FERRITE CORE	C121	ECUX1H103KBG	C 0.01UF K 50V
L824	EXCELSA35T	LC COMBINATION	C175	ECUX1H103KBG	C 0.01UF K 50V
L825	EXCELSA35T	LC COMBINATION	C177	ECUX1H103KBG	C 0.01UF K 50V
L861	EXCELD35C	LC COMBINATION	C180	ECEA1AGE471	E 470UF 10V
L862	EXCELD35C	LC COMBINATION	C185	ECUX1H102KBN	C 1000PF K 50V
L863	EXCELD35C	LC COMBINATION	C186	ECUX1H102KBN	C 1000PF K 50V
			C201	ECEA1HGE2R2	E 2.2UF 50V
			C203	ECUX1H102KBN	C 1000PF K 50V

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
C206	ECQE2104KF	P 0.1UF K 200V	C508	ECEA1CGE470	E 47UF 16V
C230	ECUX1H103KBG	C 0.01UF K 50V	C509	ECQV1H224JL	P 0.22UF J 50V
C231	ECA1AFQ221	E 220UF 10V	C512	ECUX1H104ZFX	C 0.1UF Z 50V
C234	ECUX1H470JCG	C 47PF J 50V	C513	ECEA1CGE102	E 1000UF 16V
C270	ECEA1CKG470	E 47UF 16V	C514	ECQV1H105JL	P 1.0UF J 50V
C279	ECUX1H221KBN	C 220PF K 50V	C521	ECUX1H103KBG	C 0.01UF K 50V
C280	ECQV1H474JL	P 0.47UF J 50V	C522	ECUX1H102JCX	C 1000PF J 50V
C281	ECUX1H472KBG	C 4700PF K 50V	C523	ECEA1EGE221	E 220UF 25V
C282	ECEA1HGE010	E 1UF 50V	C524	ECKD2H332KB5	C 3300PF K 500V
C283	ECEA1HGE2R2	E 2.2UF 50V	C525	ECEA1VGE470	E 47UF 35V
C284	ECEA1HGE010	E 1UF 50V	C539	ECUX1H103KBG	C 0.01UF K 50V
C285	ECEA1HGER47	E 0.47UF 50V	C545	ECEA1EGE100	E 10UF 25V
C286	ECUX1H333KBX	C 0.033UF K 50V	C551	ECWH15H472HN	PP 4700PF H 1.5KV
C287	ECUX1H102KBN	C 1000PF K 50V	C552	ECKD3F821JBP	C 820PF J 3KV
C288	ECUX1H102KBN	C 1000PF K 50V	C553	ECQF6272JZ	PP 2700PF J 600V
C289	ECUX1H103KBG	C 0.01UF K 50V	C554	ECQF6182JZ	PP 1800PF J 600V
C290	ECUX1H471KBN	C 470PF K 50V	C558	ECKD2H102KB5	C 1000PF K 500V
C291	ECUX1H470JCG	C 47PF J 50V	C559	ECWF2244JB	PP 0.24UF J 200V
C292	ECUX1H470JCG	C 47PF J 50V	C560	ECWF2244JB	PP 0.24UF J 200V
C296	ECUX1H103KBG	C 0.01UF K 50V	C561	ECUX1H103KBG	C 0.01UF K 50V
C301	ECCF1H151J	C 150PF J 50V	C562	ECUX1H473ZFX	C 0.047UF Z 50V
C302	ECKF1H332KB	C 3300PF K 50V	C563	ECWF2274JB	PP 0.27UF J 200V
C303	ECQV1H104JL	P 0.1UF J 50V	C564	ECUX1H103KBG	C 0.01UF K 50V
C304	ECUX1H102JCX	C 1000PF J 50V	C565	ECUX1H473ZFX	C 0.047UF Z 50V
C305	ECEA1EGE100	E 10UF 25V	C566	ECWF2105JB	PP 1.0UF J 200V
C306	ECUX1H101JCG	C 100PF J 50V	C571	ECUX1H102JCX	C 1000PF J 50V
C311	ECEA1CGE101	E 100UF 16V	C576	ECUX1H104ZFX	C 0.1UF Z 50V
C312	ECUX1H103KBG	C 0.01UF K 50V	C581	ECEA1CGE471	E 470UF 16V
C321	ECUX1H103KBG	C 0.01UF K 50V	C582	ECEA1CGE471	E 470UF 16V
C322	ECEA1EGE100	E 10UF 25V	C583	ECUX1H102KBN	C 1000PF K 50V
C323	ECQV1H104JL	P 0.1UF J 50V	C584	ECQV1H684JL	P 0.68UF J 50V
C351	ECEA1CGE470	E 47UF 16V	C587	ECQE2224KF	P 0.22UF K 200V
C352	ECEA2AGE100	E 10UF 100V	C588	ECQE2274KF	P 0.27UF K 200V
C353	ECQV1474JZ	P 0.47UF J 100V	C589	ECKF1H222KB	C 2200PF K 50V
C354	ECUX1H331KBN	C 330PF K 50V	C591	ECUX1H222KBN	C 2200PF K 50V
C371	ECEA1EGE100	E 10UF 25V	C592	ECKD2H332KB5	C 3300PF K 500V
C372	ECKD2H471KB5	C 470PF K 500V	C593	ECQE1335KF	P 3.3UF K 100V
C401	ECEA1EGN101	E 100UF 25V	C651	ECEA2CGE2R2	E 2.2UF 160V
C402	ECEA1VGE101	E 100UF 35V	C654	ECKD2H103KB5	C 0.01UF K 500V
C403	ECKF1H681KB	C 680PF K 50V	C655	ECEA2EGE100	E 10UF 250V
C404	ECEA1EGE471	E 470UF 25V	C656	ECEA2AGE220	E 22UF 100V
C405	ECKF1H152KB	C 1500PF K 50V	C657	ECUX1C105ZFX	C 1.0UF Z 16V
C406	ECQV1H104JL	P 0.1UF J 50V	C671	ECKD2H221KB5	C 220PF K 500V
C407	ECQV1H224JL	P 0.22UF J 50V	C672	TAC1102Z221A	E 220UF 200V
C408	ECUX1H333KBX	C 0.033UF K 50V	C673	ECUX1H220JCN	C 22PF J 50V
C409	ECUX1H150JCN	C 15PF J 50V	C674	ECUX1H392JCW	C 3900PF J 50V
C421	ECUX1H330JCG	C 33PF J 50V	C680	ECUX1H222KBN	C 2200PF K 50V
C422	ECQV1H105JL	P 1.0UF J 50V	C683	ECUX1H102JCX	C 1000PF J 50V
C423	ECQV1H154JL	P 0.15UF J 50V	C685	ECUX1H103KBG	C 0.01UF K 50V
C424	ECUX1H681JCX	C 680PF J 50V	C696	ECQB2223KF	P 0.022UF K 200V
C426	ECEA1CGE101	E 100UF 16V	C697	TACCG102P200	C 1000PF 200V
C427	ECUX1H103KBG	C 0.01UF K 50V	C698	ECUX1H102JCX	C 1000PF J 50V
C430	ECEA1HGE010	E 1UF 50V	C699	ECUX1H104ZFX	C 0.1UF Z 50V
C431	ECEA1EGE100	E 10UF 25V	C707	ECEA1EGE100	E 10UF 25V
C432	ECUX1H104ZFX	C 0.1UF Z 50V	C719	ECEA1EGE100	E 10UF 25V
C433	ECUX1H103KBG	C 0.01UF K 50V	C725	ECEA1EGE100	E 10UF 25V
C501	ECQB1H103JF	P 0.01UF J 50V	C726	ECEA1EGE101	E 100UF 25V
C502	ECQV1H104JL	P 0.1UF J 50V	C727	ECUX1E563KBX	C 0.056UF K 25V
C504	ECUX1H820JCG	C 82PF J 50V	C728	ECUX1H103KBG	C 0.01UF K 50V
C505	ECEA1CGE101	E 100UF 16V	C770	ECUX1C225ZFW	C 2.2UF Z 16V
C506	ECQP1H681GZ	PP 680PF G 50V	△ C801	ECQU2A334MVZ	PP 0.33UF M 250V
C507	ECUX1H472KBG	C 4700PF K 50V	△ C802	ECQU2A334MVZ	PP 0.33UF M 250V

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
△ C803	ECKDRS472ME	C 4700PF M	C1104	ECUX1C105ZFX	C 1.0UF Z 16V
△ C804	ECKDRS472ME	C 4700PF M	C1105	ECUX1H050CCN	C 5PF C 50V
△ C805	ECKDRS472ME	C 4700PF M	C1151	ECQV1334JM	P 0.33UF J 100V
△ C821	TAC1094Z331A	E 330UF 400V	C1152	ECKD2H102KB5	C 1000PF K 500V
C822	ECQV1H104JL	P 0.1UF J 50V	C1153	ECQB1103KF	P 0.01UF K 100V
C823	ECKF1H222KB	C 2200PF K 50V	C1154	ECUX1H104ZFX	C 0.1UF Z 50V
C824	ECQB1H152JF	P 1500PF J 50V	C1155	ECQB1683KF	P 0.068UF K 100V
C825	ECEA1EGE100	E 10UF 25V	C1156	ECUX1H103KBG	C 0.01UF K 50V
C826	ECQE6473KF	P 0.047UF K 600V	C1201	ECEA1EGE100	E 10UF 25V
C827	ECKD3A681KBP	C 680PF K 1KV	C1202	ECUX1H104ZFX	C 0.1UF Z 50V
C828	ECQB1H103JF	P 0.01UF J 50V	C1203	ECUX1E224ZFX	C 0.22UF Z 25V
C829	ECQV1H104JL	P 0.1UF J 50V	C1204	ECUX1C105ZFX	C 1.0UF Z 16V
C830	ECEA1EGE101	E 100UF 25V	C1205	ECUX1H050CCN	C 5PF C 50V
△ C831	ECKDRS222ME	C 2200PF M	C1251	ECQV1334JM	P 0.33UF J 100V
△ C832	ECKDRS222ME	C 2200PF M	C1252	ECKD2H102KB5	C 1000PF K 500V
C833	ECCF1H101J	C 100PF J 50V	C1253	ECQB1103KF	P 0.01UF K 100V
C834	ECKD3A681KBP	C 680PF K 1KV	C1254	ECUX1H104ZFX	C 0.1UF Z 50V
C844	ECEA1CGE470	E 47UF 16V	C1255	ECQB1683KF	P 0.068UF K 100V
C846	ECCF1H221J	C 220PF J 50V	C1256	ECUX1H103KBG	C 0.01UF K 50V
C851	ECQB1H473JF	P 0.047UF J 50V	C1301	ECEA1CGE101	E 100UF 16V
C852	ECUX1H472KBG	C 4700PF K 50V	C1302	ECUX1H103KBG	C 0.01UF K 50V
C860	ECUX1C474ZFX	C 0.47UF Z 16V	C1303	ECUX1H104ZFX	C 0.1UF Z 50V
C861	ECEA2AGE221	E 220UF 100V	C1304	ECUX1E224ZFX	C 0.22UF Z 25V
C862	EEUFA1J821	E 820UF 35V	C1305	ECUX1H103KBG	C 0.01UF K 50V
C863	ECEA1VGE471	E 470UF 35V	C1306	ECUX1H103KBG	C 0.01UF K 50V
C864	ECEA1EGE222	E 2200UF 25V	C1307	ECEA1EGE100	E 10UF 25V
C865	ECA1CHG332	E 3300UF 16V	C1309	ECUX1E224ZFX	C 0.22UF Z 25V
C866	ECA1HHG102	E 1000UF 50V	C1310	ECEA1CGE221	E 220UF 16V
C867	ECQV1H104JL	P 0.1UF J 50V	C1312	ECEA2AGE101	E 100UF 100V
C868	ECEA1EGE100	E 10UF 25V	C1313	ECQV1104JM	P 0.1UF J 100V
C870	ECEA1EGE102	E 1000UF 25V	C1314	ECQV1H104JL	P 0.1UF J 50V
C871	ECEA1CGE101	E 100UF 16V	C1315	TACCU103P200	C 0.01UF 200V
C872	ECEA1VGE331	E 330UF 35V	C1320	ECQV1H104JL	P 0.1UF J 50V
C874	ECEA1CGE221	E 220UF 16V	C1321	ECEA2CGE2R2	E 2.2UF 160V
C875	ECEA1EGE100	E 10UF 25V	C1324	ECKD2H471KB5	C 470PF K 500V
C876	ECEA1EGE100	E 10UF 25V	C1327	TACCU103P200	C 0.01UF 200V
C878	ECQB1H103JF	P 0.01UF J 50V	C1328	TACCU103P200	C 0.01UF 200V
C879	ECQB1H682JF	P 6800PF J 50V	C1329	TACCU103P200	C 0.01UF 200V
C880	ECQB1H332JF	P 3300PF J 50V	C1331	ECUX1E224ZFX	C 0.22UF Z 25V
C890	ECEA1VGE331	E 330UF 35V	C1332	ECUX1E224ZFX	C 0.22UF Z 25V
C901	TACCU102P500	C 1000PF 500V	C1333	ECUX1H103KBG	C 0.01UF K 50V
C902	ECEA1HGE4R7	E 4.7UF 50V	C1334	TCUX2H101JCM	C 100PF J 500V
C946	ECEA2CGE330	E 33UF 160V	C1336	ECKD2H222KB5	C 2200PF K 500V
C951	ECQV1H334JL	P 0.33UF J 50V	C1341	ECUX1H221JCG	C 220PF J 50V
C952	ECEA1HGE4R7	E 4.7UF 50V	C1361	ECKD2H472KB5	C 4700PF K 500V
C953	ECQV1H334JL	P 0.33UF J 50V	C1362	ECCD2H100D	C 10PF D 500V
C954	ECEA1HGE4R7	E 4.7UF 50V	C1370	ECKD2H102KB5	C 1000PF K 500V
C955	ECUX1H103KBG	C 0.01UF K 50V	C1371	ECKD3D272KBP	C 2700PF K 2KV
C1001	ECEA1EGE100	E 10UF 25V	C1380	ECEA1CGE470	E 47UF 16V
C1002	ECUX1H104ZFX	C 0.1UF Z 50V	C1381	ECUX1H103KBG	C 0.01UF K 50V
C1003	ECUX1E224ZFX	C 0.22UF Z 25V	C1382	TACCG102P200	C 1000PF 200V
C1004	ECUX1C105ZFX	C 1.0UF Z 16V	C1401	ECEA1HGE010	E 1UF 50V
C1005	ECUX1H150JCN	C 15PF J 50V	C1402	ECUX1H104ZFX	C 0.1UF Z 50V
C1051	ECQV1334JM	P 0.33UF J 100V	C1403	ECEA1EGE100	E 10UF 25V
C1052	ECKD2H102KB5	C 1000PF K 500V	C1406	ECUX1H332KBN	C 3300PF K 50V
C1053	ECQB1103KF	P 0.01UF K 100V	C1410	ECUX1H220JCN	C 22PF J 50V
C1054	ECUX1H104ZFX	C 0.1UF Z 50V	C2001	ECEA1HGE2R2	E 2.2UF 50V
C1055	ECQB1683KF	P 0.068UF K 100V	C2002	ECEA1HGE2R2	E 2.2UF 50V
C1056	ECUX1H103KBG	C 0.01UF K 50V	C2003	ECUX1H223KBX	C 0.022UF K 50V
C1101	ECEA1EGE100	E 10UF 25V	C2004	ECEA1HGER22	E 0.22UF 50V
C1102	ECUX1H104ZFX	C 0.1UF Z 50V	C2007	ECUX1H223KBX	C 0.022UF K 50V
C1103	ECUX1E224ZFX	C 0.22UF Z 25V	C2008	ECEA1HGER22	E 0.22UF 50V

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
C2009	ECEA1EGE100	E 10UF 25V	J719	ERJ8GCRYOR00	M 0 OHM 1/8W
C2010	ECEA1EGE220	E 22UF 25V	J720	ERJ8GCRYOR00	M 0 OHM 1/8W
C2011	ECEA1HGE010	E 1UF 50V	J721	ERJ8GCRYOR00	M 0 OHM 1/8W
C2012	ECEA1CGE221	E 220UF 16V	J722	ERJ8GCRYOR00	M 0 OHM 1/8W
C2013	ECEA1CGE470	E 47UF 16V	J723	ERJ8GCRYOR00	M 0 OHM 1/8W
C2014	ECEA1HGN010	E 1UF 50V	J724	ERJ8GCRYOR00	M 0 OHM 1/8W
C2015	ECUX1H103KBG	C 0.01UF K 50V	J725	ERJ8GCRYOR00	M 0 OHM 1/8W
C2016	ECUX1C474ZFX	C 0.47UF Z 16V	J728	ERJ8GCRYOR00	M 0 OHM 1/8W
C2017	ECUX1H511JCX	C 510PF J 50V	J729	ERJ8GCRYOR00	M 0 OHM 1/8W
C2018	ECUX1H511JCX	C 510PF J 50V	J730	ERJ8GCRYOR00	M 0 OHM 1/8W
C2201	ECUX1H562KBG	C 5600PF K 50V	J731	ERJ8GCRYOR00	M 0 OHM 1/8W
C2202	ECUX1H562KBG	C 5600PF K 50V	J732	ERJ8GCRYOR00	M 0 OHM 1/8W
C2203	ECEA1EGE220	E 22UF 25V	J733	ERJ8GCRYOR00	M 0 OHM 1/8W
C2204	ECEA1HGE010	E 1UF 50V	J734	ERJ8GCRYOR00	M 0 OHM 1/8W
C2205	ECEA1CGE221	E 220UF 16V	J735	ERJ8GCRYOR00	M 0 OHM 1/8W
C2206	ECEA1HGE010	E 1UF 50V	J736	ERJ8GCRYOR00	M 0 OHM 1/8W
C2207	ECEA1EGE220	E 22UF 25V	J737	ERJ8GCRYOR00	M 0 OHM 1/8W
C2208	ECA1VHG471	E 470UF 35V	J738	ERJ8GCRYOR00	M 0 OHM 1/8W
C2209	ECUX1H104ZFX	C 0.1UF Z 50V	J739	ERJ8GCRYOR00	M 0 OHM 1/8W
C2210	ECUX1H104ZFX	C 0.1UF Z 50V	J740	ERJ8GCRYOR00	M 0 OHM 1/8W
C2211	ECA1VHG471	E 470UF 35V	J741	ERJ8GCRYOR00	M 0 OHM 1/8W
C2212	TAC13035222A	E 2200UF 35V	J742	ERJ8GCRYOR00	M 0 OHM 1/8W
RESISTORS			J743	ERJ8GCRYOR00	M 0 OHM 1/8W
J11	ERJ6GEYOR00	M 0 OHM 1/10W	J744	ERJ8GCRYOR00	M 0 OHM 1/8W
J601	ERJ6GEYOR00	M 0 OHM 1/10W	J745	ERJ8GCRYOR00	M 0 OHM 1/8W
J602	ERJ6GEYOR00	M 0 OHM 1/10W	J746	ERJ8GCRYOR00	M 0 OHM 1/8W
J603	ERJ6GEYOR00	M 0 OHM 1/10W	J747	ERJ8GCRYOR00	M 0 OHM 1/8W
J605	ERJ6GEYOR00	M 0 OHM 1/10W	J748	ERJ8GCRYOR00	M 0 OHM 1/8W
J607	ERJ6GEYOR00	M 0 OHM 1/10W	J750	ERJ8GCRYOR00	M 0 OHM 1/8W
J609	ERJ6GEYOR00	M 0 OHM 1/10W	J751	ERJ8GCRYOR00	M 0 OHM 1/8W
J610	ERJ6GEYOR00	M 0 OHM 1/10W	J752	ERJ8GCRYOR00	M 0 OHM 1/8W
J611	ERJ6GEYOR00	M 0 OHM 1/10W	J753	ERJ8GCRYOR00	M 0 OHM 1/8W
J612	ERJ6GEYOR00	M 0 OHM 1/10W	J754	ERJ8GCRYOR00	M 0 OHM 1/8W
J613	ERJ6GEYOR00	M 0 OHM 1/10W	J755	ERJ8GCRYOR00	M 0 OHM 1/8W
J614	ERJ6GEYOR00	M 0 OHM 1/10W	J756	ERJ8GCRYOR00	M 0 OHM 1/8W
J615	ERJ6GEYOR00	M 0 OHM 1/10W	J757	ERJ8GCRYOR00	M 0 OHM 1/8W
J616	ERJ8GCRYOR00	M 0 OHM 1/8W	J758	ERJ8GCRYOR00	M 0 OHM 1/8W
J617	ERJ6GEYJ183	M 18K OHM J 1/10W	J759	ERJ8GCRYOR00	M 0 OHM 1/8W
J618	ERJ6GEYOR00	M 0 OHM 1/10W	J761	ERJ8GCRYOR00	M 0 OHM 1/8W
J619	ERJ6GEYOR00	M 0 OHM 1/10W	J762	ERJ8GCRYOR00	M 0 OHM 1/8W
J620	ERJ6GEYOR00	M 0 OHM 1/10W	J763	ERJ8GCRYOR00	M 0 OHM 1/8W
J621	ERJ6GEYOR00	M 0 OHM 1/10W	J764	ERJ8GCRYOR00	M 0 OHM 1/8W
J622	ERJ6GEYOR00	M 0 OHM 1/10W	J767	ERJ8GCRYOR00	M 0 OHM 1/8W
J701	ERJ8GCRYOR00	M 0 OHM 1/8W	J768	ERJ8GCRYOR00	M 0 OHM 1/8W
J702	ERJ8GCRYOR00	M 0 OHM 1/8W	J770	ERJ8GCRYOR00	M 0 OHM 1/8W
J703	ERJ8GCRYOR00	M 0 OHM 1/8W	J771	ERJ8GCRYOR00	M 0 OHM 1/8W
J704	ERJ8GCRYOR00	M 0 OHM 1/8W	J772	ERJ8GCRYOR00	M 0 OHM 1/8W
J705	ERJ8GCRYOR00	M 0 OHM 1/8W	J775	ERJ8GCRYOR00	M 0 OHM 1/8W
J706	ERJ8GCRYOR00	M 0 OHM 1/8W	J776	ERJ8GCRYOR00	M 0 OHM 1/8W
J707	ERJ8GCRYOR00	M 0 OHM 1/8W	J777	ERJ8GCRYOR00	M 0 OHM 1/8W
J708	ERJ8GCRYOR00	M 0 OHM 1/8W	J778	ERJ8GCRYOR00	M 0 OHM 1/8W
J709	ERJ8GCRYOR00	M 0 OHM 1/8W	J779	ERJ8GCRYOR00	M 0 OHM 1/8W
J710	ERJ8GCRYOR00	M 0 OHM 1/8W	J780	ERJ8GCRYOR00	M 0 OHM 1/8W
J711	ERJ8GCRYOR00	M 0 OHM 1/8W	J781	ERJ8GCRYOR00	M 0 OHM 1/8W
J712	ERJ8GCRYOR00	M 0 OHM 1/8W	J782	ERJ8GCRYOR00	M 0 OHM 1/8W
J713	ERJ8GCRYOR00	M 0 OHM 1/8W	J783	ERJ8GCRYOR00	M 0 OHM 1/8W
J714	ERJ8GCRYOR00	M 0 OHM 1/8W	J784	ERJ8GCRYOR00	M 0 OHM 1/8W
J715	ERJ8GCRYOR00	M 0 OHM 1/8W	J785	ERJ8GCRYOR00	M 0 OHM 1/8W
J716	ERJ8GCRYOR00	M 0 OHM 1/8W	J901	ERJ6GEYOR00	M 0 OHM 1/10W
J717	ERJ8GCRYOR00	M 0 OHM 1/8W	J1105	ERJ8GCRYOR00	M 0 OHM 1/8W
J718	ERJ8GCRYOR00	M 0 OHM 1/8W	J2050	ERJ8GCRYOR00	M 0 OHM 1/8W
			J2051	ERJ8GCRYOR00	M 0 OHM 1/8W

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
J2052	ERJ8GCRY0R00	M 0 OHM 1/8W	R179	ERJ8GCRYJ101	M 100 OHM J 1/8W
J2053	ERJ8GCRY0R00	M 0 OHM 1/8W	R184	ERJ6GEYJ471	M 470 OHM J 1/10W
J2054	ERJ8GCRY0R00	M 0 OHM 1/8W	R185	ERJ6GEY0R00	M 0 OHM 1/10W
J2055	ERJ8GCRY0R00	M 0 OHM 1/8W	R186	ERJ6GEY0R00	M 0 OHM 1/10W
J2056	ERJ8GCRY0R00	M 0 OHM 1/8W	R201	ERJ8GCRYJ122	M 1.2K OHM J 1/8W
L1001	ERJ8GCRY0R00	M 0 OHM 1/8W	R202	ERJ8GCRYJ122	M 1.2K OHM J 1/8W
L1101	ERJ8GCRY0R00	M 0 OHM 1/8W	R203	ERJ6GEYJ392	M 3.9K OHM J 1/10W
L1201	ERJ8GCRY0R00	M 0 OHM 1/8W	R204	ERJ6GEYJ392	M 3.9K OHM J 1/10W
R11	ERJ6ENF1002	M 10K OHM F 1/10W	R205	ERJ6GEYJ392	M 3.9K OHM J 1/10W
R12	ERJ6ENF4703	M 470K OHM F 1/10W	R206	ERJ6GEYJ103	M 10K OHM J 1/10W
R13	ERJ6ENF1802	M 18K OHM F 1/10W	R220	ERDS2TJ561	C 560 OHM J 1/4W
R14	ERJ6ENF3301	M 3.3K OHM F 1/10W	R221	ERJ6GEYJ103	M 10K OHM J 1/10W
R15	TAR101D0183H	M 18K OHM J 1W	R222	ERJ6GEYJ224	M 220K OHM J 1/10W
R16	ERJ6ENF6800	M 680 OHM F 1/10W	R224	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R17	ERJ6ENF5600	M 560 OHM F 1/10W	R226	ERJ6GEYJ821	M 820 OHM J 1/10W
R18	TAR101D0273H	M 27K OHM J 1W	R227	ERDS2TJ102	C 1K OHM J 1/4W
R19	ERJ6ENF4702	M 47K OHM F 1/10W	R228	ERJ6GEYJ471	M 470 OHM J 1/10W
R20	ERJ6ENF4702	M 47K OHM F 1/10W	R261	ERJ6ENF2702	M 27K OHM F 1/10W
R22	ERJ6GEY0R00	M 0 OHM 1/10W	R262	ERJ6ENF2103	M 210K OHM F 1/10W
R23	ERJ6GEYJ105	M 1M OHM J 1/10W	R271	ERJ6GEYJ102	M 1K OHM J 1/10W
R24	ERJ6ENF4703	M 470K OHM F 1/10W	R272	ERJ6GEYJ122	M 1.2K OHM J 1/10W
R25	ERJ6ENF1000	M 100 OHM F 1/10W	R273	ERJ6GEYJ103	M 10K OHM J 1/10W
R26	ERJ6GEYJ333	M 33K OHM J 1/10W	R274	ERJ6GEYJ103	M 10K OHM J 1/10W
R27	ERJ6GEYJ101	M 100 OHM J 1/10W	R275	ERJ6GEYJ102	M 1K OHM J 1/10W
R28	ERJ6GEYJ101	M 100 OHM J 1/10W	R276	ERJ6GEYJ102	M 1K OHM J 1/10W
R106	ERDS2TJ331	C 330 OHM J 1/4W	R278	ERJ6GEYJ562	M 5.6K OHM J 1/10W
R107	ERDS2TJ331	C 330 OHM J 1/4W	R279	ERJ6GEYJ103	M 10K OHM J 1/10W
R108	ERJ6GEYJ104	M 100K OHM J 1/10W	R280	ERJ6GEYJ151	M 150 OHM J 1/10W
R109	ERJ6ENF1782	M 17.8K OHM F 1/10W	R281	ERJ6GEYJ106	M 10M OHM J 1/10W
R110	ERJ6ENF5621	M 5.62K OHM F 1/10W	R282	ERJ6GEYJ152	M 1.5K OHM J 1/10W
R111	ERJ6ENF1182	M 11.8K OHM F 1/10W	R283	ERJ6GEYJ561	M 560 OHM J 1/10W
R112	ERJ6ENF3242	M 32.4K OHM F 1/10W	R284	ERJ6GEYJ562	M 5.6K OHM J 1/10W
R113	ERJ6ENF1782	M 17.8K OHM F 1/10W	R285	ERJ6GEYJ222	M 2.2K OHM J 1/10W
R114	ERJ6ENF1782	M 17.8K OHM F 1/10W	R286	ERJ6GEYJ562	M 5.6K OHM J 1/10W
R115	ERDS2TJ331	C 330 OHM J 1/4W	R287	ERJ6GEYJ392	M 3.9K OHM J 1/10W
R116	ERJ6ENF3242	M 32.4K OHM F 1/10W	R288	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R119	ERJ6GEYJ102	M 1K OHM J 1/10W	R289	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R121	ERJ6GEYJ103	M 10K OHM J 1/10W	R290	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R122	ERJ8GCRYJ331	M 330 OHM J 1/8W	R291	ERJ6GEYJ102	M 1K OHM J 1/10W
R123	ERJ6GEYJ473	M 47K OHM J 1/10W	R292	ERJ6GEYJ102	M 1K OHM J 1/10W
R124	ERJ8GCRYJ331	M 330 OHM J 1/8W	R293	ERJ6GEYJ182	M 1.8K OHM J 1/10W
R126	ERJ8GCRYJ331	M 330 OHM J 1/8W	R294	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R151	ERJ6GEYJ103	M 10K OHM J 1/10W	R295	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R154	ERJ6GEY0R00	M 0 OHM 1/10W	R296	ERJ6GEYJ104	M 100K OHM J 1/10W
R155	ERJ6GEY0R00	M 0 OHM 1/10W	R301	ERDS2TJ332	C 3.3K OHM J 1/4W
R156	ERJ6GEY0R00	M 0 OHM 1/10W	R302	ERDS2TJ102	C 1K OHM J 1/4W
R157	ERJ6GEYJ103	M 10K OHM J 1/10W	R303	ERDS2TJ222	C 2.2K OHM J 1/4W
R158	ERJ6GEYJ392	M 3.9K OHM J 1/10W	R304	ERDS2TJ222	C 2.2K OHM J 1/4W
R159	ERJ6GEYJ392	M 3.9K OHM J 1/10W	R305	ERDS2TJ180	C 18 OHM J 1/4W
R160	ERJ6GEYJ332	M 3.3K OHM J 1/10W	R306	ERDS2TJ102	C 1K OHM J 1/4W
R161	ERJ6GEYJ333	M 33K OHM J 1/10W	R307	ERJ6ENF5622	M 56.2K OHM F 1/10W
R165	ERJ6GEYJ103	M 10K OHM J 1/10W	R308	ERJ6ENF3322	M 33.2K OHM F 1/10W
R166	ERJ6GEYJ512	M 5.1K OHM J 1/10W	R309	ERJ6GEYJ473	M 47K OHM J 1/10W
R170	ERJ6GEYJ101	M 100 OHM J 1/10W	R310	ERJ6GEYJ104	M 100K OHM J 1/10W
R171	ERJ6GEYJ101	M 100 OHM J 1/10W	R311	ERJ6GEYJ122	M 1.2K OHM J 1/10W
R172	ERJ6GEYJ223	M 22K OHM J 1/10W	R312	ERJ6GEYJ103	M 10K OHM J 1/10W
R173	ERJ6GEYJ223	M 22K OHM J 1/10W	R313	ERJ6GEYJ101	M 100 OHM J 1/10W
R174	ERJ6GEYJ103	M 10K OHM J 1/10W	R321	ERJ6ENF4752	M 47.5K OHM F 1/10W
R175	ERJ8GCRYJ101	M 100 OHM J 1/8W	R322	ERJ6ENF5902	M 59K OHM F 1/10W
R176	ERJ6GEYJ103	M 10K OHM J 1/10W	R324	ERJ6ENF8452	M 84.5K OHM F 1/10W
R177	ERJ6GEYJ471	M 470 OHM J 1/10W	R325	ERJ6GEYJ104	M 100K OHM J 1/10W
R178	ERJ8GCRYJ101	M 100 OHM J 1/8W	R326	ERDS2TJ333	C 33K OHM J 1/4W

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
R327	ERDS2TJ564	C 560K OHM J 1/4W	R526	ERDS1FJ470	C 47 OHM J 1/2W
R328	ERJ6GEYJ682	M 6.8K OHM J 1/10W	R527	ERDS2TJ332	C 3.3K OHM J 1/4W
R329	ERJ6GEYJ222	M 2.2K OHM J 1/10W	R528	ERG1SJ561	M 560 OHM J 1W
R330	ERDS2TJ681	C 680 OHM J 1/4W	R530	ERJ6GEYJ562	M 5.6K OHM J 1/10W
R351	ERD25FJ102K	C 1K OHM J 1/4W	R539	ERJ6GEYJ102	M 1K OHM J 1/10W
R352	ERJ6ENF2671	M 2.67K OHM F 1/10W	R543	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R354	ERJ6GEYJ182	M 1.8K OHM J 1/10W	R544	ERJ6GEYJ332	M 3.3K OHM J 1/10W
R355	ERJ6ENF6982	M 69.8K OHM F 1/10W	R545	ERJ6GEYJ822	M 8.2K OHM J 1/10W
R356	ERDS2TJ223	C 22K OHM J 1/4W	R546	ERJ6GEYJ153	M 15K OHM J 1/10W
R357	ERDS2TJ470	C 47 OHM J 1/4W	R547	ERJ6GEYJ103	M 10K OHM J 1/10W
R358	ERDS2TJ100	C 10 OHM J 1/4W	R548	ERJ6GEYJ102	M 1K OHM J 1/10W
R359	ERDS2TJ100	C 10 OHM J 1/4W	R554	ERX2SJ1R0	M 1 OHM J 2W
R360	ERQ14AJ101	F 100 OHM J 1/4W	R555	ERX2SJ1R0	M 1 OHM J 2W
R371	ERD25FJ332K	C 3.3K OHM J 1/4W	R557	ERX3FJX6R8D	M 6.8 OHM J 3W
R372	ERDS1FJ394	C 390K OHM J 1/2W	R558	ERDS1FJ221	C 220 OHM J 1/2W
R373	ERDS2TJ395	C 3.9M OHM J 1/4W	R561	ERDS1FJ472	C 4.7K OHM J 1/2W
R374	ERDS2TJ473	C 47K OHM J 1/4W	R562	ERJ8GCVJ472	M 4.7K OHM J 1/8W
R375	EROS2CKF2671	M 2.67K OHM F 1/4W	R563	ERJ6GEYJ100	M 10 OHM J 1/10W
R377	ERJ6GEYJ102	M 1K OHM J 1/10W	R564	ERDS1FJ472	C 4.7K OHM J 1/2W
R378	ERJ6ENF1001	M 1K OHM F 1/10W	R565	ERJ8GCVJ472	M 4.7K OHM J 1/8W
R379	ERJ6ENF1101	M 1.1K OHM F 1/10W	R566	ERJ6GEYJ100	M 10 OHM J 1/10W
R401	ERO25CKF1782	M 17.8K OHM F 1/4W	R571	ERJ6GEYJ474	M 470K OHM J 1/10W
R402	ERJ6GEYJ682	M 6.8K OHM J 1/10W	R572	ERJ6GEYJ274	M 270K OHM J 1/10W
R403	ERJ6GEYJ123	M 12K OHM J 1/10W	R573	ERJ6GEYJ104	M 100K OHM J 1/10W
R404	ERO25CKF3162	M 31.6K OHM F 1/4W	R576	ERJ6GEYJ153	M 15K OHM J 1/10W
R405	ERDS2TJ1R0	C 1 OHM J 1/4W	R577	ERJ6GEYJ123	M 12K OHM J 1/10W
R406	ERX1SJ1R0	M 1 OHM J 1W	R579	ERG3FJ182	M 1.8K OHM J 3W
R407	ERG1SJ301	M 300 OHM J 1W	R581	ERDS2TJ101	C 100 OHM J 1/4W
R408	ERJ6GEYJ681	M 680 OHM J 1/10W	R582	ERDS2TJ101	C 100 OHM J 1/4W
R411	ERJ6GEYJ122	M 1.2K OHM J 1/10W	R583	ERJ8GCVJ332	M 3.3K OHM J 1/8W
R412	ERJ6GEYJ103	M 10K OHM J 1/10W	R584	TAR18BKOR11Z	F 0.11 OHM K 1/4W
R421	ERJ6GEYJ183	M 18K OHM J 1/10W	R585	ERG3FJ220	M 22 OHM J 3W
R422	ERJ6GEYJ123	M 12K OHM J 1/10W	R587	ERDS1FJ105	C 1M OHM J 1/2W
R440	ERJ6GEYJ153	M 15K OHM J 1/10W	R588	ERDS1FJ274	C 270K OHM J 1/2W
R441	ERJ6GEYJ333	M 33K OHM J 1/10W	R589	ERDS1FJ564	C 560K OHM J 1/2W
R442	ERJ6GEYJ562	M 5.6K OHM J 1/10W	R590	ERDS1FJ184	C 180K OHM J 1/2W
R443	ERJ6GEYJ333	M 33K OHM J 1/10W	R591	ERJ6ENF2002	M 20K OHM F 1/10W
R444	ERJ6GEYJ223	M 22K OHM J 1/10W	R592	ERG3FJ273	M 27K OHM J 3W
R445	ERJ6GEYJ333	M 33K OHM J 1/10W	R593	ERJ6ENF2371	M 2.37K OHM F 1/10W
R446	ERJ6GEYJ332	M 3.3K OHM J 1/10W	R594	EROS2CKF1402	M 14K OHM F 1/4W
R447	ERJ6GEYJ333	M 33K OHM J 1/10W	R595	EROS2CKF4121	M 4.12K OHM F 1/4W
R448	ERJ6GEYJ562	M 5.6K OHM J 1/10W	R596	EROS2CKF6981	M 6.98K OHM F 1/4W
R449	ERJ6GEYJ333	M 33K OHM J 1/10W	R597	ERDS2TJ121	C 120 OHM J 1/4W
R502	ERJ6GEYJ333	M 33K OHM J 1/10W	R598	ERDS1FJ1R8	C 1.8 OHM J 1/2W
R503	ERJ8GCVJ682	M 6.8K OHM J 1/8W	R651	ERO25CKF8251	M 8.25K OHM F 1/4W
R504	ERJ6GEYOR00	M 0 OHM 1/10W	R652	ERDS2TJ333	C 33K OHM J 1/4W
R505	ERJ6GEYJ183	M 18K OHM J 1/10W	R654	ERQ14AJ100	F 10 OHM J 1/4W
R506	ERJ6GEYJ154	M 150K OHM J 1/10W	R655	ERQ14AJ100	F 10 OHM J 1/4W
R507	ERJ6ENF1242	M 12.4K OHM F 1/10W	R656	ERJ6ENF3482	M 34.8K OHM F 1/10W
R508	ERJ6ENF2322	M 23.2K OHM F 1/10W	R658	ERJ6ENF1002	M 10K OHM F 1/10W
R509	ERJ6ENF7501	M 7.5K OHM F 1/10W	R659	ERQ14AJ100	F 10 OHM J 1/4W
R510	ERJ6GEYJ152	M 1.5K OHM J 1/10W	R669	ERJ6GEYJ682	M 6.8K OHM J 1/10W
R511	ERJ6GEYJ334	M 330K OHM J 1/10W	R670	ERX3FJX1R0D	M 1 OHM J 3W
R512	ERJ6GEYJ100	M 10 OHM J 1/10W	R671	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R514	ERD25FJ392K	C 3.9K OHM J 1/4W	R672	ERJ6GEYJ562	M 5.6K OHM J 1/10W
R515	ERDS2TJ392	C 3.9K OHM J 1/4W	R673	ERJ6GEYJ392	M 3.9K OHM J 1/10W
R517	ERJ6GEYJ821	M 820 OHM J 1/10W	R674	ERDS2TJ102	C 1K OHM J 1/4W
R521	ERJ6GEYJ473	M 47K OHM J 1/10W	R675	ERQ14AJ100	F 10 OHM J 1/4W
R522	ERJ6GEYJ124	M 120K OHM J 1/10W	R676	ERDS2TJ104	C 100K OHM J 1/4W
R523	ERJ6GEYJ474	M 470K OHM J 1/10W	R677	ERX3FJX1R0D	M 1 OHM J 3W
R524	ERJ6GEYJ101	M 100 OHM J 1/10W	R678	ERG1SJ332	M 3.3K OHM J 1W
R525	ERG2SJ121	M 120 OHM J 2W	R680	ERDS2TJ102	C 1K OHM J 1/4W

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
R681	ERDS2TJ104	C 100K OHM J 1/4W	R848	ERG1SJ223	M 22K OHM J 1W
R682	ERDS2TJ823	C 82K OHM J 1/4W	R849	ERJ6GEYJ103	M 10K OHM J 1/10W
R683	ERDS2TJ562	C 5.6K OHM J 1/4W	R850	ERDS2TJ103	C 10K OHM J 1/4W
R684	ERJ6GEYJ124	M 120K OHM J 1/10W	R851	ERJ6GEYOR00	M 0 OHM J 1/10W
R693	ERJ6GEYJ154	M 150K OHM J 1/10W	R852	ERJ6GEYJ102	M 1K OHM J 1/10W
R694	ERJ6GEYJ333	M 33K OHM J 1/10W	R853	ERD25FJ122K	C 1.2K OHM J 1/4W
R695	ERJ6GEYK825	M 8.2M OHM K 1/10W	R854	ERDS2TJ103	C 10K OHM J 1/4W
R696	ERDS1FJ274	C 270K OHM J 1/2W	R856	ERJ6GEYJ102	M 1K OHM J 1/10W
R697	ERJ12NFB3903	M 390K OHM F 1/2W	R857	ERQ14AJR68	F 0.68 OHM J 1/4W
R698	ERJ8ENF2202	M 22K OHM F 1/8W	R858	ERJ6ENF2002	M 20K OHM F 1/10W
R699	EROS2CKF3403	M 340K OHM F 1/4W	R859	ERJ6ENF2321	M 2.32K OHM F 1/10W
R701	ERJ6GEYJ333	M 33K OHM J 1/10W	R860	ERJ6ENF2431	M 2.43K OHM F 1/10W
R702	ERJ6GEYJ333	M 33K OHM J 1/10W	R861	ERQ12AJR12HK	F 0.12 OHM J 1/2W
R707	ERJ6GEYJ103	M 10K OHM J 1/10W	R862	ERJ6ENF4871	M 4.87K OHM F 1/10W
R715	ERJ6GEYJ101	M 100 OHM J 1/10W	R863	ERQ12AJR33HK	F 0.33 OHM J 1/2W
R716	ERDS2TJ101	C 100 OHM J 1/4W	R864	ERQ12AJR12HK	F 0.12 OHM J 1/2W
R717	ERJ6GEYJ153	M 15K OHM J 1/10W	R865	ERQ12AJR12HK	F 0.12 OHM J 1/2W
R718	ERJ6GEYJ103	M 10K OHM J 1/10W	R866	ERQ12AJR12HK	F 0.12 OHM J 1/2W
R719	ERJ6GEYJ103	M 10K OHM J 1/10W	R867	ERDS2TJ102	C 1K OHM J 1/4W
R720	ERJ6GEYJ683	M 68K OHM J 1/10W	R868	ERD25FJ271K	C 270 OHM J 1/4W
R721	ERJ6GEYJ683	M 68K OHM J 1/10W	R869	ERD25FJ271K	C 270 OHM J 1/4W
R722	ERJ6GEYJ333	M 33K OHM J 1/10W	R870	ERQ12AJR33HK	F 0.33 OHM J 1/2W
R723	ERJ6GEYJ104	M 100K OHM J 1/10W	R871	ERDS2TJ102	C 1K OHM J 1/4W
R724	ERJ6GEYJ104	M 100K OHM J 1/10W	R872	ERD25FJ271K	C 270 OHM J 1/4W
R725	ERJ8GCYJ122	M 1.2K OHM J 1/8W	R873	ERJ6ENF1102	M 11K OHM F 1/10W
R726	ERJ6GEYJ102	M 1K OHM J 1/10W	R874	ERJ6ENF1102	M 11K OHM F 1/10W
R727	TAR103J0102H	M 1K OHM J 1/10W	R875	ERDS1FJ151	C 150 OHM J 1/2W
R728	ERJ6GEYJ103	M 10K OHM J 1/10W	R876	ERJ6ENF3321	M 3.32K OHM F 1/10W
R729	ERJ6GEYJ104	M 100K OHM J 1/10W	R877	ERDS2TJ102	C 1K OHM J 1/4W
R751	ERJ6GEYJ333	M 33K OHM J 1/10W	R878	ERJ6ENF6191	M 6.19K OHM F 1/10W
R752	ERJ6GEYJ223	M 22K OHM J 1/10W	R879	ERJ6ENF1621	M 1.62K OHM F 1/10W
R770	ERJ6GEYJ272	M 2.7K OHM J 1/10W	R880	ERJ6ENF1331	M 1.33K OHM F 1/10W
R771	ERJ6GEYJ332	M 3.3K OHM J 1/10W	R881	ERJ6ENF1051	M 1.05K OHM F 1/10W
R772	ERJ6GEYJ274	M 270K OHM J 1/10W	R882	ERG1SJ103	M 10K OHM J 1W
R801	ERC12AGK394	S 390K OHM K 1/2W	R883	ERO25CKF2742	M 27.4K OHM F 1/4W
△ R802	ERTD6ZFL120P	THERMISTOR	R884	ERJ6ENF1741	M 1.74K OHM F 1/10W
R821	ERDS1FJ224	C 220K OHM J 1/2W	R885	ERJ6GEYJ103	M 10K OHM J 1/10W
R822	ERDS1FJ224	C 220K OHM J 1/2W	R886	ERDS1FJ122	C 1.2K OHM J 1/2W
R823	EROS2CKF8202	M 82K OHM F 1/4W	R887	ERDS1FJ123	C 12K OHM J 1/2W
R824	ERDS2TJ470	C 47 OHM J 1/4W	R888	ERJ6GEYJ392	M 3.9K OHM J 1/10W
R825	ERW2PKR22	W 0.22 OHM K 2W	R892	ERJ6GEYJ223	M 22K OHM J 1/10W
R826	ERG3FJ104	M 100K OHM J 3W	R893	ERDS2TJ332	C 3.3K OHM J 1/4W
R827	ERQ12AJR7	F 4.7 OHM J 1/2W	R894	ERDS2TJ391	C 390 OHM J 1/4W
R828	ERDS1FJ274	C 270K OHM J 1/2W	R895	ERDS2TJ104	C 100K OHM J 1/4W
R829	ERDS2TJ223	C 22K OHM J 1/4W	R896	ERJ6GEYJ103	M 10K OHM J 1/10W
R830	ERG2SJ333	M 33K OHM J 2W	R897	ERD25FJ332K	C 3.3K OHM J 1/4W
R831	ERDS1FJ334	C 330K OHM J 1/2W	R898	ERJ6ENF3321	M 3.32K OHM F 1/10W
R832	ERDS2TJ224	C 220K OHM J 1/4W	R899	ERG1SJ102	M 1K OHM J 1W
R833	ERDS2TJ224	C 220K OHM J 1/4W	R901	TAP102Q9RO	POSISTOR
R834	ERG2SJ333	M 33K OHM J 2W	R902	ERDS1FJ103	C 10K OHM J 1/2W
R835	ERW2PKR22	W 0.22 OHM K 2W	R903	ERJ6GEYJ102	M 1K OHM J 1/10W
R836	ERD25FJ223K	C 22K OHM J 1/4W	R946	ERQ14AJ100	F 10 OHM J 1/4W
R837	ERQ14AJ330	F 33 OHM J 1/4W	R951	ERJ6ENF6042	M 60.4K OHM F 1/10W
R839	ERDS2TJ222	C 2.2K OHM J 1/4W	R952	ERJ6ENF6982	M 69.8K OHM F 1/10W
R840	ERDS2TJ222	C 2.2K OHM J 1/4W	R953	ERJ6ENF3742	M 37.4K OHM F 1/10W
R841	ERJ6GEYJ472	M 4.7K OHM J 1/10W	R954	ERJ6GEYJ681	M 680 OHM J 1/10W
R842	ERJ6GEYJ472	M 4.7K OHM J 1/10W	R955	ERJ6GEYJ102	M 1K OHM J 1/10W
R843	ERJ6GEYJ472	M 4.7K OHM J 1/10W	R956	ERJ6ENF1741	M 1.74K OHM F 1/10W
R844	ERJ6GEYJ122	M 1.2K OHM J 1/10W	R957	ERJ6ENF3321	M 3.32K OHM F 1/10W
R845	ERJ6GEYJ472	M 4.7K OHM J 1/10W	R958	ERJ6GEYJ272	M 2.7K OHM J 1/10W
R846	ERD25FJ561K	C 560 OHM J 1/4W	R959	ERJ6GEYJ272	M 2.7K OHM J 1/10W
R847	ERJ6GEYJ472	M 4.7K OHM J 1/10W	R960	ERDS2TJ2R7	C 2.7 OHM J 1/4W

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
R1001	EROS2CKF75R0	M 75 OHM F 1/4W	R1341	ERJ6GEYJ822	M 8.2K OHM J 1/10W
R1002	ERDS2TJ330	C 33 OHM J 1/4W	R1342	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R1003	ERJ8GICYJ391	M 390 OHM J 1/8W	R1343	ERJ6GEYJ182	M 1.8K OHM J 1/10W
R1005	ERJ6GEYJ563	M 56K OHM J 1/10W	R1345	ERJ6GEYJ102	M 1K OHM J 1/10W
R1051	ERD25FJ681K	C 680 OHM J 1/4W	R1346	ERJ6GEYJ153	M 15K OHM J 1/10W
R1052	ERDS2TJ102	C 1K OHM J 1/4W	R1347	ERJ8GICYJ101	M 100 OHM J 1/8W
R1053	ERDS1FJ330	C 33 OHM J 1/2W	R1361	ERDS1FJ151	C 150 OHM J 1/2W
R1054	ERDS2TJ224	C 220K OHM J 1/4W	R1362	ERJ6GEYJ154	M 150K OHM J 1/10W
R1055	ERDS2TJ224	C 220K OHM J 1/4W	R1363	ERJ6GEYJ154	M 150K OHM J 1/10W
R1056	ERDS2TJ223	C 22K OHM J 1/4W	R1364	EROS2CKF1502	M 15K OHM F 1/4W
R1057	ERJ6GEYJ103	M 10K OHM J 1/10W	R1365	ERG1SJ182	M 1.8K OHM J 1W
R1058	ERDS2TJ103	C 10K OHM J 1/4W	R1366	ERJ6GEYJ222	M 2.2K OHM J 1/10W
R1059	ERJ6GEYJ470	M 47 OHM J 1/10W	R1367	EROS2CKF1653	M 165K OHM F 1/4W
R1060	ERG1SJ103	M 10K OHM J 1W	R1368	ERDS2TJ103	C 10K OHM J 1/4W
R1061	ERJ6GEYJ101	M 100 OHM J 1/10W	R1369	ERDS2TJ182	C 1.8K OHM J 1/4W
R1101	EROS2CKF75R0	M 75 OHM F 1/4W	R1370	ERDS2TJ185	C 1.8M OHM J 1/4W
R1102	ERDS2TJ330	C 33 OHM J 1/4W	R1371	ERDS1FJ103	C 10K OHM J 1/2W
R1103	ERJ8GICYJ391	M 390 OHM J 1/8W	R1380	ERJ6GEYJ152	M 1.5K OHM J 1/10W
R1105	ERJ6GEYJ563	M 56K OHM J 1/10W	R1381	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R1151	ERD25FJ681K	C 680 OHM J 1/4W	R1382	ERJ6GEYJ272	M 2.7K OHM J 1/10W
R1152	ERDS2TJ102	C 1K OHM J 1/4W	R1383	ERDS2TJ683	C 68K OHM J 1/4W
R1153	ERDS1FJ330	C 33 OHM J 1/2W	R1384	ERDS1FJ125	C 1.2M OHM J 1/2W
R1154	ERDS2TJ224	C 220K OHM J 1/4W	R1385	ERJ8GICYJ222	M 2.2K OHM J 1/8W
R1155	ERDS2TJ224	C 220K OHM J 1/4W	R1387	ERJ6GEYJ100	M 10 OHM J 1/10W
R1156	ERDS2TJ223	C 22K OHM J 1/4W	R1401	ERJ6GEYJ101	M 100 OHM J 1/10W
R1157	ERJ6GEYJ103	M 10K OHM J 1/10W	R1402	ERD25FJ203K	C 20K OHM J 1/4W
R1158	ERDS2TJ103	C 10K OHM J 1/4W	R1403	ERJ6ENF6041	M 6.04K OHM F 1/10W
R1159	ERJ6GEYJ470	M 47 OHM J 1/10W	R1404	ERJ6ENF2742	M 27.4K OHM F 1/10W
R1160	ERG1SJ103	M 10K OHM J 1W	R1406	ERJ6GEYJ331	M 330 OHM J 1/10W
R1161	ERJ6GEYJ101	M 100 OHM J 1/10W	R1407	ERJ6GEYJ331	M 330 OHM J 1/10W
R1201	EROS2CKF75R0	M 75 OHM F 1/4W	R1408	ERJ6GEYJ103	M 10K OHM J 1/10W
R1202	ERDS2TJ330	C 33 OHM J 1/4W	R1409	ERJ6GEYJ103	M 10K OHM J 1/10W
R1203	ERJ8GICYJ391	M 390 OHM J 1/8W	R2001	ERJ6GEYJ103	M 10K OHM J 1/10W
R1205	ERJ6GEYJ563	M 56K OHM J 1/10W	R2002	ERJ6GEYJ683	M 68K OHM J 1/10W
R1251	ERD25FJ681K	C 680 OHM J 1/4W	R2003	ERJ8GICYJ103	M 10K OHM J 1/8W
R1252	ERDS2TJ102	C 1K OHM J 1/4W	R2004	ERJ6GEYJ683	M 68K OHM J 1/10W
R1253	ERDS1FJ330	C 33 OHM J 1/2W	R2005	ERJ6ENF4021	M 4.02K OHM F 1/10W
R1254	ERDS2TJ224	C 220K OHM J 1/4W	R2006	ERJ6ENF3571	M 3.57K OHM F 1/10W
R1255	ERDS2TJ224	C 220K OHM J 1/4W	R2007	ERJ6ENF4021	M 4.02K OHM F 1/10W
R1256	ERDS2TJ223	C 22K OHM J 1/4W	R2008	ERJ6ENF1002	M 10K OHM F 1/10W
R1257	ERJ6GEYJ103	M 10K OHM J 1/10W	R2009	ERJ6GEYJ102	M 1K OHM J 1/10W
R1258	ERDS2TJ103	C 10K OHM J 1/4W	R2010	ERJ6GEYJ102	M 1K OHM J 1/10W
R1259	ERJ6GEYJ470	M 47 OHM J 1/10W	R2011	ERJ6ENF6651	M 6.65K OHM F 1/10W
R1260	ERG1SJ103	M 10K OHM J 1W	R2012	ERJ6ENF2491	M 2.49K OHM F 1/10W
R1261	ERJ6GEYJ151	M 150 OHM J 1/10W	R2013	ERJ6GEYJ102	M 1K OHM J 1/10W
R1301	ERJ6ENF2212	M 22.1K OHM F 1/10W	R2014	ERG2SJ331	M 330 OHM J 2W
R1302	ERJ6ENF5111	M 5.11K OHM F 1/10W	R2015	ERJ6GEYJ822	M 8.2K OHM J 1/10W
R1304	ERD25FJ101K	C 100 OHM J 1/4W	R2016	ERJ6GEYJ222	M 2.2K OHM J 1/10W
R1305	ERD25FJ101K	C 100 OHM J 1/4W	R2017	ERJ6GEYJ562	M 5.6K OHM J 1/10W
R1307	ERJ6GEYJ103	M 10K OHM J 1/10W	R2018	ERJ6GEYJ682	M 6.8K OHM J 1/10W
R1309	ERJ6GEYJ331	M 330 OHM J 1/10W	R2201	ERJ6GEYJ102	M 1K OHM J 1/10W
R1310	ERJ6GEYJ123	M 12K OHM J 1/10W	R2202	ERJ6GEYJ102	M 1K OHM J 1/10W
R1311	ERDS1FJ123	C 12K OHM J 1/2W	R2203	ERDS1FJ2R2	C 2.2 OHM J 1/2W
R1331	ERJ6GEYJ103	M 10K OHM J 1/10W	R2204	ERDS1FJ2R2	C 2.2 OHM J 1/2W
R1332	ERJ6GEYJ0R00	M 0 OHM J 1/10W	R2205	ERJ6GEYJ331	M 330 OHM J 1/10W
R1333	ERJ6ENF1002	M 10K OHM F 1/10W	R2206	ERJ6GEYJ331	M 330 OHM J 1/10W
R1334	ERJ6ENF1002	M 10K OHM F 1/10W		OTHERS.	
R1335	ERDS2TJ562	C 5.6K OHM J 1/4W			
R1336	ERJ6GEYJ223	M 22K OHM J 1/10W			
R1338	ERJ6GEYJ473	M 47K OHM J 1/10W			
R1339	ERJ6GEYJ103	M 10K OHM J 1/10W			
R1340	ERJ6GEYJ331	M 330 OHM J 1/10W			
			△	TBX8752903	KNOB(AUDIO)
				TESA003	SPRING(PCB EARTH)
				TES8541-1	SPRING(LED)
				THTF001	SCREW(TR)

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
△	TKK859762-1	JACK PANEL	S602	TAGDSP141TTA	SPARK GAP
	TMKE008	SILICONE SHEET	S1051	TAGDSP201MF	SPARK GAP
	TMKK001	TAPE(FOR TCO PCB)	S1151	TAGDSP201MF	SPARK GAP
	TMM85572-2	LED SPACER	S1251	TAGDSP201MF	SPARK GAP
	TUCC5142	PC BOARD BRACKET(AUDIO)	S1351	TAGDSP201MF	SPARK GAP
	TUC87574	AC INLET BRACKET	S1361	TAGDSP201MF	SPARK GAP
	TUW85515	JACK BRACKET	S1371	TGPS152GL	SPARK GAP
	TXAJTV3P1666	3P CONNECTOR ASSY	SG1001	TJC85341	EARTH LUG
	XTB3+6C	SCREW	SG1002	TJC85341	EARTH LUG
	XTV3+6J	SCREW	SG1003	TJC85341	EARTH LUG
	XTV3+8J	SCREW	SG1004	TJC85341	EARTH LUG
	XTW3+8T	SCREW	SW101	EVQPBO05K	SWITCH
F888	TSFX15A352	FUSE(3.5A)	SW102	EVQPBO05K	SWITCH
F889	TSF89102	FUSE(1.0A)	SW103	EVQPBO05K	SWITCH
FG1	TJEA013	EARTH TERMINAL	SW104	EVQPBO05K	SWITCH
FG3	TJC85341	EARTH LUG	SW105	EVQ33405R	SWITCH
FG4	TJC85341	EARTH LUG	SW106	EVQ33405R	SWITCH
FG5	TJC85341	EARTH LUG	SW107	EVQ33405R	SWITCH
FG6	TJC85341	EARTH LUG	△ SW801	ESB91234A	SWITCH(POWER)
FG7	TJC85341	EARTH LUG	TP1	TEL302-9	TERMINAL
FG8	TJC85341	EARTH LUG	TP2	TEL302-9	TERMINAL
FS801	TJC85502T	FUSE HOLDER	TP3	TEL302-9	TERMINAL
FS802	TJC85502T	FUSE HOLDER	TP4	TEL302-9	TERMINAL
JK2001	TJS9A882A	MINI JACK	TP5	TEL302-9	TERMINAL
JK2002	TJS9A881A	PHONO PIN SOCKET(2P)	X101	TSSA020	CRYSTAL OSCILLATOR
JK2201	TJS9A8440	HEADPHONE JACK	X1401	TSSJ009	CERAMIC OSCILLATOR
JK2202	TJS9A8440	HEADPHONE JACK			
N12	TJSF00605	5P CONNECTOR			
N13	TJSF00604	4P CONNECTOR			
N101	EMCSO451ML	4P CONNECTOR(L-TYPE)			
N103	EMCSO564M	5P CONNECTOR			
N105	EMCSO551ML	5P CONNECTOR			
N150	TJSF13120	20P CONNECTOR			
N151	TJSF13120	20P CONNECTOR			
N152	TJSF13120	20P CONNECTOR			
N201	TJS118620	5P CONNECTOR			
△ N801	TJS8A9361	AC SOCKET			
N940	EMCSO264M	2P CONNECTOR			
N951	TJS118590	2P CONNECTOR			
N1001	TJS118640	7P CONNECTOR			
N1002	TXAJTV8P159	8P CONNECTOR ASSY			
N1002A	TJS118650	8P CONNECTOR			
N1003	TXAJTV11P015	11P CONNECTOR ASSY			
N1003A	TJS118680	11P CONNECTOR			
△ N1004	TJS8A5130	CRT SOCKET			
N1005	TJC85342T	LUG TERMINAL			
N1006	TJCD003	TERMINAL			
N1007	TJC85342T	LUG TERMINAL			
N2001A	EMCSO664M	6P CONNECTOR			
N2001B	EMCSO651ML	6P CONNECTOR(L-TYPE)			
N2002	EMCSO264M	2P CONNECTOR			
N2005	EMCSO564M	5P CONNECTOR			
N2201	EMCSO464M	4P CONNECTOR			
N501-1	TEL302-9	TERMINAL			
N501-2	TEL302-9	TERMINAL			
N501-3	TEL302-9	TERMINAL			
N501-4	TEL302-9	TERMINAL			
N901-1	TEL302-9	TERMINAL			
N901-2	TEL302-9	TERMINAL			
△ PC821	LTV-817B	PHOTO COUPLER			
△ RL901	TSEH0004	RELAY			
S371	TGPS152GL	SPARK GAP			

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