



# Projection TV Service Manual

# **Model Group: PTV**

**CHASSIS: PDT-6**

**MODEL:  
PTV-4300**

## CONTENTS

|     |                                                                                       |    |
|-----|---------------------------------------------------------------------------------------|----|
| 1   | General Description & Safety Instructions .....                                       | 4  |
| 1.1 | General Description .....                                                             | 4  |
| 1.2 | Maintenance Instructions .....                                                        | 5  |
| 1.3 | Electrical Specification .....                                                        | 5  |
| 2   | Signal Processing Flow Chart .....                                                    | 6  |
| 3   | Troubleshooting Charts .....                                                          | 10 |
| 3.1 | Safety Precaution .....                                                               | 10 |
| 3.2 | Troubleshooting Charts .....                                                          | 11 |
| 4   | Characteristics of Pins of Main ICs .....                                             | 14 |
| 5   | Convergence Adjustment .....                                                          | 28 |
| 5.1 | Description of Function Keys on Remote Controller for<br>Convergence Adjustment ..... | 28 |
| 5.2 | Convergence Adjustment Procedures .....                                               | 29 |
| 6   | I <sup>2</sup> C-bus Data .....                                                       | 33 |
| 7   | Parts List & Replacement Parts List .....                                             | 36 |
| 8   | Appendix .....                                                                        | 62 |
| 8.1 | Printed Circuit Board .....                                                           | 62 |
| 8.2 | Schematic Diagram .....                                                               | 64 |
| 8.3 | Exploded View .....                                                                   | 65 |
| 8.4 | BPBT Board .....                                                                      | 66 |
| 8.5 | Circuit Diagram .....                                                                 | 67 |

## 1. General Description & Safety Instructions

### 1.1 General Description

#### **WARNING!**

In order to prevent electric shock, do not remove cover.

No user-serviceable parts inside refer servicing to qualified service personnel.

#### **Features**

Conventional color TVs apply 50Hz/60Hz alternate scanning and scan a picture in two separate fields, which results in distinct scanning structural lines and horizontal flicker. As the TVs can display only 25/30 frames of picture per second, it cause wide-range image flicker. The larger the TV screen is, the more conspicuous the problems are. Therefore, watching this kind of TV, you are susceptible to eyestrain.

With the world's the state of the art digital inverter technology, our rear projection TV is an improved product for better performance. With 60Hz progressive scanning, the RPTV can display a whole frame of picture per scanning and increase display frequency from 25 frames of picture per second to 60. At the same period of time, the RPTV can scan lines of up to 1250, two times as many as the conventional TVs. The RPTV removes completely wide range image flicker and horizontal flicker, and offers sharper and more lifelike pictures.

- Precision vision: With progressive scanning, the RPTV automatically increases vertical frequency from 50Hz to 60Hz and horizontal frequency from 15625Hz to 31250Hz.
- Automatic white balance correction: The RPTV correct automatically white balance each power-on, which avoids color distortion due to long time use and delivers consistently vivid color.
- VGA terminal: You may connect a computer to the VGA terminal on the RPTV and use the RPTV as a large-screen multimedia display terminal, through which you can surf Internet and play games.
- Advanced projection tube" High brightness and high-resolution projection tube of the world's advanced level guarantees high brightness and reliable focus performance.

#### **Other features**

- 7" projection tube (3 pieces)
- 470MHz CATV ready
- Multi system/digital NICAM reception
- Theatre and music surround system
- Still picture
- On/off timer
- Wide power voltage range
- Digital frequency synthesized tuner
- Easy operation
- High-contrast and high-luminance black optical screen
- 236(0~235) programs preset
- Hi-Fi audio system
- DVD VIDEO COMPONENT IN terminals
- No-signal-off
- I<sup>2</sup>C bus control
- Digital matrix convergence
- Luminous remote controller
- Program swap

## 1.2 Maintenance Instructions

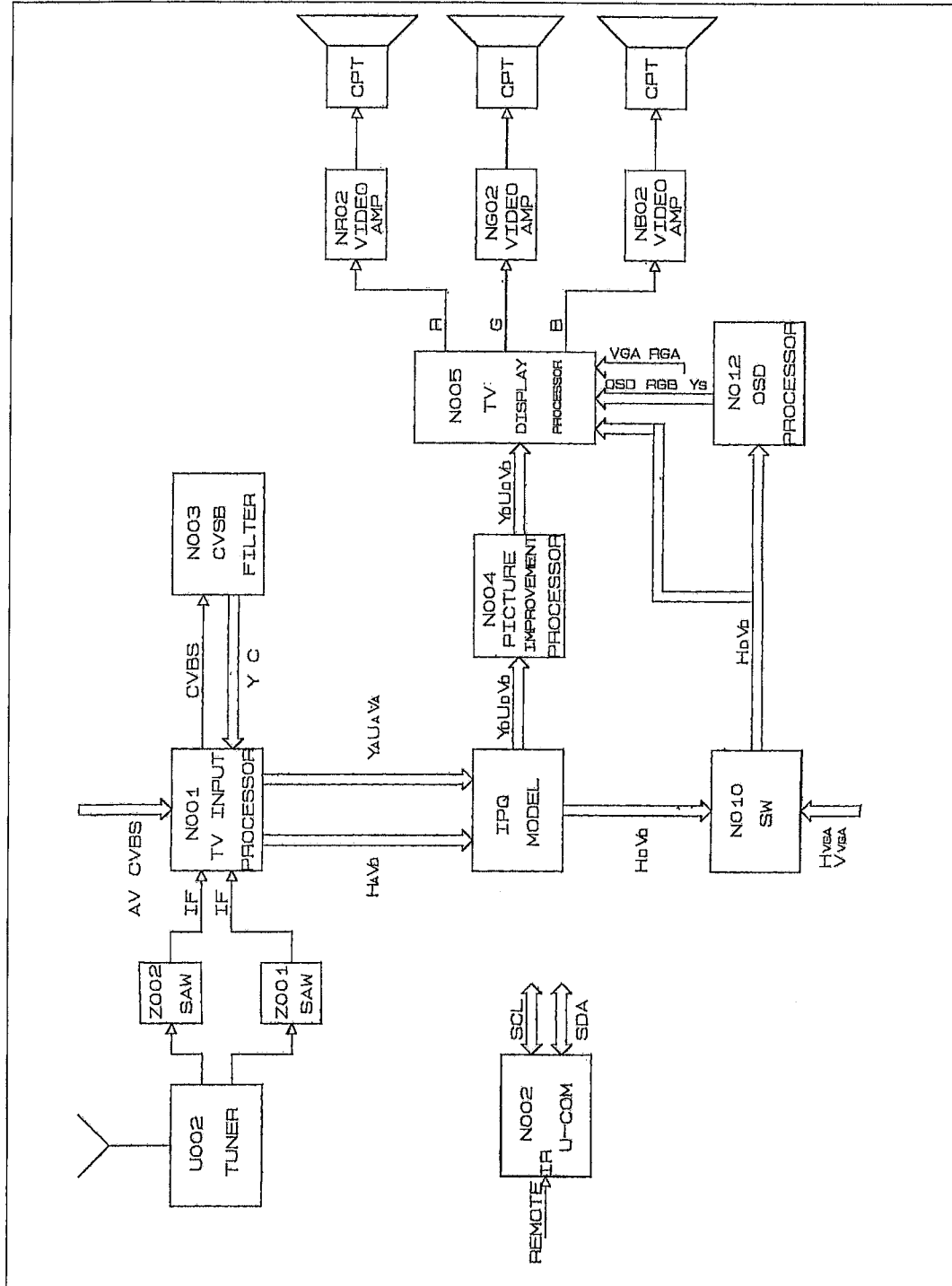
- If a problem occurs (such as no picture or no sound), or if smoke or an abnormal odor starts to come out from the RPTV, immediately unplug the power cord and contact the service agency as soon as possible.
- High voltage inside! Non-professionals can not open the back cover.
- Do not expose the RPTV to direct sunshine or put it near heat sources.
- Do not put the RPTV in a place subject to moisture and dust or where the rain can reach.
- Set up a lightning arrester when an outdoor antenna is used. Do not turn on the RPTV in thunder days. At lightning intervals, pull off the power cord and antenna cable.
- Please turn off power supply of the RPTV while outgoing. In case of the RPTV is not used for a long period of time, please pull off the power cord and antenna cable.
- Do not put anything on the RPTV, especially objects filled with water or chemical material on top of the RPTV. Doing so may cause deformation to the cabinet and screen or water to spill into the RPTV.
- Install the RPTV in a place with good air circulation. Do not cover the ventilating holes to prevent the RPTV from overheating.
- Avoid hard objects hitting on the RPTV (especially screen) or severe vibration when moving the unit. Doing so may adversely affect location of the inside lens.
- To prevent the RPTV from falling off or tip over, place the RPTV on stable and flat surface without vibration and fix it according to Operation Manual.
- Do not switch the RPTV on and off frequently. Doing so may shorten life span of the RPTV.
- Do not switch on or off the RPTV by plugging or pulling off the plug.
- When using TV games, computers and similar products with your RPTV, keep the brightness and contrast functions at low setting. If a fixed pattern is left on the screen for a long period of time, especially at a high brightness or contrast setting, the image can be permanently imprinted onto the screen, which is not covered by your warranty.
- Wipe the cabinet regularly using only a soft cleaning cloth.
- If the cabinet is particularly dirty, soak a soft cloth in water to which a small amount of neutral detergent has been added, and dry it to wipe the cabinet. Do not use organic solvent.
- Keep the screen dry. Wipe the screen using a dry soft cloth. Observe the instructions if using a synthetic rag.

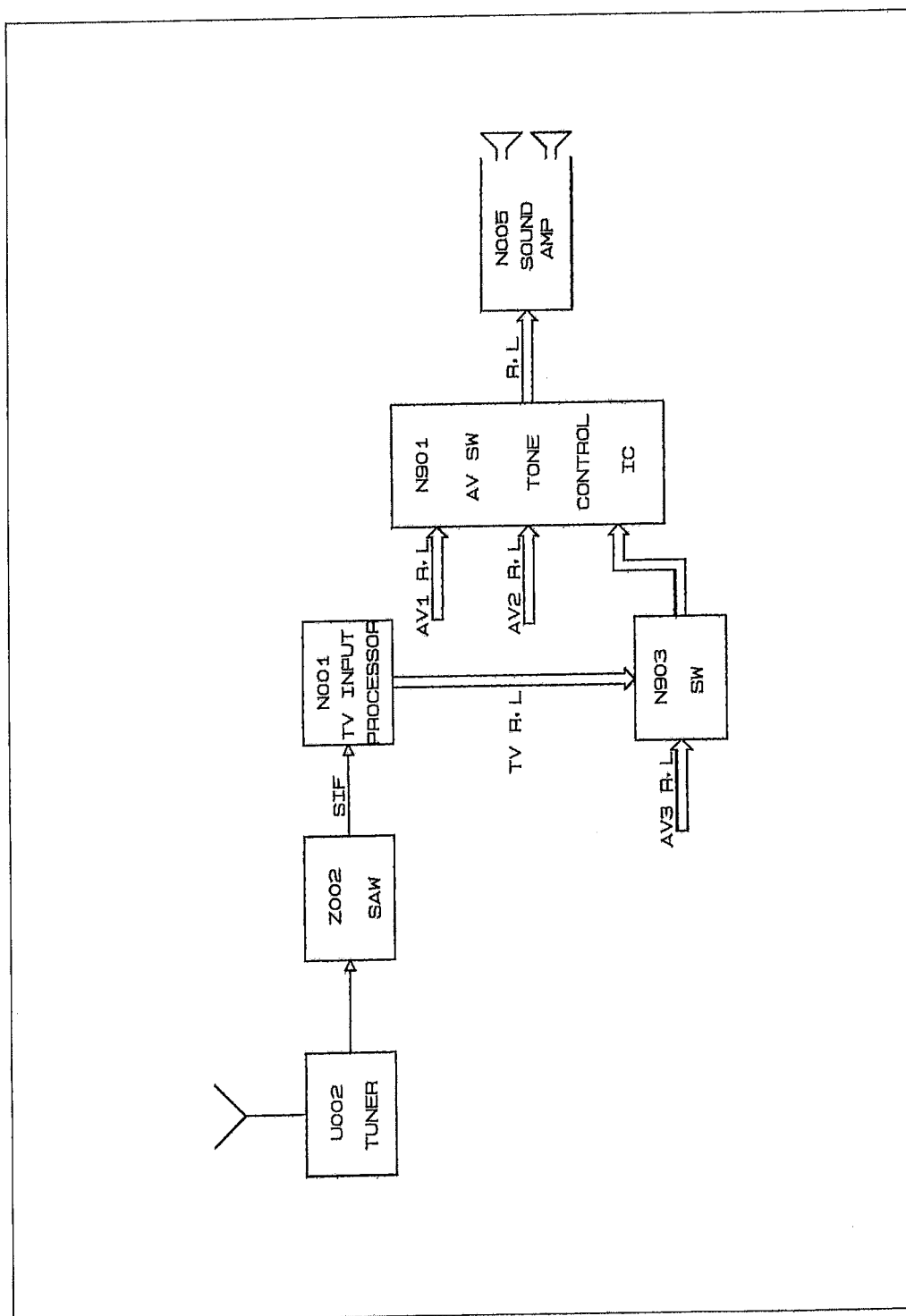
## 1.3 Electrical Specification

|                         |                                                 |
|-------------------------|-------------------------------------------------|
| Rated voltage           | AC 150 ~ 260V, 50Hz / 60Hz                      |
| Rated power consumption | ~250W                                           |
| Receiving channels      | VHF: C1 ~ C12 UHF: C13~C57 CATV: Z1~ Z37        |
| Color system            | PAL 4.43, PAL 3.58, NTSC 3.58, NTSC 4.43, SECAM |
| Sound system            | D / K, I, M, B/G                                |
| Audio output            | 15W + 15W (THD = 7%)                            |

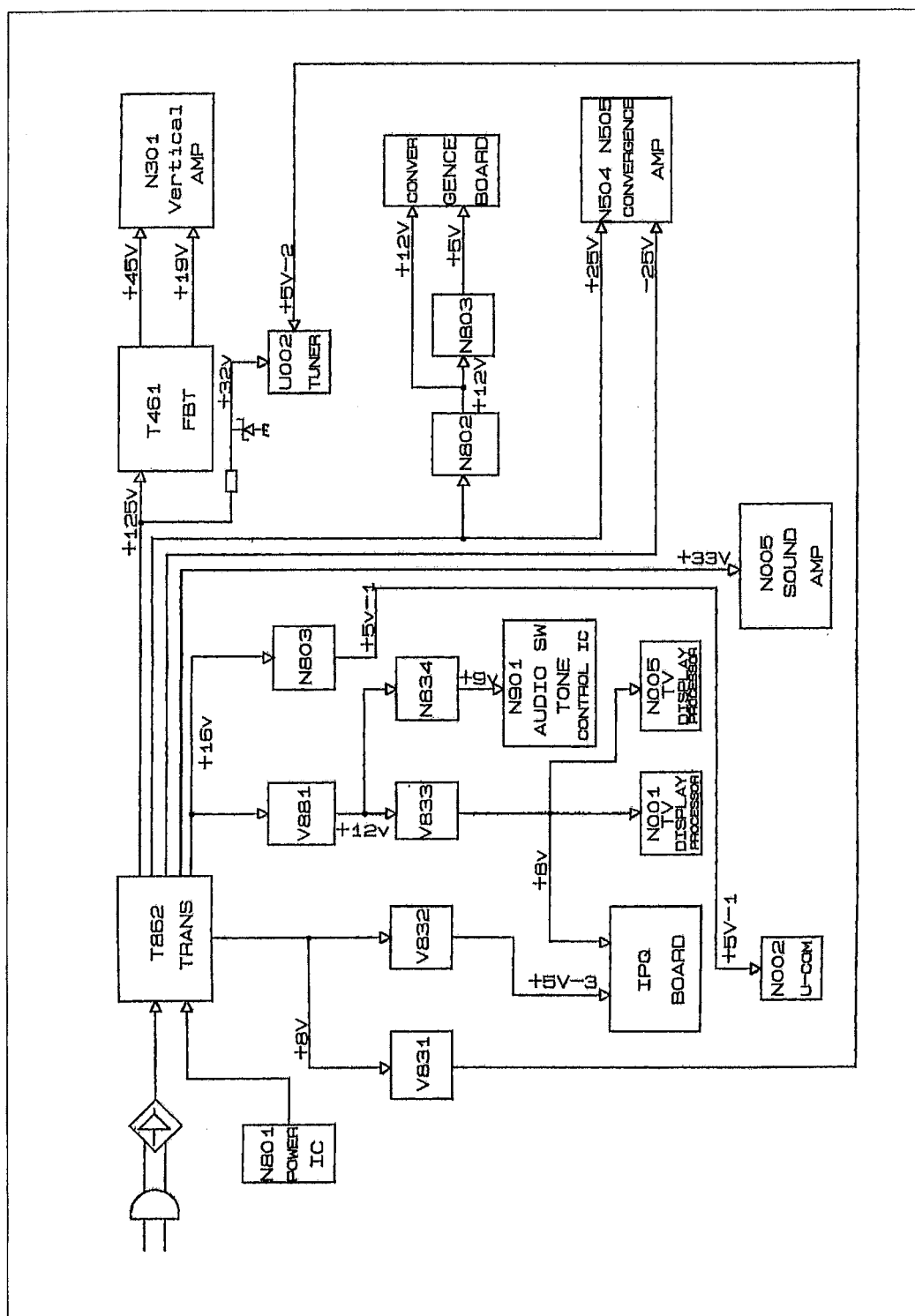
## 2. Signal Processing Flow Chat

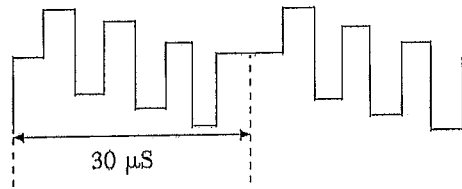
## Signal Chassis



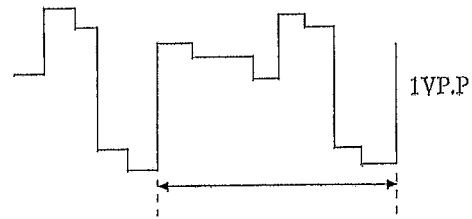


## Power Line Block Diagram

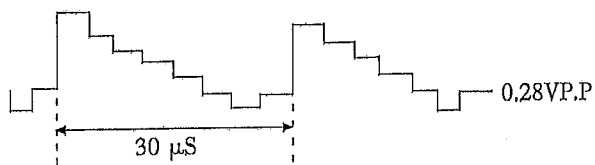




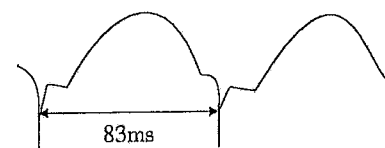
UD Color Difference Signal at Pin 27 of TDA9332



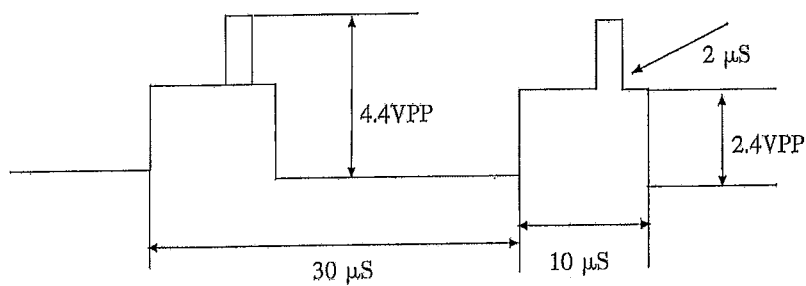
VD Color Difference Signal at Pin 26 of TDA9332



Luminance Signal at Pin 28 of TDA9332



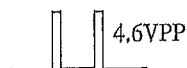
E-W Parabola Wave at Pin 23 of TDA9332



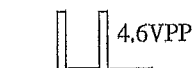
Sandcastle Pulse Signal Waveform from Pin9 of TDA 9332



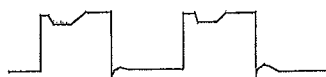
VA -OUT Waveform at Pin61 of TDA9321



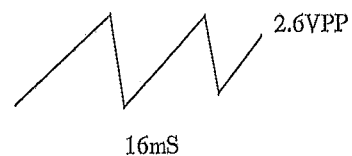
VD Waveform from In-verter Module Assembly



Waveform at Pin7 of PCA8516



Line Actuating Pulse Waveform from Pin8 of TDA9332



Nominal Vertical Sawtooth of Pin 15 of TDA9332

### 3. Troubleshooting Charts

#### 3.1 Safety Precaution

**WARNING:**

Service should not be attempted by anyone unfamiliar with the necessary precaution on the RPTV. The following are the necessary precaution to be observed before servicing.

1. Cold ground near the point to be tested, not warm ground on the power supply board shall be 0 reference when testing voltage at circuit joints.
2. In the process of servicing, do not turn on/off the set quickly and frequently. The minimum interval shall be more than 30s.
3. Always be certain that the wires are connected or wrapped as it was after completion of servicing.
4. Keep signal and supply wires from high voltage or high temperature components.
5. Be careful and do not scratch the screen and lens when removing the screen.
6. Normally, do not perform any operation (e.g. press VOLUME UP/DOWN buttons) under the item of "INIT" of Data menu for final adjustment in order to avoid initiating final-adjusted data.

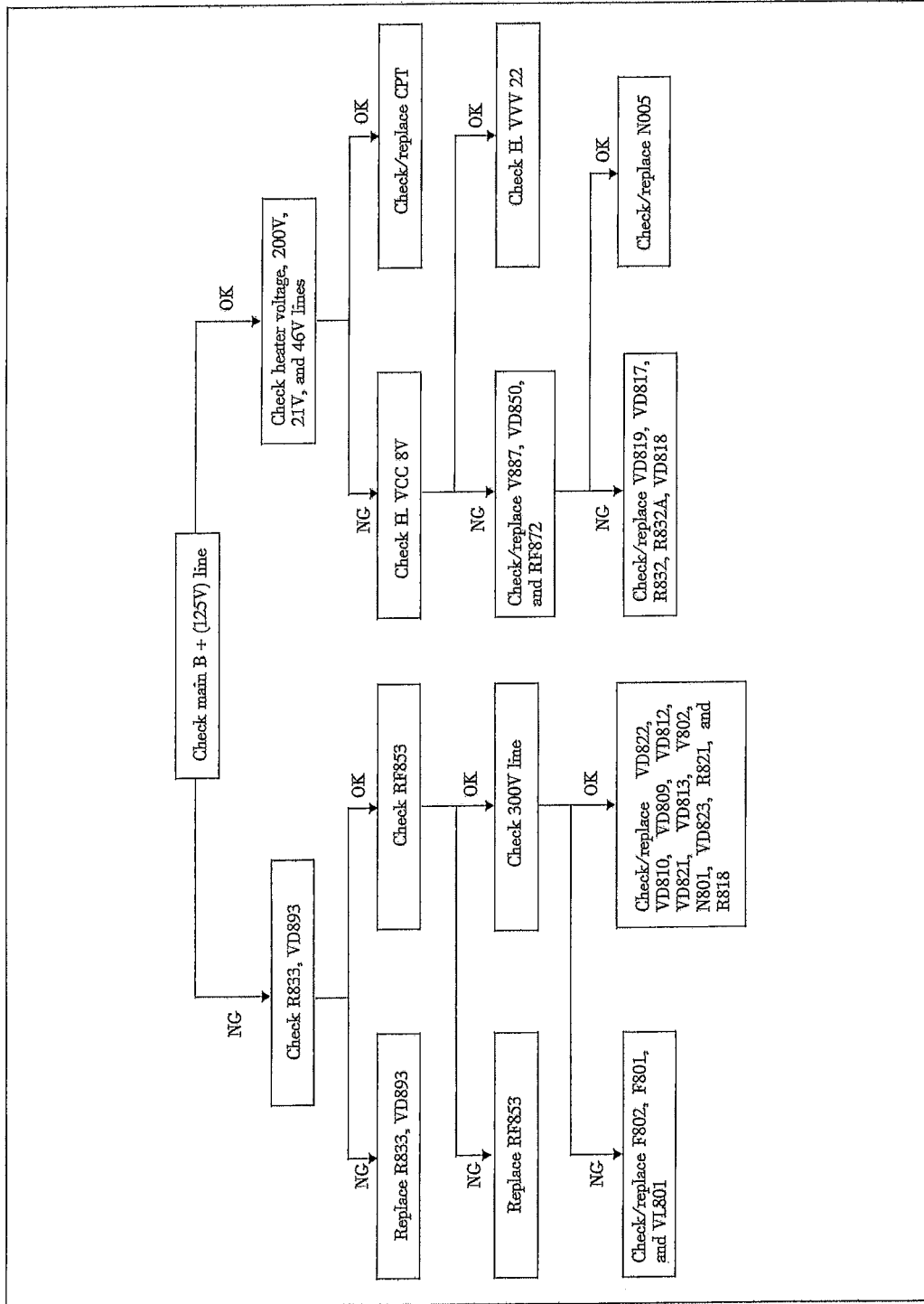
#### Product Safety Notice

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts, which have these special safety characteristics are identified in this manual and its supplements.

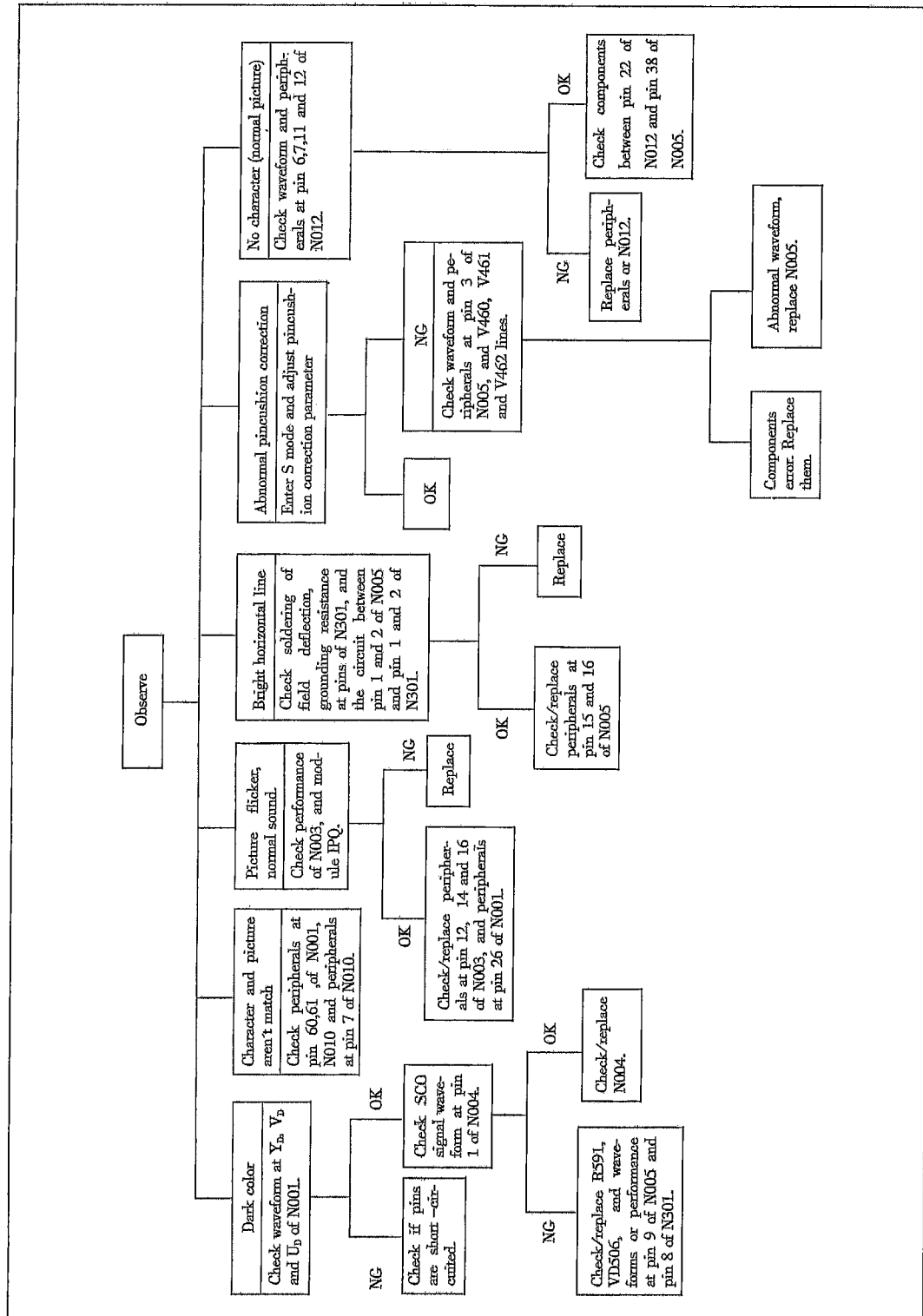
Electrical components having such feature are identified by printing on the schematic diagram and the part list. Before replacing any of these components, read the part list in this manual carefully. Unauthorized substitutions may result in fire, electric shock or other hazards.

## 3.2 Troubleshooting Charts

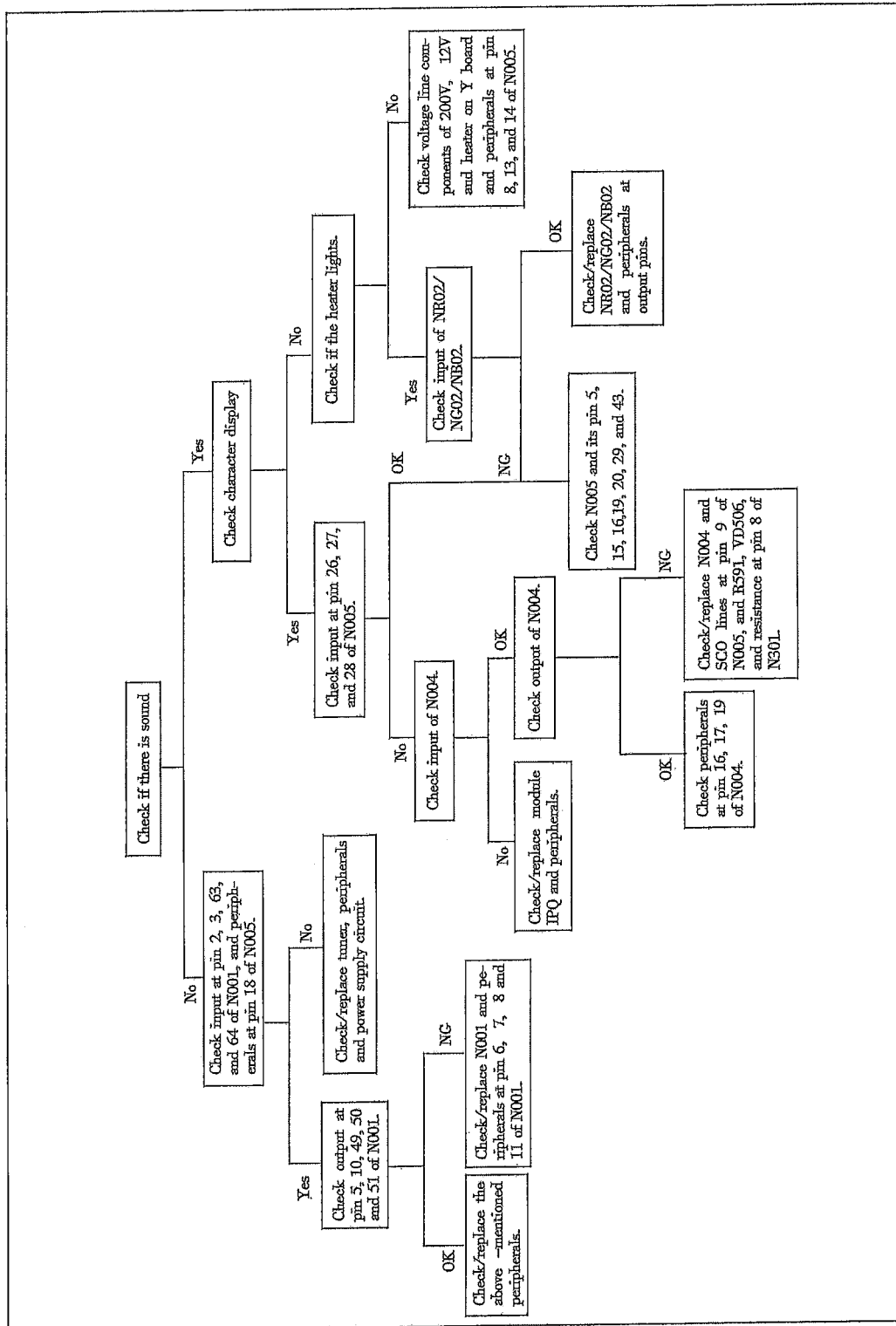
No Raster



Abnormal OSD



No picture

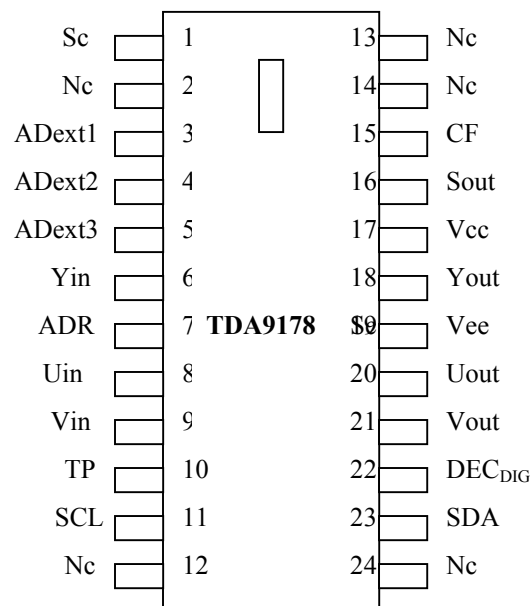


## 4. Characteristics of Pins of Main ICs

### TDA9178

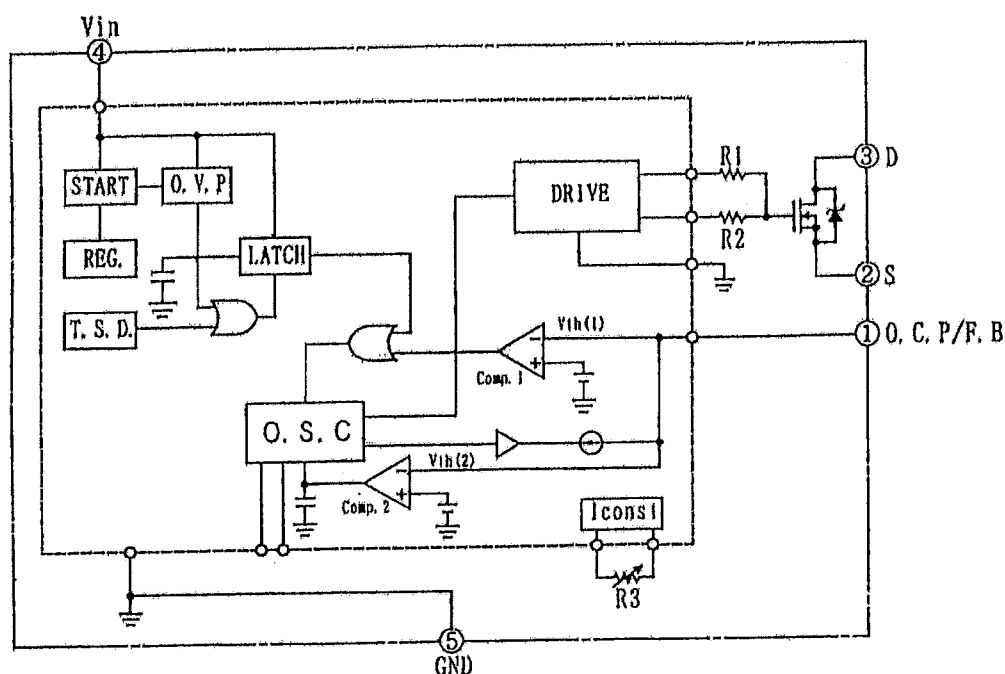
Pinning and external components of the TDA9178:

|    |        |                                     |
|----|--------|-------------------------------------|
| 1  | Sc     | Sandcastle input pin                |
| 2  | Nc     | Not connected pin                   |
| 3  | ADext1 | External AD-conversion #1 input pin |
| 4  | ADext2 | External AD-conversion #2 input pin |
| 5  | ADext3 | External AD-conversion #3 input pin |
| 6  | Yin    | Luminance input pin                 |
| 7  | ADR    | Address selection input pin         |
| 8  | uin    | -(B-Y) signal input pin             |
| 9  | Vin    | -(R-Y) signal input pin             |
| 10 | TP     | Testpin connected to ground         |
| 11 | SCL    | I2C.bus: clock input pin            |
| 12 | Nc     | Not connected pin                   |
| 13 | Nc     | Not connected pin                   |
| 14 | SDA    | I~C-bus: data input pin             |
| 15 | DECDIG | Decoupling digital supply           |
| 16 | Vout   | -(R-Y) signal output pin            |
| 17 | Vout   | -(B-Y) signal output pin            |
| 18 | Vee    | Ground pin                          |
| 19 | Yout   | Luminance output pin                |
| 20 | Vee    | Supply-voltage pin                  |
| 21 | Sout   | Luminance output for SCAVEM         |
| 22 | CF     | Cue-flash output pin                |
| 23 | Nc     | Not connected pin                   |
| 24 | Nc     | Not connected pin                   |



## STR-F6658B

### Block Diagram



### Function of Terminal

| Terminal No | Symbols    | Description                     | Functions                                                               |
|-------------|------------|---------------------------------|-------------------------------------------------------------------------|
| 1           | O.C.P /F.B | Overcurrent / Feedback terminal | Input over current detection signal and constant voltage control signal |
| 2           | S          | Source terminal                 | MOS FET source                                                          |
| 3           | D          | Drain terminal                  | MOS FET drain                                                           |
| 4           | VIN        | Power supply terminal           | Input of power supply for control circuit                               |
| 5           | GND        | Ground terminal                 | Ground                                                                  |

### Other Functions

| Symbol | Functions                       |
|--------|---------------------------------|
| O.V.P  | Over voltage protection circuit |
| T.S.D  | Thermal shutdown circuit        |

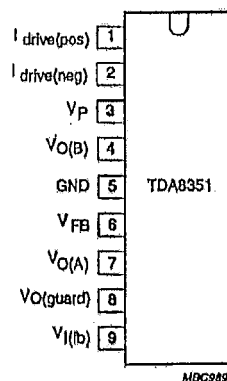
### Internal Constants

|    |         |    |                                     |
|----|---------|----|-------------------------------------|
| R1 | 100 Ohm | R3 | Iconst adjustment trimming resistor |
| R2 | 6.8 Ohm |    |                                     |

## TDA8351

DC- coupled vertical deflection circuit

| Symbol           | Pin | Description                                                  |
|------------------|-----|--------------------------------------------------------------|
| $I_{drive(pos)}$ | 1   | input power-stage(positive); includes $I_{I(s)}$ signal bias |
| $I_{drive(neg)}$ | 2   | input power-stage(negative); includes $I_{I(s)}$ signal bias |
| $V_P$            | 3   | operating supply voltage                                     |
| $V_{O(B)}$       | 4   | output voltage B                                             |
| GND              | 5   | ground                                                       |
| $V_{FB}$         | 6   | input flyback supply voltage                                 |
| $V_{O(A)}$       | 7   | output voltage A                                             |
| $V_{O(guard)}$   | 8   | guard output voltage                                         |
| $V_{I(fb)}$      | 9   | input feedback voltage                                       |



Metal block connected to substrate pin 5.  
Metal on back.

Fig.1 Pin configuration.

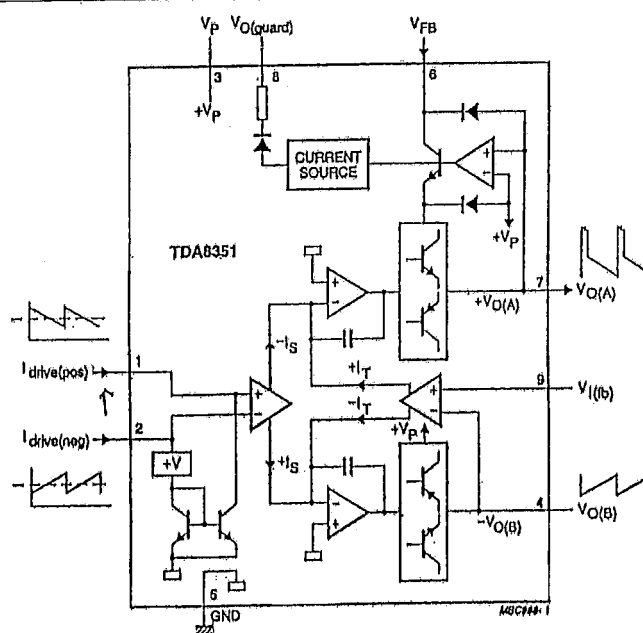
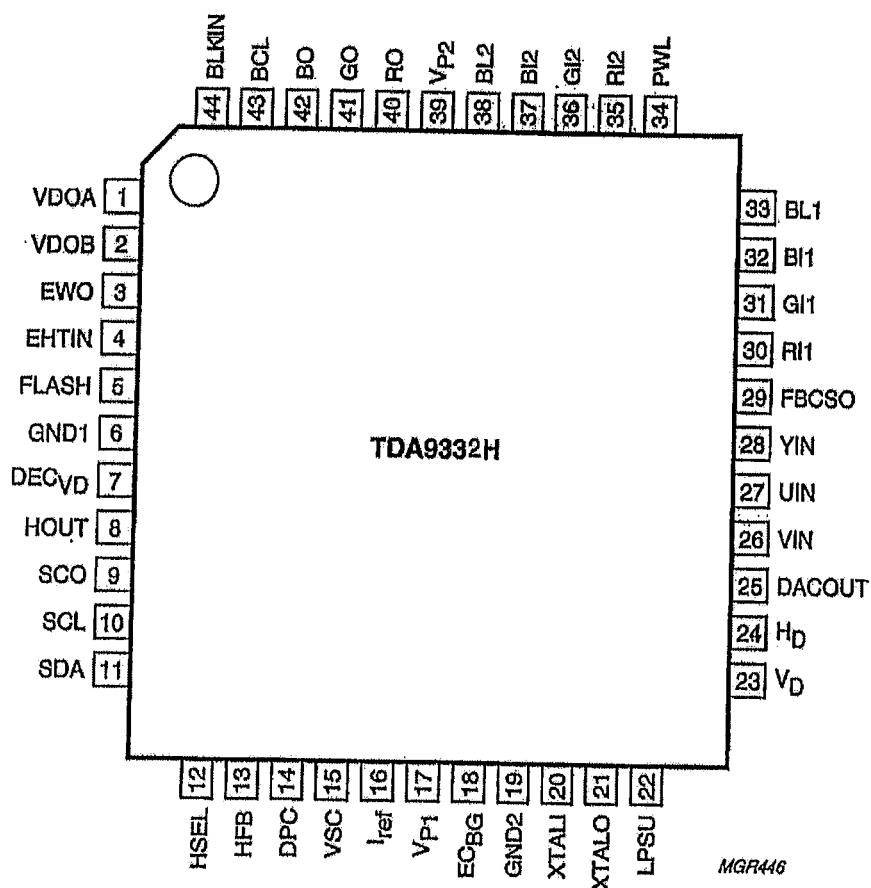


Fig.2 Block diagram.

## TDA-9332H

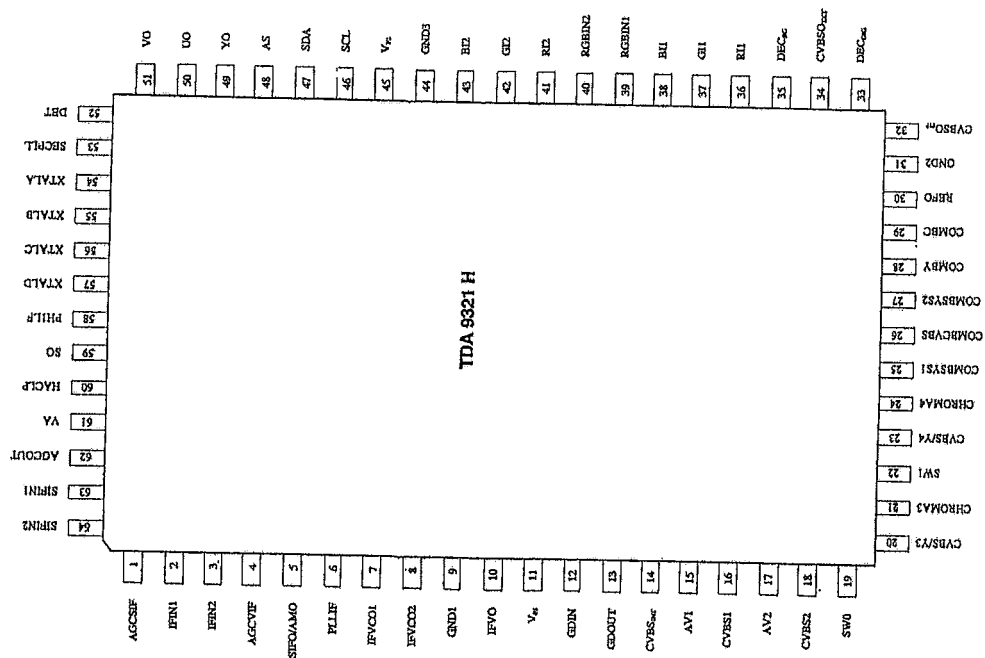
### TV Display Processor



Pinning diagram of QFP44

## TDA9321H

### TV Input Processor



Pinning diagram of QFP-64

## TDA6111Q

Video output amplifier

### General description

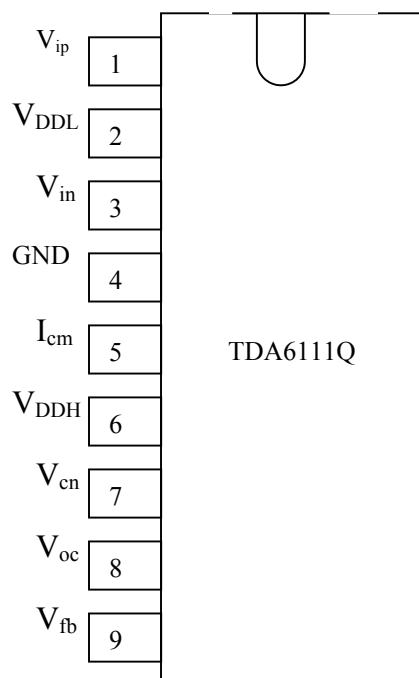
The TDA611Q is a video output amplifier with 16 MHz bandwidth. The device is contained in a single in-line 9-pin medium power (DBS9MPF) package, using high-voltage DMOS technology, intended to drive the cathode of a color CRT.

### Quick reference data

| Symbol                               | Parameter                             | Conditions                           | Min.             | Typ. | Max.             | Unit |
|--------------------------------------|---------------------------------------|--------------------------------------|------------------|------|------------------|------|
| V <sub>DDH</sub>                     | high level supply voltage             |                                      | 0                | -    | 250              | V    |
| V <sub>DDL</sub>                     | low level supply voltage              |                                      | 0                | -    | 14               | V    |
| I <sub>DDH</sub>                     | quiescent high voltage supply current | V <sub>OC</sub> =0.5V <sub>DDH</sub> | 7.0              | 9.0  | 11.0             | mA   |
| I <sub>DDL</sub>                     | quiescent low voltage supply current  | V <sub>OC</sub> =0.5V <sub>DDH</sub> | 5.0              | 6.8  | 8.0              | mA   |
| V <sub>I</sub>                       | input voltage                         |                                      | 0                | -    | V <sub>DDL</sub> | V    |
| V <sub>OC</sub> ,<br>V <sub>fb</sub> | output voltage                        |                                      | V <sub>DDL</sub> | -    | V <sub>DDH</sub> | V    |
| T <sub>stg</sub>                     | storage temperature                   |                                      | -55              | -    | +150             | °C   |
| T <sub>amb</sub>                     | operating ambient temperature         |                                      | -20              | -    | +65              | °C   |

### Pinning

| Symbol           | Pin | Description                      |
|------------------|-----|----------------------------------|
| V <sub>ip</sub>  | 1   | non-inverting voltage input      |
| V <sub>DDL</sub> | 2   | supply voltage LOW               |
| V <sub>in</sub>  | 3   | inverting voltage input          |
| GND              | 4   | ground, substrate                |
| I <sub>om</sub>  | 5   | black current measurement output |
| V <sub>DDH</sub> | 6   | supply voltage HIGH              |
| V <sub>cn</sub>  | 7   | cathode transient voltage output |
| V <sub>oc</sub>  | 8   | cathode DC voltage output        |
| V <sub>fb</sub>  | 9   | feedback voltage output          |



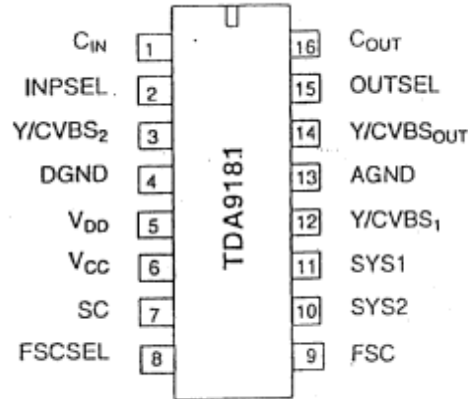
**Pin configuration**

## TDA9181

### Integrated multistandard comb filter

#### Pinning

| Symbol    | Pin | Description                      |
|-----------|-----|----------------------------------|
| CIN       | 1   | chrominance input signal         |
| INPSEL    | 2   | input switch select input        |
| Y/CVBS2   | 3   | luminance or CVBS input signal 2 |
| DGND      | 4   | digital ground                   |
| VDD       | 5   | digital supply, voltage          |
| VCC       | 6   | analog supply voltage            |
| SC        | 7   | sandcastle input signal          |
| FSCSEL    | 8   | subcarrier select input          |
| FSC       | 9   | subcarrier input signal          |
| SYS2      | 10  | standard select 2 input          |
| SYS1      | 11  | standard select 1 input          |
| Y/CVBS1   | 12  | luminance or CVBS input signal 1 |
| AGND      | 13  | analog ground (signal reference) |
| Y/CVBSOUT | 14  | luminance or CVBS output signal  |
| OUTSEL    | 15  | output switch select input       |
| COUT      | 16  | chrominance output signal        |



### Pin configuration

**Table 1: Pin Function, Reference Voltage and Resistance to Ground of TDA9178**

| Pin No. | Short Description                                            | Static Voltage | Dynamic Voltage | Resistance to Ground |
|---------|--------------------------------------------------------------|----------------|-----------------|----------------------|
| 1       | Sandcastle Pulse Input                                       | 0.77           | 0.77            | Infinity             |
| 2       | Not Connected Pin                                            | 0              | 0               | 0.1                  |
| 3       | A/D Input 1                                                  | 0              | 0               | 0.1                  |
| 4       | A/D Input 2                                                  | 0              | 0               | 0.1                  |
| 5       | A/D Input 3                                                  | 0              | 0               | 0.1                  |
| 6       | Inverter YD Luminance Signal Input                           | 1.51           | 1.47            | 0.1                  |
| 7       | Ground                                                       | 0              | 0               | 0                    |
| 8       | Inverter UD Color Difference Signal Input                    | 1.50           | 1.46            | 0.1                  |
| 9       | Inverter VD Color Difference Signal Input                    | 1.51           | 1.47            | 0.1                  |
| 10      | Not Connected Pin                                            | 0.41           | 0               | 0                    |
| 11      | Clock Signal Jumper                                          | 3.2 Variant    | 3.2 Variant     | 5.8K                 |
| 12      | Not Connected Pin                                            | 0              | 0               | 0                    |
| 13      | Not Connected Pin                                            | 0              | 0               | 0                    |
| 14      | Data Signal Jumper                                           | 2.9 Variant    | 3.1 Variant     | 5.8K                 |
| 15      | De-coupling Capacitor                                        | 5.07           | 5.06            | Infinity             |
| 16      | V Color Difference Signal Output after Transient Improvement | 2.63           | 2.67            | Infinity             |
| 17      | U Color Difference Signal Output after Transient Improvement | 2.63           | 2.64            | Infinity             |
| 18      | Ground                                                       | 0              | 0               | 0                    |
| 19      | Luminance Signal (Y) Output after Transient Improvement      | 0.73           | 0.8             | Infinity             |
| 20      | +SV Power Supply                                             | +8.01          | 8.01            | 0.9K                 |
| 21      | VM Signal Output                                             | 2.21           | 2.27            | Infinity             |
| 22      | Low Frequency Flicker Detection Output                       | 2.72           | 0.73            | Infinity             |
| 23      | Ground                                                       | 0              | 0               | 0                    |
| 24      | Ground                                                       | 0              | 0               | 0                    |

**Table 2: Pin Function, Reference Voltage and Grounding Resistance of TDA9321**

| Pin No. | Short Description                                                                               | Static Voltage | Dynamic Voltage | Resistance to Ground |
|---------|-------------------------------------------------------------------------------------------------|----------------|-----------------|----------------------|
| 1       | Sound IF Signal Processing AGC Filter                                                           | 2.77           | 3.11            | Infinity             |
| 2       | Video IF Signal Input                                                                           | 4.65           | 4.62            | 69.8K                |
| 3       | Video IF Signal Input                                                                           | 4.65           | 4.62            | 69.8K                |
| 4       | PIF Amplifier AGC Filter for External Video                                                     | 1.29           | 4.01            | Infinity             |
| 5       | 2nd Sound IF Signal Output                                                                      | 3.37           | 3.36            | Infinity             |
| 6       | Detection Phase-locked Loop Filter for External Video                                           | 3.49           | 2.89            | Infinity             |
| 7       | Connects IF Coil T101                                                                           | 3.81           | 3.79            | Infinity             |
| 8       | Connects IF Coil T101                                                                           | 3.81           | 3.79            | 0                    |
| 9       | Ground                                                                                          | 0.11           | 0.11            | 3.3K                 |
| 10      | TV Video Signal Output                                                                          | 4.81           | 3.12            | 0.9K                 |
| 11      | 8V Power Supply                                                                                 | 8.13           | 8.09            | Infinity             |
| 12      | TV Video Signal Input Processed by Sound Trapper                                                | 3.52           | 3.94            | Infinity             |
| 13      | TV Video Signal Output Processed by Group Delay line                                            | 2.94           | 3.37            | Infinity             |
| 14      | TV Video Signal. Input                                                                          | 3.57           | 3.57            | Infinity             |
| 15      | Not Connected Pin                                                                               | 0.51           | 0.13            | 88.K                 |
| 16      | Connects Video Signal from AV2 Terminal                                                         | 3.52           | 3.51            | Infinity             |
| 17      | Not Connected Pin                                                                               | 0.5            | 0.13            | 88.5K                |
| 18      | CVBS2 Video Signal Input                                                                        | 4.35           | 3.57            | Infinity             |
| 19      | M System Control Signal Output                                                                  | 4.91           | 4.91            | Infinity             |
| 20      | Connects Y Luminance Signal from S1 Terminal                                                    | 3.53           | 3.51            | Infinity             |
| 21      | Connects Chrominance Signal from S 1 Terminal                                                   | 0.22           | 0.22            | 99.1K                |
| 22      | Not Connected Pin                                                                               | 0.11           | 0.11            | Infinity             |
| 23      | Connects Luminance Signal (Y-3) from S3 Terminal                                                | 3.53           | 3.51            |                      |
| 24      | Connects Chrominance Signal (C-3) from S3 Terminal                                              | 0.22           | 0               | 99.0K                |
| 25      | Outputs Switching Signal SYSI for Controlling Comb Circuit                                      | 0.11           | 0               | Infinity             |
| 26      | TV/AV Video Signal Output, to Comb Circuit SAA4961                                              | 3.44           | 4               | Infinity             |
| 27      | Outputs Switching Signal SYS2 for Controlling Comb Circuit Status                               | 5.01           | 5.00            | Infinity             |
| 28      | Luminance Signal Input from Comb Circuit                                                        | 3.63           | 0               | Infinity             |
| 29      | Chrominance Signal Input from Comb Circuit                                                      | 0.22           | 0               | 99.3K                |
| 30      | Color Sub-carrier Signal Output, to Comb Circuit SAA4961                                        | 4.25           | 0               | Infinity             |
| 31      | Ground                                                                                          | 0.11           | 0.11            | 0                    |
| 32      | Not Connected Pin                                                                               | 3.44           | 3.71            | Infinity             |
| 33      | Power De-coupling Filter Capacitor                                                              | 5.02           | 5.01            | Infinity             |
| 34      | Video Signal Output, to AV Output Port                                                          | 2.19           | 2.6             | Infinity             |
| 35      | Not Connected Pin                                                                               | 4.12           | 3.11            | 37.3K                |
| 36      | Connects DVD Jack, Inputs V Color Difference Signal (or External R1 Primary Color Signal Input) | 3.29           | 4.79            | Infinity             |
| 37      | Connects DVD jack, Inputs Y Luminance Signal (or External G1 Primary Color Signal Input)        | 3.31           | 2.82            | Infinity             |
| 39      | Fixed Level RGB1 Input with Fast-Blanking input, Forced into                                    | 2.75           | 2.74            | 22.0K                |

| Pin No. | Short Description                                                                              | Static Voltage    | Dynamic Voltage | Resistance to Ground |
|---------|------------------------------------------------------------------------------------------------|-------------------|-----------------|----------------------|
| 38      | Connects DVD Jack, Inputs U Color Difference Signal (or Extenaal B1 Primmy Color Signal Input) | 3.16              | 2.80            | Infinity             |
| 40      | Not Connected Pin                                                                              | 3.14              | 4.03            | Infinity             |
| 41      | Not Connected Pin                                                                              | 3.35              | 2.84            | Infinity             |
| 42      | Not Connected Pin                                                                              | 3.36              | 2.86            | Infinity             |
| 43      | Not Connected Pin                                                                              | 3.36              | 2.86            | Infinity             |
| 44      | Ground                                                                                         | 0.11              | 0.11            | 0                    |
| 45      | 8V Power Supply                                                                                | 8.17              | 8.16            | 0.9K                 |
| 46      | I <sup>2</sup> C Bus Clock Signal Jumper                                                       | 3.2-3.26 Variant  | 3.44            | 5.8K                 |
| 47      | I <sup>2</sup> C Bus Data Signal Jumper                                                        | 2.96-3.12 Variant | 3.37            | 5.9K                 |
| 48      | Not Connected Pin                                                                              | 0.80              | 0.12            | 173.5K               |
| 49      | Luminance Signal Output, to Inverter Processing Assembly                                       | 2.87              | 3.46            | Infinity             |
| 50      | U Color Difference Signal Output, to Inverter Assembly                                         | 2.45              | 2.27            | Infinity             |
| 51      | V Color Difference Signal Output, to Inverter Assembly                                         | 2.43              | 2.42            | Infinity             |
| 52      | Color Phase-demodulation Filter Capacitor (PLL)                                                | 4.56              | 5.05            | Infinity             |
| 53      | SECAM De-modulation Filter Capacitor                                                           | 4.12              | 0               | Infinity             |
| 54      | 4.43 MHZ Crystal                                                                               | 2.52              | 2.55            | Infinity             |
| 55      | 3.582 MHZ Crystal                                                                              | 2.54              | 2.54            | Infinity             |
| 56      | 3.579 MHZ Crystal                                                                              | 2.54              | 2.54            | Infinity             |
| 57      | 3.575 MHZ Crystal                                                                              | 2.54              | 2.54            | Infinity             |
| 58      | Line Phase-discriminator 1 Filter Network                                                      | 3.93              | 4.18            | Infinity             |
| 59      | Not Connected Pin                                                                              | 0.84              | 0.84            | Infinity             |
| 60      | Horizontal Sync. Signal Output HA, to Inverter Circuit                                         | 0.5               | 0.5             | Infinity             |
| 61      | Vertical Sync. Output VA, to Inverter Circuit                                                  | 0.17              | 0.16            | Infinity             |
| 62      | Radio AGC Control Voltage Output                                                               | 6.67              | 6.77            | 8.8K                 |
| 63      | Sound IF Signal Input                                                                          | 4.64              | 4.63            | 69.8K                |
| 64      | Sound IF Signal Input                                                                          | 4.64              | 4.63            | 69.8K                |

**Table 3: Pin Function, Reference Voltage and Grounding Resistance of P87C766 (N002)**

| Pin No. | Short Description                                                                             | Static Voltage | Dynamic Voltage | Resistance to Ground |
|---------|-----------------------------------------------------------------------------------------------|----------------|-----------------|----------------------|
| 1       | PIP Hue Control Output                                                                        | 0.14           | 0.37            | Infinity             |
| 2       | 50/60Hz Control Signal Output                                                                 | 0.14           | 0.24            | Infinity             |
| 3       | Geomagnetism Connection Control Output                                                        | 0.14           | 0.46            | Infinity             |
| 4       | Mute Control Signal Output                                                                    | 3.08           | 0               | 12.3K                |
| 5       | VGA2 Protection Mode Setting, High level is active                                            | 0              | 0               | 0                    |
| 6       | VGA Sync. Switch Signal Output, Low Level Selects VGA Sync. Signal                            | 0              | 0               | 12.4K                |
| 7       | VGA Identification Signal Input                                                               | 0              | 0               | 52.6K                |
| 8       | VGA Protection Signal Input, "PROTECTION" is displayed when the screen is in protection mode. | 0.73           | 4.88            | Infinity             |
| 9       | External Mute Control Output                                                                  | 3.56           | 4.88            | 12.4K                |
| 10      | Button Control Component                                                                      | 5.02           | 4.88            | 10.61K               |
| 11      | Button Control Component                                                                      | 5.02           | 4.88            | 10.5K                |
| 12      | TV/AV Switching Voltage Output Audio Switching Signal between TV and AV3,                     | 0              | 0               | 12.4K                |
| 13      | Standby/Power-on Control Signal Output                                                        | 3.82           | 0               | 17.3K                |
| 14      | Not Connected Pin                                                                             | 0.20           | 0.4             | Infinity             |
| 15      | Not Connected Pin                                                                             | 0.20           | 0.41            | Infinity             |
| 16      | Not Connected Pin                                                                             | 0.20           | 0.47            | Infinity             |
| 17      | Indicator Control Signal Output                                                               | 0              | 0               | 12.7K                |
| 18      | Sound System Switch Control Signal Output                                                     | 0              | 0               | 12.9K                |
| 19      | Sound System Control Signal Output                                                            | 0              | 0               | 12.9K                |
| 20      | Not Connected Pin                                                                             | 0              | 0.45            | Infinity             |
| 21      | Ground                                                                                        | 0              | 0               | 0                    |
| 22      | Not Connected Pin                                                                             | 0              | 0               | Infinity             |
| 23      | Not Connected Pin                                                                             | 0              | 0               | Infinity             |
| 24      | Not Connected Pin                                                                             | 0              | 0               | Infinity             |
| 25      | Not Connected Pin                                                                             | 0              | 0               | Infinity             |
| 26      | Not Connected Pin                                                                             | 0.16           | 0.55            | Infinity             |
| 27      | Not Connected Pin                                                                             | 0.16           | 0.54            | Infinity             |
| 28      | Power Supply +5V to CPU Analog Signal Processing Circuit                                      | 5.03           | 4.88            | 2.5K                 |
| 29      | Ground                                                                                        | 0              | 0               | 0                    |
| 30      | Not Connected Pin                                                                             | 0.18           | 0.51            | Infinity             |
| 31      | Clock Oscillating Signal Input, Connects 12MHZ Crystal Oscillator                             | 2.02           | 1.95            | Infinity             |
| 32      | Clock Oscillating Signal Output, Connects 12MHZ Crystal Oscillator                            | 2.64           | 5.54            | Infinity             |
| 33      | CPU Reset Pin, High Level Voltage is Active                                                   | 0              | 0               | 47.2K                |
| 34      | Not Connected Pin                                                                             | 5.02           | 4186            | Infinity             |
| 35      | Bus Production Mode Setting, Ex-factory Mode is High Level                                    | 5.02           | 4.4 Variant     | 17.3K                |
| 36      | 1st Bus Signal Output, Connects Clock Signal                                                  | 5.02           | 4.77            | 5.8K                 |
| 37      | Remote Signal input                                                                           | 4.96           | 4.82            | 30.6K                |
| 38      | 1st Bus Control Output, Connects Data Signal                                                  | 5.01           | 4.72 Variant    | 5.9K                 |
| 39      | 2nd Bus Signal Output, Connects Clock Signal, to controlled Circuit                           | 5.01           | 3.3 Variant     | 5.8K                 |
| 40      | 2nd Bus Signal Output, Connects Data Signal, to Controlled Circuit                            | 5.01           | 3.1 Variant     | 5.8K                 |
| 41      | Not Connected Pin                                                                             | 5.01           | 4.87            | 12.5K                |
| 42      | CUP+SV Supply Voltage                                                                         | 5.01           | 4.87            | 2.5K                 |

**Table 4: Pin Function, Reference Voltage and Grounding Resistance of TDA9332H(N005)**

| Pin No. | Short Description                                                                        | Static Voltage | Dynamic Voltage | Resistance to Ground |
|---------|------------------------------------------------------------------------------------------|----------------|-----------------|----------------------|
| 1       | Vertical Drive Negative Output A                                                         | 2.24           | 2.31            | Infinity             |
| 2       | Vertical Drive Positive Output B                                                         | 2.26           | 2.31            | Infinity             |
| 3       | E/W Correction Pulse Output                                                              | 3.36           | 3.26            | 15.0K                |
| 4       | EHT High Voltage Detection Signal Input                                                  | 1.54           | 1.46            | 16.2K                |
| 5       | Quick Detection Input                                                                    | 0.07           | 0.06            | Infinity             |
| 6       | Ground                                                                                   | 0              | 0               | 0                    |
| 7       | Data Circuit De-coupling                                                                 | 5.00           | 5.00            | Infinity             |
| 8       | Line Actuating Pulse Output                                                              | 0.67           | 6.67            | 81.5K                |
| 9       | Sandcastle Pulse Output, to Color Transient Improving Circuit TDA9178                    | 0.77           | 0.77            | Infinity             |
| 10      | 2nd Bus Signal Clock Signal Jumper                                                       | 3.04           | 3.1 Variant     | 5.9                  |
| 11      | 2nd Bus Signal Data Signal Jumper                                                        | 2.9            | 3.0 Variant     | 5.9K                 |
| 12      | Not Connected Pin                                                                        | 4.17           | 4.95            | 146.8K               |
| 13      | Line Retrace Pulse Input                                                                 | 0.60           | 0.57            | Infinity             |
| 14      | Dynamic Phase Correction Pulse Input                                                     | 3.56           | 3.20            | 67.8K                |
| 15      | Field Saw tooth Forming Capacitor C507                                                   | 0              | 0.03            | Infinity             |
| 16      | Reference Current Forming Resistor R512 for Field Saw tooth Generator                    | 3.89           | 3.89            | 39.2K                |
| 17      | Line Actuating Power Input                                                               | 8.08           | 8.06            | 49.9K Charged        |
| 18      | Connects Regulated Supply Filter Capacitor C510                                          | 4.75           | 4.75            | Infinity             |
| 19      | Ground                                                                                   | 0              | 0               | 0                    |
| 20      | Line Voltage-operated Oscillator Crystal C501 (12MHZ)                                    | 1.22           | 1.05            | Infinity             |
| 21      | Connects 12MHZ Crystal                                                                   | 1.05           | 1.07            | Infinity             |
| 22      | Not Connected Pin                                                                        | 0.04           | 00.04           | Infinity             |
| 23      | Selected VGA or TV/AV Vertical Syne. Signal Input                                        | 0.02           | 0.04            | 157.5K               |
| 24      | Selected VGA or TV/AV Horizontal Syne. Signal Input                                      | 0.99           | 0.39            | Infinity             |
| 25      | Not Connected Pin                                                                        | 0.87           | 0.30            | 43.5K                |
| 26      | V Color Difference Signal Input                                                          | 3.58           | 3.61            | Infinity             |
| 27      | U Color Difference Signal Input                                                          | 3.60           | 3.51            | Infinity             |
| 28      | Y Luminance Signal Input                                                                 | 3.41           | 3.46            | Infinity             |
| 29      | Ground                                                                                   | 0.05           | 0.04            | 0                    |
| 30      | VGA Interface for R Primary Color Signal Input (R1)                                      | 2.60           | 2.60            | Infinity             |
| 31      | VGA Interface for G Primary Color Signal Input (G1)                                      | 2.60           | 2.60            | Infinity             |
| 32      | VGA Interface for B Primary Color Signal Input (B1)                                      | 2.60           | 2160            | Infinity             |
| 33      | RGB1 Input with Blanking Input, Set to High Level, VGA Signal is Selected to Bus Setting | 1.98           | 0.04            | 1.8K                 |
| 34      | Peak White Limiting Filter Capacitor                                                     | 0.18           | 0.18            | Infinity             |
| 35      | R Primary Color Signal Input for Character Display (R2)                                  | 3.55           | 3.54            | Infinity             |
| 36      | G Primary Color Signal Input: for Character Display (G2)                                 | 3.54           | 3.54            | Infinity             |
| 37      | B Primary Color Signal Input for Character Display (B2)                                  | 3.54           | 3.54            | Infinity             |
| 38      | RGB2 Input with Blanking Input Blkz                                                      | 0              | 0               | 1.0K                 |
| 39      | +SV Power Voltage                                                                        | 8.00           | 8.0             | 1.0K                 |
| 40      | R Primary Color Signal Output, to Final Playback Circuit                                 | 2.50           | 2.50            | 3.0K                 |

|    |                                                          |      |      |             |
|----|----------------------------------------------------------|------|------|-------------|
| 41 | G Primary Color Signal Output, to Final Playback Circuit | 2.48 | 2.53 | 3.0K        |
| 42 | B Primary Color Signal Output, to Final Playback Circuit | 2.51 | 2.56 | 3.0K        |
| 43 | Auto-Luminance Control Signal input                      | 2.47 | 2.46 | 64K Charged |
| 44 | Black Current Detecting Signal Input                     | 6.91 | 6.89 | 151.5K      |

**Table 5" Pin Function, Reference Voltage and Grounding Resistance of PCA8516 (NO12)**

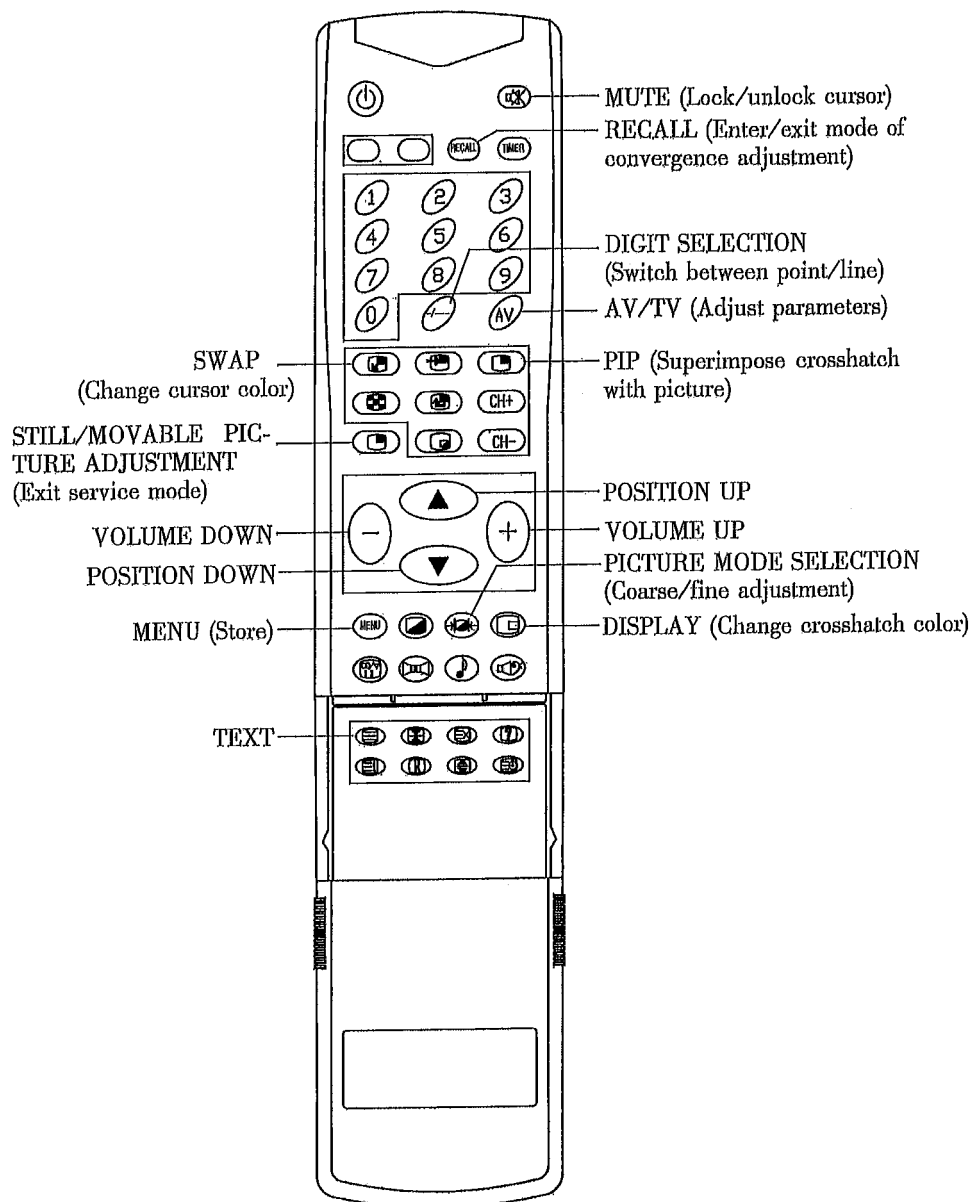
| Pin No | Short Description                                 | Operating Voltage | Resistance to Ground |
|--------|---------------------------------------------------|-------------------|----------------------|
| 1      | Not Connected Pin                                 | 0.08              | 166.2K               |
| 2      | Not Connected Pin                                 | 0.08              | Infinity             |
| 3      | Ground                                            | 0                 | 0                    |
| 4      | Ground                                            | 0                 | 0                    |
| 5      | Connects RC Filtering Network                     | 2.31              | Infinity             |
| 6      | Inverter Vertical Position Pulse Input            | 0.13              | 158.2K               |
| 7      | Inverter Horizontal Position Pulse Input          | 0.49              | Infinity             |
| 8      | Clock Signal                                      | 2.9               | Infinity             |
| 9      | Data Signal                                       | 3.1               | 5.7K                 |
| 10     | Connects 4MHZ Character Crystal Oscillator        | 2.38              | Infinity             |
| 11     | Connects 4MHZ Crystal Oscillator                  | 2.28              | Infinity             |
| 12     | Ground                                            | 0.08              | 0                    |
| 13     | +5V Character Oscillating Reset Voltage is Active | 5                 | 3.4K                 |
| 14     | Ground                                            | 0                 | 0                    |
| 15     | Connects 5V                                       | 5                 | 2.4K                 |
| 16     | Character R Primary Color Signal Output           | 0.26              | 6.6K                 |
| 17     | Not Connected Pin                                 | 5                 | 158.3K               |
| 18     | Character G Primary Color Signal Output           | 0.24              | 6.5K                 |
| 19     | Not Connected Pin                                 | 5                 | 162.0K               |
| 20     | Character B Primary Color Signal Output           | 0                 | 6.5K                 |
| 21     | Connects 5V Power Supply                          | 5                 | 2.3K                 |
| 22     | Character Blanking Output                         | 0.26              | 2.9K                 |
| 23     | Ground                                            | 0                 | 0                    |
| 24     | Connects +5V Power                                | 5                 | 2.4K                 |

### Operating Voltage of Triode

| Pos. No. | b    | c    | e    | Pos. No. | b      | c      | e      |
|----------|------|------|------|----------|--------|--------|--------|
| V201     | 0    | 4.9  | 0    | V461     | 3.45   | 7.18   | 2.77   |
| V251     | 4.3  | 4.9  | 4.95 | V4.02    | 0.52   | 7.75   | 0      |
| V250     | 4.92 | 0    | 4.95 | V462     | -10.87 | -0.64  | -11.47 |
| V672     | 0.64 | 0    | 0    | V460     | -0.64  | -19.27 | -0.11  |
| V612     | 7.57 | 2.97 | 7.39 | V404     | -20.2  | 126.3  | -0.01  |
| V671     | 0.65 | 0    | 0    | V1005    | 0      | 4.6    | 0      |
| V673     | 0.64 | 0.   | 0    | V801     | 23.2   | 27.3   | 22.6   |
| V102     | 0.7  | 0    | 0    | V803     | 26.0   | 1,3'   | 26.6   |
| V104A    | 2.81 | 8.12 | 2.15 | V805     | 1.79   | ,1.77  | 2.45   |
| V103A    | 3.85 | 6.14 | 4.57 | V804     | 0.74   | 4.95   | 0.61   |
| V 103    | 3.87 | 6.14 | 4.57 | V806     | 4.92   | 4.95   | 4.28   |
| V 104    | 3.88 | 7.97 | 3.22 | N803     | 26.6   | -0.1   | 4.9    |
| V 101    | 1.43 | 8.09 | 0.69 | V807     | 8.7    | 27.2   | 8.1    |
| V504     | 1.58 | 0.1  | 0    | V802     | 6.8    | 36.2   | 8.1    |
| V502     | 1.09 | 0    | 1.72 | V832     | 5.90   | 7.55   | 5.23   |
| V503     | 5.05 | 1.68 | 1.72 | V831     | 5.84   | 7.6    | 5.22   |
| Q1       | 1.23 | 6.95 | 0.46 |          |        |        |        |

## 5. Convergence Adjustment

### 5.1 Description of Function Keys on Remote Controller for Convergence Adjustment



## 5.2 Convergence Adjustment Procedures

Note: When performing after-sales service or repair, you usually need only to fine-adjust the crosshatch in red and blue and make them be lined with green crosshatch on the basis of green crosshatch. It is not necessary to perform other adjustments.

### CONVERGENCE ADJUSTMENT

Notes: In the convergence mode, if the first two displayed characters are "P", it means PAL, and if "Q", it means NTSC. In the two modes of DVD, the character display is the same as the two above-mentioned modes. "V" stands for VGA mode. These characters are omitted in the following OSD display description.

### CONVERGENCE ADJUSTMENT IN PAL

- I With receiving of PAL signal, and the volume to 0, press and hold MUTE button until the red "MUTE" character becomes three colors (or white), then press MENU button on front panel of TV to enter "S" mode (Press "S" button on the jig to enter "S" mode directly when in production). Press yellow RECALL button to enter the phase of convergence adjustment, and the red convergence crosshatch displays in the screen. Press DISPLAY button to switch into green crosshatch signal.

**Note" Generally speaking, you can go to Step IV, V, VI and VII directly.**

- 1 Press TEXT button to clear fine/coarse adjusted data of the six channels in the RAM of convergence IC.

**Note: Normally speaking, do not reset the RPTV to 0. If it is necessary, exit convergence mode and time it before your resetting.**

- 2 Adjustment of static convergence in green. Press PIP button until the video image superimposes crosshatch testing signal. Press PICTURE MODE SELECTION button until character "DCGH" appears, then press POSITION UP/DOWN buttons to call up "DCGH"("DCGV"). Press VOLUME UP/DOWN buttons to make the center of green line (field) of 5-CH video test pattern locate at the center of the screen. Then press PIP button to conceal the video image.
- II Phase adjustment
    - a. Adjustment of H. fine adjustment and phase of horizontal test
      - i. Instate of crosshatch in green, press PICTURE MODE SELECTION button to call up " FINE NODE", and press SWAP button to switch the cursor into green. Press MUTE button until "P LOCK" appears. Now press POSITION UP button to display the GV value of fine adjusted convergence at H#4/V#4 point as the maximum value on the screen.
      - ii. Press AV button to call up "FINE PHASE", Press VOLUME UP/DOWN buttons to make the peak appear at the vertical line at the right of horizontal center.
      - iii. Press AV button to call up "TEST PHASE". Adjust VOLUME UP/DOWN button to make the cursor locate at the peak.
      - iv. Reset GV value at H#4/V#4 to "0".

- b Setting of start lines of fine-adjusted convergence (setting of STARTLINES)
    - i In the state of crosshatch in green, press PICTURE MODE SELECTION button to enter "FINE MODE", then press VOLUME UP/DOWN buttons to set the GH fine adjustment value at H#4/V#4 as maximum, and make the peak displays on the screen.
    - ii Press AV button to call up "STARTLINES", then press VOLUME UP/DOWN buttons till the peak displays at the center of the field. (Note: "START LINES" value can only be odd number).
    - iii Return the GH fine adjusted value at H#4/V#4 to "0".
  - c Press PICTURE MODE SELECTION button to display "DCRH". Press POSITION UP/DOWN buttons to call up "KGV3", and press VOLUME DOWN button to set KGV3 as a larger data. If the cursor is off the horizontal center, press AV button to call up "COAR PHASE", then press VOLUME UP/DOWN buttons to return the cursor to the original position.
  - d Press PICTURE MODE SELECTION button until "DCRH" displays on the screen. Press POSITION UP/DOWN buttons to call up "KGH3", and adjust VOLUME UP/DOWN buttons to set "KGH3" as a larger data. If the cursor is off the field center, press AV button to call up "START VALUE", then press VOLUME UP/DOWN buttons to return the cursor to the original position.
  - e "COUNTUP" Setting
    - i Press and hold AV button till "COUNTUP" appears, and press VOLUME UP/DOWN buttons to make crosshatch signal basically be straight in the V/H direction. (The recommended COUNTUP data: PAL 3D, and NTSC 3D).
- III Coarse-adjustment of convergence in green
- Press PICTURE MODE SELECTION button till "DCRH" appears, then press POSITION UP/DOWN buttons to select coarse adjustment order as follows:
- i Trim horizontal skew in green (KGH3).
  - ii Trim green horizontal pincushion distortion (KGH1)
  - iii Trim green horizontal amplitude (KGH2).
  - iv Trim green field pincushion distortion (KGV2).
  - v Trim field keystone distortion (KGV1).
  - vi Trim green field skew (KGV3).
- IV Fine-adjustment of convergence in green
- a Press PICTURE MODE SELECTION button to call up "FINE MODE", press SWAP button to turn the cursor into green. Press DIGIT SELECTION button to select the point or line adjustment. Press MUTE button to move or fix the cursor: (When OSD is "POINT MOVE" or "LINE MOVE", press VOLUME UP/DOWN or POSITION UP/DOWN buttons to move the cursor up, down, left and right. When OSD is "POINT LOCK" or "LINE LOCK", press VOLUME UP/DOWN or POSITION UP/DOWN buttons to adjust the dot or line data).

Notes:

- In the process of fine adjustment, the cursor will change into 3 colors automatically. Press MUTE button after adjusting a data, the cursor will return to original color.
- It is recommended to perform trimming fine errors from the center of the screen toward outside area in circumference in accordance with such an order as whirlpool-shape. In other word, at first, trim fine error at the point of H#4/V#4 of the screen center, next trim each fine point in circumference around outside of the 8 points, then trim other points in the same way.

- If adjusting one point to increase fine error of nearby ones, which are not adjusted, you should adjust the data at your target point to make the error of nearby ones in the permissible range. Otherwise the fine adjustment data of nearby point might not meet the requirement even if the data reaches maximum.
  - You can save the adjusted data by pressing MENU button. When OSD displays "DATA OK", the data is saving, and when " DATA OK" disappears, it indicates the saving is complete.
  - When adjusting the parameters of coarse and fine adjustment in green, it will activate the convergence of the other two guns at the same time.
- V Adjustment of convergence in red
- a In convergence mode, press DISPLAY button to switch crosshatch state into red and green.
    - i Adjustment of static convergence in red, adjust "DCRH" and "DCRV" of coarse adjustment convergence, so that superimpose the center of line-field in red with center of line-field in green.
    - ii Trim horizontal skew in red (KRH2)
    - iii Trim horizontal linearity distortion in red (KRH1)
    - iv Trim horizontal amplitude in red (KRH3)
    - v Trim field keystone in red (KRV1)
    - vi Trim field skew in red (KRV2)
    - vii Adjusting procedures of fine adjustment data in red is the same as that in green, but crosshatch on the screen is yellow.
- VI Adjustment of convergence in blue
- a In convergence state, press DISPLAY button so that crosshatches in red and blue appear on the screen, and press PIP button to make the cursor become blue.
  - b Adjustment of static convergence in blue. Press and hold PICTURE NODE SELECTION button until "DCBH" appears, Press POSITION UP/DOWN buttons to call up "DCBH" and "DCBV", and press VOLUME UP/ DOWN buttons to position the line-field center of convergence in blue at the center of screen.
  - c Trim horizontal skew in blue (KBH2),
  - d Trim horizontal linearity distortion in blue (KBH1).
  - e Trim horizontal amplitude in blue (KBH3).
  - f Trim field keystone in blue (KBVI).
  - g Trim field skew in blue (KBV2).
- VII Saving
- a Press MENU button to save the adjusted data.
  - b Press STILL/MOVABLE PICTURE ADJUSTMENT button to copy the adjusted data to the corresponding mode of DVD.

#### **CONVERGENCE ADJUSTMENT IN OTHER MODES**

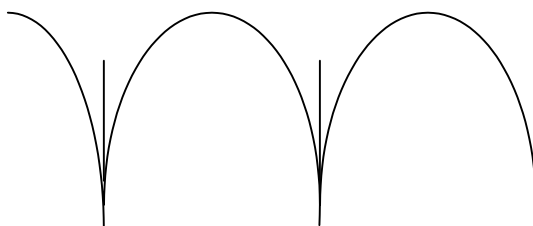
Repeat the above-mentioned procedures for NTSC and VGA.

#### **CONVERGENCE ADJUSTMENT IN DVD MODE**

In DVD mode, it requires fine trimming PAL and NTSC.

**ADJUSTMENT OF DYNAMIC FOCUS**

1. In convergence adjustment mode, press AV button to call up "HDF PHASE", and adjust it to be a proper data (usually a smaller data).
2. Connect oscilloscope to the 7th foot on convergence board XS507. Press PICTURE MODE SELECTION button to call up "DCRH", and POSITION UP/DOWN buttons to "KDFI". Make horizontal parabola waveform 0 by pressing VOLUME UP/DOWN buttons. Press AV button to call up "KDF2" and press VOLUME UP/DOWN buttons to adjust the range of field parabola waveform till the desired picture is obtained. The following is the wave-form of field dynamic focus:



## 6. I<sup>2</sup>C – bus Data

**Table of Adjustment Parameters**

|      | <b>PAL(TV)</b> | <b>PAL(AV)</b> | <b>PAL(DVD)</b> | <b>NTSC(TV)</b> | <b>NTSC(AV)</b> | <b>NTSC(DVD)</b> | <b>VGA</b> |
|------|----------------|----------------|-----------------|-----------------|-----------------|------------------|------------|
| MIF  | 3F             |                | 3F              |                 |                 |                  |            |
| MAG  | 16             |                | 16              |                 |                 |                  |            |
| MYFP | 07             |                | MYFN 08         |                 |                 |                  |            |
| MYG  | 00             | 00             | 00              | 00              |                 |                  | 00         |
| XTAL | 09             | 09             | 09              | 09              | 09              | 09               | 09         |
| TYD  | 04             | 04             | 04              | 04              | 04              | 04               | 04         |
| TVG  | 25             | 25             | 25              | 25              | 25              | 25               | 25         |
| TDS  | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| TDSA | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| TDSW | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| TDSS | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| TGEG | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| TGEW | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| TGES | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| TBSG | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| TBSS | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| TABS | 20             | 20             | 20              | 20              | 20              | 20               | 20         |
| TNLG | 20             | 20             | 20              | 20              | 20              | 20               | 20         |
| TS   | 30             | 30             | 30              | 30              | 30              | 30               | 30         |
| TLW  | OA             | OA             | OA              | OA              | OA              | OA               | OA         |
| TCTI | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| COON | 30             | 30             | 30              | 30              | 30              | 30               | 30         |
| HCDL | 04             | 04             | 04              | 04              | 04              | 04               | 04         |
| HSCL | 02             | 02             | 02              | 02              | 02              | 02               | 02         |
| HPWL | 08             | 08             | 08              | 08              | 08              | 08               | 08         |
| HAKB | 00             | 00             | 00              | 00              | 00              | 00               | 00         |
| HWPR | 16             | 16             | 16              | 16              | 16              | 16               | 16         |
| HWPG | 30             | 30             | 30              | 30              | 30              | 30               | 30         |
| HWPB | 32             | 32             | 32              | 32              | 32              | 32               | 32         |
| HBOR | 03             | 03             | 03              | 03              | 03              | 03               | 03         |
| HBOG | 06             | 06             | 06              | 06              | 06              | 06               | 06         |
| HBLU | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| HBLA | 01             | 01             | 01              | 01              | 01              | 01               | 01         |
| MCON | 30             | 30             | 30              | 30              | 30              | 30               | 30         |

|      | <b>PAL<br/>(TV)</b> | <b>PAL<br/>(AV)</b> | <b>PAL<br/>(DVD)</b> | <b>NTSC<br/>(TV)</b> | <b>NTSC<br/>(AV)</b> | <b>NTSC<br/>(DVD)</b> | <b>VGA</b> |
|------|---------------------|---------------------|----------------------|----------------------|----------------------|-----------------------|------------|
| PVSL | 23                  | 23                  | 23                   | QVSL 24              | QVSL 24              | QVSL 24               | VVA 0D     |
| PVA  | 12                  | 12                  | 12                   | QVA 16               | QVA 16               | QVA 16                | VVS 20     |
| PVS  | 20                  | PVS 20              | 20                   | QSC 14               | QSC 14               | QSC 14                | VSC 14     |
| PSC  | 14                  | PSC 04              | 04                   | QVS 20               | QVS 20               | QVS 20                | VVZ 19     |
| PVZ  | 19                  | PVZ 19              | 19                   | QVZ 19               | QVZ 19               | QVZ 19                | VVC IF     |
| PVC  | IF                  | IF                  | IF                   | QVC IF               | QVC IF               | QVC IF                | VVW 16     |
| PVW  | 16                  | 16                  | 16                   | QVW 16               | QVW 16               | QVW 16                | VEWW 21    |
| PEWW | 24                  | 24                  | 24                   | QEW 28               | QEW 28               | QEW 28                | VSLB 08    |
| PSLB | 08                  | 08                  | 08                   | QSLB 08              | QSLB 08              | QSLB 08               | VHS 20     |
| PHS  | 20                  | 20                  | 20                   | QHS 20               | QHS 20               | QHS 20                | VEWP IB    |
| PEWP | 21                  | 21                  | 21                   | QEWP 20              | QEWP 20              | QEWP 20               | VEWC 25    |
| PEWC | IF                  | IF                  | IF                   | QEWC 15              | QEWC 15              | QEWC 15               | VEWL 0D    |
| PEWL | 23                  | 23                  | 23                   | QEWL 1D              | QEWL 1D              | QEWL 1D               | WEWT 33    |
| PEWT | 31                  | 31                  | 31                   | QEWT 2 D             | QEWT 2 D             | QEWT 2 D              | VHP 06     |
| PHP  | 06                  | 06                  | 06                   | QHP 0A               | QHP 0A               | QHP 0A                | VHB 08     |
| PHB  | 0C                  | 0C                  | 0C                   | QHB 0A               | QHB 0A               | QHB 0A                | VEWE 28    |
| PEWE | 28                  | 08                  | 08                   | QEWE 28              | QEWE 28              | QEWE 28               | N/A        |
| OH   | 06                  | 06                  | 06                   | OH 06                | OH 06                | OH 06                 | OH 06      |
| POV  | 04                  | 04                  | 04                   | QOV 04               | QOV 04               | QOV 04                | QOU 06     |
| DIMO | 00                  | 00                  | 00                   | 00                   | 00                   | 00                    | 00         |
| OP1  | FC                  | FC                  | FC                   | FC                   | FC                   | FC                    | FC         |
| OP2  | 6A                  | 6A                  | 6A                   | 6A                   | 6A                   | 6A                    | 6A         |
| SPNI | 02                  | N/A                 | N/A                  | 02                   | N/A                  | N/A                   | N/A        |
| SPSC | 01                  | N/A                 | N/A                  | 01                   | N/A                  | N/A                   | N/A        |
| SSCH | 02                  | N/A                 | N/A                  | 02                   | N/A                  | N/A                   | N/A        |
| SFM1 | 05                  | N/A                 | N/A                  | 05                   | N/A                  | N/A                   | N/A        |
| SFM2 | 01                  | N/A                 | N/A                  | 01                   | N/A                  | N/A                   | N/A        |
| SUBV | 25                  | 25                  | 25                   | 25                   | 25                   | 25                    | 25         |
| SUVM | 4A                  | 4A                  | 4A                   | 4A                   | 4A                   | 4A                    | 4A         |
| SUBB | 1C                  | 1C                  | 1C                   | 1C                   | 1C                   | 1C                    | 1C         |
| SUBM | 2C                  | 2C                  | 2C                   | 2C                   | 2C                   | 2C                    | 2C         |
| SUBC | 25                  | 25                  | 25                   | 25                   | 25                   | 25                    | 25         |
| SUCM | 3F                  | 3F                  | 3F                   | 3F                   | 3F                   | 3F                    | 3F         |
| SCOL | 20                  | 20                  | 20                   | 20                   | 20                   | 20                    | 20         |
| SPLL | 14                  | 14                  | 14                   | 14                   | 14                   | 14                    | 14         |
| PALS | 92                  | 92                  | 92                   | NASL 8C              | NASL 8C              | NASL 8C               | N/A        |
| PHSP | 46                  | 46                  | 46                   | NHSP 50              | NHSP 50              | NHSP 50               | N/A        |
| PHSP | 46                  | 46                  | 46                   |                      |                      |                       | N/A        |
| PHBP | 46                  | 46                  | 46                   | NHBP 40              | NHBP 40              | NHBP 40               | N/A        |
| PHAP | AF                  | AF                  | AF                   | NHAP AF              | NHAP AF              | NHAP AF               | N/A        |
| PVSP | 04                  | 04                  | 04                   | NVSP 04              | NVSP 04              | NVSP 04               | N/A        |
| PVBP | IF                  | IF                  | IF                   | NVBP 16              | NVBP 16              | NVBP 16               | N/A        |
| PVAP | 78                  | 78                  | 78                   | NVAP 79              | NVAP 79              | NVAP 79               | N/A        |
| RE80 | 06                  | 06                  | 06                   | 06                   | 06                   | 06                    | 06         |
| RE81 | 10                  | 10                  | 10                   | 10                   | 10                   | 10                    | 10         |
| RE82 | 20                  | 20                  | 20                   | 20                   | 20                   | 20                    | 20         |
| RE83 | 40                  | 40                  | 40                   | 40                   | 40                   | 40                    | 40         |
| RE84 | 56                  | 56                  | 56                   | 56                   | 56                   | 56                    | 56         |
| RE85 | 60                  | 60                  | 60                   | 60                   | 60                   | 60                    | 60         |
| RE86 | 76                  | 76                  | 76                   | 76                   | 76                   | 76                    | 76         |
| RE8D | 05                  | 05                  | 05                   | 05                   | 05                   | 05                    | 05         |
| RE8E | 09                  | 09                  | 09                   | 09                   | 09                   | 09                    | 09         |
| RE8F | 03                  | 03                  | 03                   | 03                   | 03                   | 03                    | 03         |

|                |     |     |         |         |         |          |     |
|----------------|-----|-----|---------|---------|---------|----------|-----|
| TIME           | OA  | OA  | OA      | OA      | OA      | NLSD, 2E | OA  |
| DCTI           | F8  | F8  | F8      | F8      | F8      | NDHS, 2S | F8  |
| SAT            | 46  | 46  | 46      | 46      | 46      | TIME, 0A | 46  |
| PVSD           | 00  | 00  | 00      | NVSD 00 | NVSD 00 | NVSD 00  | N/A |
| MVA            | 12  | 12  | 12      | 12      | 12      | 12       | 12  |
|                |     |     | PLSD 38 | N/A     | N/A     | DCTI, F8 | N/A |
|                |     |     | PDHS 22 | N/A     | N/A     | SAT, 46  | N/A |
| VISTART        | 0   | 1   | 1       | 1       | 1       | 1        | 1   |
| VICOVNT<br>UP  | 31  | 30  | 30      | 30      | 30      | 30       | 30  |
| STARTLI<br>NES | 7   | 57  | 57      | 57      | 57      | 57       | 57  |
| PINEPHA<br>SE  | 207 | 208 | 208     | 205     | 208     | 207      | 208 |
| COARPH<br>ASE  | 18  | 18  | 18      | 18      | 18      | 18       | 18  |
| HDF<br>PHASE   | 42  | 4   | 4       | 19      | 4       | 19       | 19  |
| TEST<br>PHASE  | 69  | 68  | 68      | 75      | 68      | 69       | 68  |

Note:

Items with “V” are adjustable, and the parameters are subject to individual TV. Do not change parameters of items without “V”.

## 7. Parts List & Replacement Parts List

| POSITION | NAME                 | TYPE                   |
|----------|----------------------|------------------------|
| R601     | Carbon film resistor | RT13-0.1.66W-2.2 Ohm J |
| R603     | Carbon film resistor | RT13-0.166W-2.2 Ohm J  |
| R11.0    | Carbon film resistor | RT13-0.166W-27 Ohm J   |
| R151     | Carbon film resistor | RT13-0.166W-47 Ohm J   |
| R152     | Carbon film resistor | RT13-0.166W-47 Ohm J   |
| R104     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R101A    | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R113     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R114     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R120     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R120A    | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R123     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R126     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R127     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R153     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R154     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R155     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R156     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R180     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R181     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R191A    | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R192A    | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R193A    | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R224     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R225     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R234A    | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R237     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R238     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R239     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R240     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R250A    | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R261     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R262     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R508     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R509     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R513     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R514     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R523     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R524     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R525     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R526     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R527     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R528     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R529     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R530     | Carbon film resistor | RT13-0.166W- 100 Ohm J |
| R119     | Carbon film resistor | RT13-0.166W- 180 Ohm J |
| R121A    | Carbon film resistor | RT13-0.166W- 180 Ohm J |
| R254     | Carbon film resistor | RT13-0.166W- 220 Ohm J |
| R116     | Carbon film resistor | RT13-0.166W- 390 Ohm J |
| R124A    | Carbon film resistor | RT13-0.166W- 470 Ohm J |
| R125A    | Carbon film resistor | RT13-0.166W- 470 Ohm J |

| POSITION | NAME                 | TYPE                    |
|----------|----------------------|-------------------------|
| R217     | Carbon film resistor | RT13-0.166W- 470 Ohm J  |
| R218     | Carbon film resistor | RT13-0.166W- 470 Ohm J  |
| R219     | Carbon film resistor | RT13-0.166W- 470 Ohm J  |
| R611A    | Carbon film resistor | RT13-0.166W- 470 Ohm J  |
| R832     | Carbon film resistor | RT13-0.166W- 470 Ohm J  |
| R834     | Carbon film resistor | RT13-0.166W- 470 Ohm J  |
| R836     | Carbon film resistor | RT13-0.166W- 470 Ohm J  |
| R115     | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R135A    | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R136A    | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R157     | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R230     | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R260     | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R510     | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R538     | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R543     | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R555A    | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R591     | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R838     | Carbon film resistor | RT13-0.166W- 1K Ohm J   |
| R108     | Carbon film resistor | RT13-0.166W- 1.2K Ohm J |
| R109     | Carbon film resistor | RT13-0.166W- 1.2K Ohm J |
| R231     | Carbon film resistor | RT13-0.166W- 1.2K Ohm J |
| R232     | Carbon film resistor | RT13-0.166W- 1.2K Ohm J |
| R233     | Carbon film resistor | RT13-0.166W- 1.2K Ohm J |
| R226     | Carbon film resistor | RT13-0.166W- 1.5K Ohm J |
| R105     | Carbon film resistor | RT13-0.166W-2.2K Ohm J  |
| R111     | Carbon film resistor | RT13-0.166W-2.2K Ohm J  |
| R111A    | Carbon film resistor | RT13-0.166W-2.2K Ohm J  |
| R521     | Carbon film resistor | RT13-0.166W-2.2K Ohm J  |
| R607     | Carbon film resistor | RT13-0.166W-2.2K Ohm J  |
| R121     | Carbon film resistor | RT13-0.166W-2.2K Ohm J  |
| R122     | Carbon film resistor | RT13-0.166W-2.2K Ohm J  |
| R198     | Carbon film resistor | RT13-0.166W-2.2K Ohm J  |
| R234     | Carbon film resistor | RT13-0.166W-2.2K Ohm J  |
| R235     | Carbon film resistor | RT13-0.166W-3.3K Ohm J  |
| R241     | Carbon film resistor | RT13-0.166W-3.3K Ohm J  |
| R242     | Carbon film resistor | RT13-0.166W-3.3K Ohm J  |
| R604     | Carbon film resistor | RT13-0.166W-3.9K Ohm J  |
| R605     | Carbon film resistor | RT13-0.166W-3.9K Ohm J  |
| R107     | Carbon film resistor | RT13-0.166W-4.7K Ohm J  |
| R202     | Carbon film resistor | RT13-0.166W-5.6K Ohm J  |
| R227     | Carbon film resistor | RT13-0.166W-5.6K Ohm J  |
| R228     | Carbon film resistor | RT13-0.166W-5.6K Ohm J  |
| R229     | Carbon film resistor | RT13-0.166W-5.6K Ohm J  |
| R112A    | Carbon film resistor | RT13-0.166W-6.8K Ohm J  |
| R522     | Carbon film resistor | RT13-0.166W-6.8K Ohm J  |
| R100A    | Carbon film resistor | RT13-0.166W-10K Ohm J   |
| R112     | Carbon film resistor | RT13-0.166W-10K Ohm J   |
| R201     | Carbon film resistor | RT13-0.166W-10K Ohm J   |
| R201A    | Carbon film resistor | RT13-0.166W-10K Ohm J   |
| R202A    | Carbon film resistor | RT13-0.166W-10K Ohm J   |
| R203     | Carbon film resistor | RT13-0.166W-10K Ohm J   |
| R203A    | Carbon film resistor | RT13-0.166W-10K Ohm J   |
| R207     | Carbon film resistor | RT13-0.166W-10K Ohm J   |

| POSITION | NAME                       | TYPE                    |
|----------|----------------------------|-------------------------|
| R212     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R251     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R251A    | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R252     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R253     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R263     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R266     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R267     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R504     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R531     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R539     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R589     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R590     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R602     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R611     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R612     | Carbon film resistor       | RT13-0.166W-10K Ohm J   |
| R103A    | Carbon film resistor       | RT13-0.166W-12K Ohm J   |
| R124     | Carbon film resistor       | RT13-0.166W-15K Ohm J   |
| R204     | Carbon film resistor       | RT13-0.166W-15K Ohm J   |
| R236     | Carbon film resistor       | RT13-0.166W-15K Ohm J   |
| R595     | Carbon film resistor       | RT13-0.166W-15K Ohm J   |
| R606     | Carbon film resistor       | RT13-0.166W-15K Ohm J   |
| R507     | Carbon film resistor       | RT13-0.166W-22K Ohm J   |
| R609     | Carbon film resistor       | RT13-0.166W-22K Ohm J   |
| R610     | Carbon film resistor       | RT13-0.166W-22K Ohm J   |
| R501     | Carbon film resistor       | RT13-0.166W-27K Ohm J   |
| R505     | Carbon film resistor       | RT13-0.166W-27K Ohm J   |
| R188A    | Carbon film resistor       | RT13-0.166W-33K Ohm J   |
| R205     | Carbon film resistor       | RT13-0.166W-39K Ohm J   |
| R102A    | Carbon film resistor       | RT13-0.166W-47K Ohm J   |
| R250     | Carbon film resistor       | RT13-0.165W-47K Ohm J   |
| R189A    | Carbon film resistor       | RT13-0.166W-68K Ohm J   |
| R125     | Carbon film resistor       | RT13-0.165W-100K Ohm J  |
| R502     | Carbon film resistor       | RT13-0.165W-100K Ohm J  |
| R503     | Carbon film resistor       | RT13-0.165W-100K Ohm J  |
| R511     | Carbon film resistor       | RT13-0.165W-100K Ohm J  |
| R540     | Carbon film resistor       | RT13-0.166W-120K Ohm J  |
| R506     | Carbon film resistor       | RT13-0.166W-150K Ohm J  |
| W204     | Carbon film resistor       | RTB- 1/6W- 10K Ohm J    |
| R541     | Carbon film resistor       | RT13-0.166W-1M Ohm J    |
| R542     | Carbon film resistor       | RT13-0.166W-1M Ohm J    |
| R133A    | Carbon film resistor       | RT13-0.166W-2.2M Ohm J  |
| R512     | Metal film resistor        | RJ14-0.25W-39K Ohm G    |
| RP501    | Glass enamel film resistor | WI06-2Y-0.125W-5K Ohm-A |
| R831     | Direct fuse                | PRF2000F008             |
| R837     | Direct fuse                | PRF2000F008             |
| C526     | Ceramic capacitor          | CC1-63V-06a-C-2PFC      |
| C132     | Ceramic capacitor          | CC1-63V-06a-C-9PFD      |
| C157     | Ceramic capacitor          | CC1-63V-06a-C-18PFG     |
| C160     | Ceramic capacitor          | CC1-63V-06a-C-18PFG     |
| C230     | Ceramic capacitor          | CC1-63V-06a-C-18PFG     |
| C231     | Ceramic capacitor          | CC1-63V-06a-C-18PFG     |
| C523B    | Ceramic capacitor          | CC1-63V-06a-C-18PFG     |
| C569     | Ceramic capacitor          | CC1-63V-06a-C-18PFG     |

| POSITION | NAME                     | TYPE                    |
|----------|--------------------------|-------------------------|
| C126     | Ceramic capacitor        | CC1-63V-06a-C-27PFJ     |
| C127     | Ceramic capacitor        | CC1-63V-06a-C-27PFJ     |
| C207     | Ceramic capacitor        | CC1-63V-06a-C-27PFJ     |
| C208     | Ceramic capacitor        | CC1-63V-06a-C-27PFJ     |
| C512     | Ceramic capacitor        | CC1-63V-06a-C-27PFJ     |
| C513     | Ceramic capacitor        | CC1-63V-06a-C-27PFJ     |
| C537     | Ceramic capacitor        | CC1-63V-06a-C-47PFJ     |
| C123     | Ceramic capacitor        | CC1-63V-06a-SL-100PFK   |
| C130     | Ceramic capacitor        | CC1-63V-10a-SL-330PFK   |
| C536     | Ceramic capacitor        | CT1-63V-06a-2B4-470PFK  |
| C110     | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C112A    | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C117     | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C124     | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C141     | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C165     | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C201K    | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C202K    | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C613     | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C614     | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| VD507    | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| VD508    | Ceramic capacitor        | CT1-63V-06a-2B4-1000PFK |
| C119     | Ceramic capacitor        | CT1-63V-06a-2B4-1500PFK |
| C154     | Ceramic capacitor        | CT1-63V-08a-2B4-3300PFK |
| C162     | Ceramic capacitor        | CT1-63V-10a-2B4-4700PFK |
| C102     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C109     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C112     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C115     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C121     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C122     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C201     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C504     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C504A    | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C542     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C543     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C545     | Ceramic capacitor        | CT1-63V-08a-2F4-10nFZ   |
| C264     | Polyester film capacitor | CL21X-50V-0.033uFJ      |
| C123A    | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C131     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C133     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C136     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C137     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C139     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C140     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C142     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C143     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C153     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C155     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C167     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C168     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C178     | Polyester film capacitor | CL21X-50V-0.1uFJ        |
| C209     | Polyester film capacitor | CL21X-50V-0.1uFJ        |

| POSITION | NAME                             | TYPE              |
|----------|----------------------------------|-------------------|
| C210     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C214     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C215     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C216     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C261     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C263     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C503     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C505     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C506     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C508     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C510     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C511     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C515     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C516     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C517     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C522     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C523     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C524     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C530     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C531     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C532     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C534     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C541     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C544     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C546     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C598     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C608     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C611     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C612     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C617     | Polyester film capacitor         | CL21X-50V-0.1uFJ  |
| C507     | Polyester film capacitor         | 2222-336-76104    |
| C156     | Polyester film capacitor         | CL21X-50V-0.22uFJ |
| C540     | Polyester film capacitor         | CL21X-50V-0.27uFJ |
| C135B    | Polyester film capacitor         | CL21X-50V-0.33uFJ |
| C151     | Polyester film capacitor         | CL21X-50V-0.33uFJ |
| C174     | Polyester film capacitor         | CL21X-50V-0.33uFJ |
| C176     | Polyester film capacitor         | CL21X-50V-0.33uFJ |
| C129     | Aluminium electrolytic capacitor | CD 110-50V-1uFM   |
| C161     | Aluminium electrolytic capacitor | CD 110-50V-1uFM   |
| C602     | Aluminium electrolytic capacitor | CD 110-50V-1uFM   |
| C604     | Aluminium electrolytic capacitor | CD 110-50V-1uFM   |
| C128     | Aluminium electrolytic capacitor | CD 110-50V-2.2uFM |
| C111     | Aluminium electrolytic capacitor | CD 110-50V-10uFM  |
| C166     | Aluminium electrolytic capacitor | CD 110-50V-10uFM  |
| C169     | Aluminium electrolytic capacitor | CD 110-50V-10uFM  |
| C213     | Aluminium electrolytic capacitor | CD 110-50V-10uFM  |
| C250     | Aluminium electrolytic capacitor | CD110-50V-10uFM   |
| C260     | Aluminium electrolytic capacitor | CD 110-16V-33uFM  |
| C609     | Aluminium electrolytic capacitor | CD 110-16V-33uFM  |
| C108     | Aluminium electrolytic capacitor | CD 110-16V-47uFM  |
| C113     | Aluminium electrolytic capacitor | CD 110-16V-47uFM  |
| C125     | Aluminium electrolytic capacitor | CD 110-16V-47uFM  |
| C134     | Aluminium electrolytic capacitor | CD 110-16V-47uFM  |
| C150     | Aluminium electrolytic capacitor | CD 110-16V-47uFM  |

| POSITION | NAME                             | TYPE                |
|----------|----------------------------------|---------------------|
| C152     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C175     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C177     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C202     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C262     | Aluminium electrolytic capacitor | CD 110-16V-100uFM   |
| C502     | Aluminium electrolytic capacitor | CD 110-16V-10uFM    |
| C509     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C533     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C619     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C832     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C833     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C835     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C836     | Aluminium electrolytic capacitor | CD 110-16V-47uFM    |
| C101     | Aluminium electrolytic capacitor | CD 110X-16V-100uFM  |
| C601     | Aluminium electrolytic capacitor | CD 110X-16V-100uFM  |
| C615     | Aluminium electrolytic capacitor | CD 110X-16V-100uFM  |
| C620     | Aluminium electrolytic capacitor | CD 110X-16V-100uFM  |
| C114     | Aluminium electrolytic capacitor | CD 110X-16V-220uFM  |
| C116     | Aluminium electrolytic capacitor | CD 110X-16V-220uFM  |
| C830     | Aluminium electrolytic capacitor | CD 110X-16V-220uFM  |
| C603     | Aluminium electrolytic capacitor | CD 110X-25V-100uFM  |
| C606     | Aluminium electrolytic capacitor | CD 110X-50V-1000uFM |
| C607     | Aluminium electrolytic capacitor | CD81-35V-1000uFM    |
| C610     | Aluminium electrolytic capacitor | CD81-35V-1000uFM    |
| L105     | Fixed inductor                   | COLTRF4229AJ        |
| L106     | Fixed inductor                   | LGA0204-2.2uHJ      |
| L109     | Fixed inductor                   | LGA0204-0.33uHK     |
| W208     | Fixed inductor                   | LGA0307-56uHK       |
| L111     | Fixed inductor                   | LGB0606-1.0uHJ      |
| L113     | Fixed inductor                   | LGB0606-1.0uHJ      |
| L114     | Fixed inductor                   | LGB0606-1.0uHJ      |
| L112     | Fixed inductor                   | LGB0606-2.7uHJ      |
| L110A    | Fixed inductor                   | LGB0606-10uHJ       |
| L115     | Fixed inductor                   | LGB0606-10uHJ       |
| L201     | Fixed inductor                   | LGB0606-10uHJ       |
| L202     | Fixed inductor                   | LGB0606-10uHJ       |
| L203     | Fixed inductor                   | LGB0606-10uHJ       |
| L261     | Fixed inductor                   | LGB0606-10uHJ       |
| L262     | Fixed inductor                   | LGB0606-10uHJ       |
| L110     | Fixed inductor                   | LGB0606-33uHJ       |
| L116     | Fixed inductor                   | LGB0606-33uHJ       |
| L117     | Fixed inductor                   | LGB0606-33uHJ       |
| L118     | Fixed inductor                   | LGB0606-33uHJ       |
| L501     | Fixed inductor                   | LGB0606-33uHJ       |
| L502     | Fixed inductor                   | LGB0606-33uHJ       |
| L103     | Fixed inductor                   | TLN3193-100uHK      |
| L108     | Fixed inductor                   | TLN3040D-330uHK     |
| L181B    | Cored inductor                   | TEM2028K            |
| L182B    | Cored inductor                   | TEM2028K            |
| L183B    | Cored inductor                   | TEM2028K            |
| L184B    | Cored inductor                   | TEM2028K            |
| L185B    | Cored inductor                   | TEM2028K            |
| L186B    | Cored inductor                   | TEM2028K            |

| POSITION | NAME           | TYPE                             |
|----------|----------------|----------------------------------|
| VD101A   | Diode          | 1N4148 (1SS133)                  |
| VD102    | Diode          | 1N4148 (1SS133)                  |
| VD220    | Diode          | 1N4148 (1SS133)                  |
| VD221    | Diode          | 1N4148 (1SS133)                  |
| VD222    | Diode          | 1N4148 (1SS133)                  |
| VD223    | Diode          | 1N4148 (1SS133)                  |
| VD260    | Diode          | 1N4148 (1SS133)                  |
| VD501    | Diode          | 1N4148 (1SS133)                  |
| VD502A   | Diode          | 1N4148 (1SS133)                  |
| VD503    | Diode          | 1N4148 (1SS133)                  |
| VD505    | Diode          | 1N4148 (1SS133)                  |
| VDS10    | Diode          | 1N4148 (1SS133)                  |
| VD511    | Diode          | 1N4148 (1SS133)                  |
| VD531A   | Diode          | 1N4148 (1SS133)                  |
| VD532B   | Diode          | 1N4148 (1SS133)                  |
| VD601    | Diode          | 1N4148 (1SS133)                  |
| VD602    | Diode          | 1N4148 (1SS133)                  |
| VD604    | Diode          | 1N4148 (1SS133)                  |
| VD605    | Diode          | 1N4148 (1SS133)                  |
| VD606    | Diode          | 1N4148 (1SS133)                  |
| VD607    | Diode          | 1N4148 (1SS133)                  |
| VD608    | Diode          | 1N4148 (1SS133)                  |
| VD609    | Diode          | 1N4148 (1SS133)                  |
| VD250    | Diode          | W05Z3.6A                         |
| VD506    | Diode          | W05Z5.6C                         |
| VD831    | Diode          | W05Z5.6C                         |
| VD832    | Diode          | W05Z5.6C                         |
| VD504    | Diode          | W05Z6.8B                         |
| VD834    | Diode          | W05Z9.1B                         |
| VD509    | Diode          | W05Z12A                          |
| V250     | Transistor     | 2SA1015-Y(3CG1015-Y; 2SA933AS,Q) |
| V251     | Transistor     | 2SA1015-Y(3CG1015-Y; 2SA933AS,Q) |
| V502     | Transistor     | 2SA1015-Y(3CG1015-Y; 2SA933AS,Q) |
| V503     | Transistor     | 2SA1015-Y(3CG1015-Y; 2SA933AS,Q) |
| V612     | Transistor     | 2SA1015-Y(3CG1015-Y; 2SA933AS,Q) |
| V102     | Transistor     | 2SC1815-Y(3DG1815-Y; 2SC1740S,Q) |
| V103     | Transistor     | 2SC1815-Y(3DG1815-Y; 2SC1740S,Q) |
| V103A    | Transistor     | 2SC1815-Y(3DG1815-Y; 2SC1740S,Q) |
| V104     | Transistor     | 2SC1815-Y(3DG1815-Y; 2SC1740S,Q) |
| V104A    | Transistor     | 2SC1815-Y(3DG1815-Y; 2SC1740S,Q) |
| V201     | Transistor     | 2SC1815-Y(3DG1815-Y; 2SC1740S,Q) |
| V101     | Transistor     | 2SC388ATM(KSC388C-Y; 3D388ATM)   |
| V504     | Transistor     | RN1204                           |
| V601     | Transistor     | RN1204                           |
| V602     | Transistor     | RN1204                           |
| V671     | Transistor     | 2SC2878-A                        |
| V672     | Transistor     | 2SC2878-A                        |
| V831     | Transistor     | 2SC3852(2SD 1944H)               |
| V832     | Transistor     | 2SC3852(2SD 1944H)               |
| V833     | Transistor     | 2SC3852(2SD 1944H)               |
| Z111     | Ceramic filter | TPS4.5MB                         |
| Z112     | Ceramic filter | TPS5.5MB                         |
| Z113     | Ceramic filter | TPS6.0MB                         |
| Z114     | Ceramic filter | TPS6.5MB                         |

| POSITION | NAME                 | TYPE                          |
|----------|----------------------|-------------------------------|
| G108     | Crystal oscillator   | JA18A1-3.579545MHZ            |
| G105     | Crystal oscillator   | JA18A1-4.433419MHZ            |
| G202     | Crystal oscillator   | JA18A-4.00MHZ                 |
| G201     | Crystal oscillator   | JA18A-12.000MHZ (KL120005ACZ) |
| G501     | Crystal oscillator   | JA18A-12.000MHZ (KL120005ACZ) |
| T101     | IF transformer       | ST6022                        |
| Z001     | SAWF                 | K6286K                        |
| Z002     | SAWF                 | K9252M                        |
| U002     | Tuner                | ENV59D29G3                    |
| N002     | Integrated circuit   | P87C766BDR/03                 |
| N012     | Integrated circuit   | PCA8516P/036                  |
| N003     | Integrated circuit   | TDA9181P/NIB                  |
| N006     | Integrated circuit   | TDA8200AH                     |
| N005     | Integrated circuit   | TDA9332H(2Y)                  |
| N001     | Integrated circuit   | TDA9321H(2Y)                  |
| VD110    | Integrated circuit   | uPC574J(CW574CS)              |
| N011     | Integrated circuit   | AT24C16                       |
| N010     | Integrated circuit   | 74HC157N                      |
| N007     | Integrated circuit   | HEF4052BP                     |
| N008     | Integrated circuit   | 74HCT4538N                    |
| N009     | Integrated circuit   | 74HCT4538N                    |
| N004     | Integrated circuit   | TDA9178                       |
| N834     | Integrated circuit   | SI-3090CA                     |
| R411     | Carbon film resistor | RT13-0.166W-56 Ohm J          |
| R373     | Carbon film resistor | RT13-0.166W-100 Ohm J         |
| R374     | Carbon film resistor | RT13-0.166W-100 Ohm J         |
| R484     | Carbon film resistor | RT13-0.166W-100 Ohm J         |
| R501     | Carbon film resistor | RT13-0.166W-100 Ohm J         |
| R502     | Carbon film resistor | RT13-0.166W-100 Ohm J         |
| R503     | Carbon film resistor | RT13-0.166W-100 Ohm J         |
| R504     | Carbon film resistor | RT13-0.166W-100 Ohm J         |
| R505     | Carbon film resistor | RT13-0.166W-100 Ohm J         |
| R506     | Carbon film resistor | RT13-0.166W-100 Ohm J         |
| R482     | Carbon film resistor | RT13-0.166W-560 Ohm J         |
| R579     | Carbon film resistor | RT13-0.166W-680 Ohm J         |
| R565     | Carbon film resistor | RT13-0.166W- 1.5K Ohm J       |
| R466     | Carbon film resistor | RT13-0.166W- 1.8K Ohm J       |
| R561     | Carbon film resistor | RT13-0.166W-5.6K Ohm J        |
| R562     | Carbon film resistor | RT13-0.166W-5.6K Ohm J        |
| R563     | Carbon film resistor | RT13-0.166W-5.6K Ohm J        |
| R578     | Carbon film resistor | RT13-0.166W-5.6K Ohm J        |
| R564     | Carbon film resistor | RT13-0.166W-1K Ohm J          |
| R317     | Carbon film resistor | RT13-0.166W-10K Ohm J         |
| R320     | Carbon film resistor | RT13-0.166W-10K Ohm J         |
| R576     | Carbon film resistor | RT13-0.166W-18K Ohm J         |
| R577     | Carbon film resistor | RT13-0.166W- 18K Ohm J        |
| R464     | Carbon film resistor | RT13-0.166W-27K Ohm J         |
| R473     | Carbon film resistor | RT13-0.166W-33K Ohm J         |
| R472     | Carbon film resistor | RT13-0.166W-100K Ohm J        |
| R481     | Carbon film resistor | RT13-0.166W-270K Ohm J        |
| R399     | Carbon film resistor | RT13-0.166W-620K Ohm J        |
| R314     | Carbon film resistor | RT13-0.166W-1M Ohm J          |
| R315     | Carbon film resistor | RT13-0.166W-1M Ohm J          |
| R508     | Carbon film resistor | RT14-0.25W-560 Ohm J          |

| POSITION | NAME                      | TYPE                  |
|----------|---------------------------|-----------------------|
| R511     | Carbon film resistor      | RT14-0.25W-560 Ohm J  |
| R515     | Carbon film resistor      | RT14-0.25W-560 Ohm J  |
| R529     | Carbon film resistor      | RT14-0.25W-560 Ohm J  |
| R532     | Carbon film resistor      | RT14-0.25W-560 Ohm J  |
| R536     | Carbon film resistor      | RT14-0.25W-560 Ohm J  |
| R573     | Carbon film resistor      | RT14-0.25W-2.2K Ohm J |
| R507     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R509     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R510     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R512     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R513     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R514     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R528     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R530     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R531     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R533     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R534     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R535     | Carbon film resistor      | RT14-0.25W-3.3K Ohm J |
| R450     | Metal oxide film resistor | RY21-0.5W-1.2 Ohm J   |
| R429     | Metal oxide film resistor | RY21-0.5W-56 Ohm J    |
| R549     | Metal oxide film resistor | RY21-0.5W-100 Ohm J   |
| R550     | Metal oxide film resistor | RY21-0.5W-100 Ohm J   |
| R559     | Metal oxide film resistor | RY21-0.5W-100 Ohm J   |
| R560     | Metal oxide film resistor | RY21-0.5W-100 Ohm J   |
| R461     | Metal oxide film resistor | RY21-0.5W-1.8K Ohm J  |
| R480     | Metal oxide film resistor | RY21-0.5W-2.7K Ohm J  |
| R460     | Metal oxide film resistor | RY21-0.5W-3.3K Ohm J  |
| R382     | Metal oxide film resistor | RY21-0.5W-10K Ohm J   |
| R471     | Metal oxide film resistor | RY21-0.5W-10M Ohm J   |
| R370     | Metal oxide film resistor | RY21-1W-1 Ohm J       |
| R380     | Metal oxide film resistor | RY21-1W-1 Ohm J       |
| R376     | Metal oxide film resistor | RY21-1W-1 Ohm J       |
| R377     | Metal oxide film resistor | RY21-1W-1.2 Ohm J     |
| L410     | Metal oxide film resistor | RY21-1W-10 Ohm J      |
| R469     | Metal oxide film resistor | RY21-1W-15 Ohm J      |
| R371     | Metal oxide film resistor | RY21-1W-33 Ohm J      |
| R415     | Metal oxide film resistor | RY21-1W-560 Ohm J     |
| R491     | Metal oxide film resistor | RY21-1W-560 Ohm J     |
| R492     | Metal oxide film resistor | RY21-1W-560 Ohm J     |
| R493     | Metal oxide film resistor | RY21-1W-560 Ohm J     |
| R451     | Metal oxide film resistor | RJ20-1W-51K Ohm J     |
| R553     | Fusing resistor           | PRF5000F008           |
| R556     | Fusing resistor           | PRF5000F008           |
| R470     | Fusing resistor           | RF11-2W-1 Ohm J       |
| R381     | Metal oxide film resistor | RY21-2W-2.2 Ohm J     |
| R463     | Metal oxide film resistor | RY21-2W-2.2 Ohm J     |
| R519     | Metal oxide film resistor | RY21-2W-2.2 Ohm J     |
| R522     | Metal oxide film resistor | RY21-2W-2.2 Ohm J     |
| R525     | Metal oxide film resistor | RY21-2W-2.2 Ohm J     |
| R537     | Metal oxide film resistor | RY21-2W-2.2 Ohm J     |
| R540     | Metal oxide film resistor | RY21-2W-2.2 Ohm J     |
| R543     | Metal oxide film resistor | RY21-2W-2.2 Ohm J     |
| R571     | Metal oxide film resistor | RY21-2W-47 Ohm J      |

| POSITION | NAME                      | TYPE                     |
|----------|---------------------------|--------------------------|
| R571A    | Metal oxide film resistor | RY21-2W-47 Ohm J         |
| R378     | Metal oxide film resistor | RY21-2W-110 Ohm J        |
| R516     | Metal oxide film resistor | RY21-2W-110 Ohm J        |
| R517     | Metal oxide film resistor | RY21-2W-110 Ohm J        |
| R518     | Metal oxide film resistor | RY21-2W-110 Ohm J        |
| R546     | Metal oxide film resistor | RY21-2W-110 Ohm J        |
| R547     | Metal oxide film resistor | RY21-2W-110 Ohm J        |
| R548     | Metal oxide film resistor | RY21-2W-110 Ohm J        |
| R441     | Metal oxide film resistor | RY21-2W-560 Ohm J        |
| R442     | Metal oxide film resistor | RJ20-2W-10K Ohm J        |
| R417     | Wire-wound resistor       | RXG6-H2-5W-100 Ohm J     |
| C503     | Ceramic capacitor         | CC1-63V-06a-SL-22PFJ     |
| C509     | Ceramic capacitor         | CC1-63V-06a-SL-22PFJ     |
| C515     | Ceramic capacitor         | CC1-63V-06a-SL-22PFJ     |
| C521     | Ceramic capacitor         | CC1-63V-06a-SL-22PFJ     |
| C528     | Ceramic capacitor         | CC1-63V-06a-SL-22PFJ     |
| C545     | Ceramic capacitor         | CC1-63V-06a-SL-22PFJ     |
| C501     | Ceramic capacitor         | CC1-63V-06a-SL-100PFJ    |
| C504     | Ceramic capacitor         | CC1-63V-06a-SL-100PFJ    |
| C510     | Ceramic capacitor         | CC1-63V-06a-SL-100PFJ    |
| C519     | Ceramic capacitor         | CC1-63V-06a-SL-100PFJ    |
| C522     | Ceramic capacitor         | CC1-63V-06a-SL-100PFJ    |
| C547     | Ceramic capacitor         | CC1-63V-06a-SL-100PFJ    |
| C502     | Ceramic capacitor         | CC1-63V-12a-SL-680PFJ    |
| C508     | Ceramic capacitor         | CC1-63V-12a-SL-680PFJ    |
| C516     | Ceramic capacitor         | CC1-63V-12a-SL-680PFJ    |
| C520     | Ceramic capacitor         | CC1-63V-12a-SL-680PFJ    |
| C529     | Ceramic capacitor         | CC1-63V-12a-SL-680PFJ    |
| C546     | Ceramic capacitor         | CC1-63V-12a-SL-680PFJ    |
| C375     | Ceramic capacitor         | CT1-63V-06a-2B4-1000PFZ  |
| C376     | Ceramic capacitor         | CT1-63V-06a-2B4-1000PFZ  |
| C377     | Ceramic capacitor         | CT1-63V-06a-2B4-1000PFZ  |
| C378     | Ceramic capacitor         | CT1-63V-08a-2F4-10nFZ    |
| C417     | Ceramic capacitor         | CT1-500V-06c-2B4-390PFK  |
| C383     | Ceramic capacitor         | CT1-500V-06c-2B4-470PFK  |
| C384     | Ceramic capacitor         | CT1-500V-06c-2B4-470PFK  |
| C497     | Ceramic capacitor         | CT1-500V-06c-2B4-470PFK  |
| C413     | Ceramic capacitor         | CT1-500V-12c-2B4-3300PFK |
| C463     | Ceramic capacitor         | CT1-500V-14c-2B4-3900PFK |
| C499     | Ceramic capacitor         | CT81-2KV-08c-2B4-220PFK  |
| C410     | Ceramic capacitor         | CT81-2KV-12c-2C1-680PFK  |
| C495     | Ceramic capacitor         | CT81-2KV-12c-2C1-680PFK  |
| C496     | Ceramic capacitor         | CT81-2KV-12c-2C1-680PFK  |
| C478     | Ceramic capacitor         | CT81-2KV-12c-2R4-1500PFK |
| C532     | Polyester film capacitor  | CL21X-50V-0.01uFJ        |
| C533     | Polyester film capacitor  | CL21X-50V-0.01uFJ        |
| C537     | Polyester film capacitor  | CL21X-50V-0.01uFJ        |
| C539     | Polyester film capacitor  | CL21X-50V-0.01uFJ        |
| C541     | Polyester film capacitor  | CL21X-50V-0.01uFJ        |
| C401     | Polyester film capacitor  | CL21X-50V-0.022uFJ       |
| C316     | Polyester film capacitor  | CL21X-50V-0.039uFJ       |
| C372     | Polyester film capacitor  | CL21X-50V-0.1uFJ         |
| C374     | Polyester film capacitor  | CL21X-50V-0.1uFJ         |

| POSITION | NAME                             | TYPE                   |
|----------|----------------------------------|------------------------|
| C512     | Polyester film capacitor         | CL21X-50V-0.1uFJ       |
| C514     | Polyester film capacitor         | CL21X-50V-0.1uFJ       |
| C517     | Polyester film capacitor         | CL21X-50V-0.1uFJ       |
| C518     | Polyester film capacitor         | CL21X-50V-0.1uFJ       |
| C527     | Polyester film capacitor         | CL21X-50V-0.1uFJ       |
| C530     | Polyester film capacitor         | CL21X-50V-0.1uFJ       |
| C531     | Polyester film capacitor         | CL21X-50V-0.1uFJ       |
| C542     | Polyester film capacitor         | CL21X-50V-0.1uFJ       |
| C548     | Polyester film capacitor         | CL21X-50V-0.1uFJ       |
| C320     | Polyester film capacitor         | CL21X-50V-0.27uFJ      |
| C381     | Polyester film capacitor         | CL12-100V-0.047uFJ     |
| C445     | Polypropylene capacitor          | CBB 13-200V-0.047uFJ   |
| C451     | Polypropylene capacitor          | CBB 13-400V-0.033uFJ   |
| C423     | Polypropylene capacitor          | CBB 13-400V-0.033uFJ   |
| C442     | Polypropylene capacitor          | CBB 13-400V-0.12uFJ    |
| C443     | Polypropylene capacitor          | CBB 13-400V-0.12uFJ    |
| C450     | Polypropylene capacitor          | CBB 13-400V-0.3uFJ     |
| C466     | Polypropylene capacitor          | CBB 13-630V-8200PFJ    |
| C400     | Polypropylene capacitor          | CF99M4Z102KB           |
| C440     | Polypropylene capacitor          | CBB81-1.6KV-1500PFJ    |
| C461     | Polypropylene capacitor          | CBB81-1.6KV-1500PFJ    |
| C439     | Polypropylene capacitor          | CBB81-1.6KV-2400PFJ    |
| C444     | Polypropylene capacitor          | CBB81-1.6KV-3000PFJ    |
| C477     | Aluminium electrolytic capacitor | CD 110X-16V-47uFM      |
| C540     | Aluminium electrolytic capacitor | CD 110X-16V-47uFM      |
| C371     | Aluminium electrolytic capacitor | CD 110X-35V-100uFM     |
| C386     | Aluminium electrolytic capacitor | CD 110X-35V-100uFM     |
| C416     | Aluminium electrolytic capacitor | CD 110X-35V-100uFM     |
| C559     | Aluminium electrolytic capacitor | CD 110X-35V-100uFM     |
| C385     | Aluminium electrolytic capacitor | CD 288H-35V-2200uFQ    |
| C544     | Aluminium electrolytic capacitor | CD 110-16V-10uFM       |
| C560     | Aluminium electrolytic capacitor | CD 110-50V-0.47uFM     |
| C535     | Aluminium electrolytic capacitor | CD 110-50V-47uFM       |
| C538     | Aluminium electrolytic capacitor | CD 110-50V-47uFM       |
| C534     | Aluminium electrolytic capacitor | CD 110X-50V-100uFM     |
| C536     | Aluminium electrolytic capacitor | CD 110X-50V-100uFM     |
| C460     | Aluminium electrolytic capacitor | CD 110X-50V-330uFM     |
| C555     | Aluminium electrolytic capacitor | CD 110-63V-10uFM       |
| C556     | Aluminium electrolytic capacitor | CD 110-63V-10uFM       |
| C557     | Aluminium electrolytic capacitor | CD 110-63V-10uFM       |
| C558     | Aluminium electrolytic capacitor | CD 110-63V-10uFM       |
| C373     | Aluminium electrolytic capacitor | CD 110X-100V-47uFM     |
| C464     | Aluminium electrolytic capacitor | CDS-100V-10uFM         |
| C382     | Aluminium electrolytic capacitor | CD110-100V-330uFM      |
| C448     | Aluminium electrolytic capacitor | CD288H-160V-33uFM      |
| C446     | Aluminium electrolytic capacitor | CD81-250V-33uFM        |
|          |                                  |                        |
| L381     | Fixed inductor                   | LGB0606-33uHJ          |
| L442     | Fixed inductor                   | TLN3329 (JUB4.757.003) |
| L461     | Fixed inductor                   | TLN3329 (JUB4.757.004) |
| L401     | Cored inductor                   | TEM2011                |
| L402     | Cored inductor                   | TEM2011                |

| POSITION | NAME                          | TYPE                         |
|----------|-------------------------------|------------------------------|
| L403     | Cored inductor                | TEM2011                      |
| L404     | Cored inductor                | TEM2011                      |
| L449     | Cored inductor                | TEM2011                      |
| L470     | Cored inductor                | TEM2011                      |
| L501     | Cored inductor                | TEM2011                      |
| L502     | Cored inductor                | TEM2011                      |
| L503     | Cored inductor                | TEM2011                      |
| L504     | Cored inductor                | TEM2011                      |
| L505     | Cored inductor                | TEM2011                      |
| L506     | Cored inductor                | TEM2011                      |
| L441     | Horizontal linear coil        | HXT10 (JUB4.756.016, DP5188) |
| L441     | Horizontal linear coil        | HXT15 (JUB4.756.021, DP4388) |
| L443     | Horizontal amplitude inductor | LGT-30uH (JUB4.757.037)      |
| VD306    | Diode                         | 2CK75D (1N4148)              |
| VD463    | Diode                         | 2CK75D (1N4148)              |
| VD502    | Diode                         | 2CK75D (1N4148)              |
| VD503    | Diode                         | 2CK75D (1N4148)              |
| VD504    | Diode                         | 2CK75D (1N4148)              |
| VD506    | Diode                         | 2CK75D (1N4148)              |
| VD510    | Diode                         | 2CK75D (1N4148)              |
| VD450    | Diode                         | 1S1887                       |
| VD467    | Diode                         | 2SC1887                      |
| VD487    | Diode                         | 2SC1887                      |
| VD488    | Diode                         | 2SC1887                      |
| VD370    | Diode                         | EU2A                         |
| VD371    | Diode                         | EU2A                         |
| VD406    | Diode                         | 2CZRU2                       |
| VD460    | Diode                         | TVR-1B                       |
| VD465    | Diode                         | W05Z3.6B                     |
| VD466    | Diode                         | W05Z3.6B                     |
| VD468    | Diode                         | W05Z3.6B                     |
| VD507    | Diode                         | W05Z6.2B                     |
| VD508    | Diode                         | W05Z6.2B                     |
| YD464    | Diode                         | W05Z11B                      |
| VD509    | Diode                         | W05Z11B                      |
| VD505    | Diode                         | W05Z24C                      |
| VD489    | Diode                         | W05Z30B                      |
| VD461    | Diode                         | ERC20-06                     |
| VD404    | Diode                         | 5VUZ52                       |
|          |                               |                              |
| V402     | Transistor                    | 2SC2235-0                    |
| V501     | Transistor                    | 2SA1015-Y                    |
| V502A    | Transistor                    | 2SA1015-Y                    |
| V461     | Transistor                    | 2SC1815-Y                    |
| V462     | Transistor                    | 2SC1815-Y                    |
| V504     | Transistor                    | 2SCI 815-Y                   |
| V505     | Transistor                    | 2SC1815-Y                    |
| V460     | Transistor                    | 2SB688 (3CA688)              |
| V502     | Transistor                    | 2SC3852                      |
| V525     | Transistor                    | 2SC4686A                     |
| V404     | Transistor                    | 2SC5144                      |
| N503     | Integrated Circuit            | L7805CV (MC7805CT)           |
| N502     | Integrated Circuit            | L7812CV (MC7812CT)           |

| POSITION | NAME                       | TYPE                       |
|----------|----------------------------|----------------------------|
| N501     | Integrated Circuit         | L7912CV                    |
| N301     | Integrated Circuit         | TDA8351                    |
| N504     | Integrated Circuit         | STK392-040                 |
| N505     | Integrated Circuit         | STK392-040                 |
| T461     | Flyback transformer        | BSC70D1                    |
| T401     | Line-driving transformer   | BCT-7                      |
| T400     | Dynamic focus transformer  | TLN2168                    |
| N511     | High tension box           | TPA6032AH                  |
|          |                            |                            |
|          |                            |                            |
|          |                            |                            |
| R846     | Carbon film resistor       | RT13-0.166W-220 Ohm J      |
| R817     | Carbon film resistor       | RT13-0.166W-680 Ohm J      |
| R827     | Carbon film resistor       | RT13-0.166W- 1K Ohm J      |
| R880     | Carbon film resistor       | RT13-0.166W-1K Ohm J       |
| R823     | Carbon film resistor       | RT13-0.166W-2.7K Ohm J     |
| R830     | Carbon film resistor       | RT13-0.166W-470 Ohm J      |
| R822     | Carbon film resistor       | RT13-0.166W-3.9K Ohm J     |
| R834     | Carbon film resistor       | RT13-0.166W-5.6K Ohm J     |
| R846A    | Carbon film resistor       | RT13-0.166W-5.6K Ohm J     |
| R881     | Carbon film resistor       | RT13-0.166W-5.6K Ohm J     |
| R837     | Carbon film resistor       | RT13-0.166W-6.8K Ohm J     |
| R838     | Carbon film resistor       | RT13-0.166W-6.8K Ohm J     |
| R847A    | Carbon film resistor       | RT13-0.166W-10K Ohm J      |
| R820     | Carbon film resistor       | RT13-0.166W-220K Ohm J     |
| R819     | Metal oxide film resistor  | RY21-0.5W-10 Ohm J         |
| R815     | Metal oxide film resistor  | RY21-0.5W-3.3K Ohm J       |
| R832     | Metal oxide film resistor  | RY21-0.5W-56K Ohm J        |
| R813     | Glass enamel film resistor | RI40-0.5W-1.5M Ohm J       |
| R833     | Metal oxide film resistor  | RJ20-1W-0.47 Ohm J         |
| R831     | Metal oxide film resistor  | RJ20-1W-15K Ohm J          |
| RF852    | Metal oxide film resistor  | RY21-2W-0.12 Ohm J         |
| RF856    | Metal oxide film resistor  | RY21-2W-0.12 Ohm J         |
| R818     | Metal oxide film resistor  | RY21-2W-0.12 Ohm J         |
| R821     | Metal oxide film resistor  | RY21-2W-0.12 Ohm J         |
| R832A    | Metal oxide film resistor  | RY21-2W-2.2 Ohm J          |
| R825     | Metal oxide film resistor  | RY21-2W-47 Ohm J           |
| R816     | Metal oxide film resistor  | RY21-2W-100K Ohm J         |
| R841     | Fusing resistor            | RF10-0.5W- 12 Ohm J        |
| RS01     | Glass enamel film resistor | VR37 225J (232224290185)   |
| R899     | Glass enamel film resistor | VR37 825J                  |
| RV899    | Piezoresistor              | TNR15G471K300 (MYG15-471K) |
| RT812    | Thermistor                 | B57237-S479-M              |
| RF872    | Metal oxide film resistor  | RY21-2W-100 Ohm J          |
| RF851    | Direct fuse                | PRF5000F008 (PRF50005491)  |
| RF853    | Direct fuse                | PRF5000F008 (PRF50005491)  |
| RF855    | Direct fuse                | PRF5000F008 (PRF50005491)  |
|          |                            |                            |
| C869A    | Ceramic capacitor          | CC1-63V-08a-C-100PFJ       |
| C809     | Ceramic capacitor          | CT1-63V-06c-2B4-470PFK     |
| C829     | Ceramic capacitor          | CT1-63V-06a-2B4-1000PFK    |
| C850     | Ceramic capacitor          | CT1-63V-06a-2B4-1000PFK    |
| C831     | Ceramic capacitor          | CT1-63V-08a-2F4-10nPFZ     |

| POSITION | NAME                             | TYPE                      |
|----------|----------------------------------|---------------------------|
| C837     | Ceramic capacitor                | CT1-63V-08a-2F4-10nPFZ    |
| C856     | Ceramic capacitor                | CT1-63V-08a-2F4-10nPFZ    |
| C803     | Ceramic capacitor                | DE1107-1E472MAC250        |
| C804     | Ceramic capacitor                | CT1-500V-12c-2E4-4700PFP  |
| C822     | Ceramic capacitor                | DE0910B471K-KX            |
| C823     | Ceramic capacitor                | DE0910B471K-KX            |
| C824     | Ceramic capacitor                | CT7-400VAC-08a-2B4-470PFM |
| C860     | Ceramic capacitor                | CT1-500V-06c-2B4-470PFK   |
| C861     | Ceramic capacitor                | CT1-500V-06c-2B4-470PFK   |
| C866     | Ceramic capacitor                | CT1-500V-06c-2B4-470PFK   |
| C868     | Ceramic capacitor                | CT1-500V-06c-2B4-470PFK   |
| C870     | Ceramic capacitor                | CT1-500V-06c-2B4-470PFK   |
| C872     | Ceramic capacitor                | CT1-500V-06c-2B4-470PFK   |
| C893     | Ceramic capacitor                | CT81-2KV-08c-2R4-220PFK   |
| C818     | Ceramic capacitor                | CT81-2KV-12c-2C1-1000PFK  |
| C817     | Polyester film capacitor         | CL21X-50V-0.1uFJ          |
| C832     | Polyester film capacitor         | CL21X-50V-0.1uFJ          |
| C834     | Polyester film capacitor         | CL21X-50V-0.1uFJ          |
| C836     | Polyester film capacitor         | CL21X-50V-0.1uFJ          |
| C838     | Polyester film capacitor         | CL21X-50V-0.1uFJ          |
| C843     | Polyester film capacitor         | CL21X-50V-0.1uFJ          |
| C851     | Polyester film capacitor         | CL21X-50V-0.1uFJ          |
| C880     | Polyester film capacitor         | CL21X-50V-0.1uFJ          |
| C801     | Polypropylene capacitor          | CBB62-250VAC-0.22uFK      |
| C802     | Polypropylene capacitor          | CBB62-250VAC-0.22uFK      |
| C825     | Polypropylene capacitor          | CBB13-630V-0.01uFH        |
| C844     | Aluminium electrolytic capacitor | CD110X-16V-101uFM         |
| C852     | Aluminium electrolytic capacitor | CD110X-16V-470uFM         |
| C863     | Aluminium electrolytic capacitor | CD288H-16V-3300uFQ        |
| C833     | Aluminium electrolytic capacitor | CD110X-25V-470uFM         |
| C862     | Aluminium electrolytic capacitor | CD110X-100V-470uFM        |
| C841     | Aluminium electrolytic capacitor | CD81-50V-10uFM            |
| C842     | Aluminium electrolytic capacitor | CD81-50V-10uFM            |
| C819     | Aluminium electrolytic capacitor | CD110X-50V-100uFM         |
| C835     | Aluminium electrolytic capacitor | CD81-50V-330uFM           |
| C869     | Aluminium electrolytic capacitor | CD81-50V-330uFM           |
| C871     | Aluminium electrolytic capacitor | CD81-50V-330uFM           |
| C873     | Aluminium electrolytic capacitor | CD81-50V-330uFM           |
| C867     | Aluminium electrolytic capacitor | CD288H-50V-2200uFQ        |
| C884     | Aluminium electrolytic capacitor | CD289H-160V-330uFT        |
| C820     | Aluminium electrolytic capacitor | CD289-450V-820uFM         |
|          |                                  |                           |
| L812     | Cored inductor                   | TEM2011                   |
| L814     | Cored inductor                   | TEM2011                   |
| L816     | Cored inductor                   | TEM2011                   |
| L860     | Cored inductor                   | TEM2011                   |
| L861     | Cored inductor                   | TEM2011                   |
| L866     | Cored inductor                   | TEM2011                   |
| L868     | Cored inductor                   | TEM2011                   |
| L869     | Cored inductor                   | TEM2011                   |
| L871     | Cored inductor                   | TEM2011                   |
| L862     | Fixed inductor                   | TLN2026-11uHK             |
| L863     | Fixed inductor                   | TLN2026-11uHK             |

| POSITION | NAME               | TYPE                      |
|----------|--------------------|---------------------------|
| L867     | Fixed inductor     | TLN2026-11uHK             |
| L870     | Fixed inductor     | TLN2026-11uHK             |
| L876     | Fixed inductor     | TLN2026-11uHK             |
| L883     | Fixed inductor     | TRF9253D- 1.1uHK          |
| L885     | Fixed inductor     | TLN3155D-100uHK           |
|          |                    |                           |
| VD831A   | Diode              | 2CK75D (1N4148)           |
| VD834    | Diode              | 2CK75D                    |
| VD835    | Diode              | 2CK75D                    |
| VD836    | Diode              | 2CK75D                    |
| VD880    | Diode              | W05Z6.8B                  |
| VD850    | Diode              | W05Z9.1B                  |
| VD817    | Diode              | W05Z12A                   |
| VD819    | Diode              | W05Z12A                   |
| VD831    | Diode              | W05Z12C                   |
| VD812    | Diode              | W05Z18C                   |
| VD821    | Diode              | W05Z1812                  |
| VD810    | Diode              | W05Z22C                   |
| VD832    | Diode              | W05Z24C                   |
| VD818    | Diode              | W05Z30B                   |
| VD809    | Diode              | AU01Z                     |
| VD813    | Diode              | AU01Z                     |
| VD822    | Diode              | AU01Z                     |
| VD823    | Diode              | AK03                      |
| VD861    | Diode              | RU4A (LF-L1)              |
| VD866    | Diode              | RU4AM (LF-L1)             |
| VD863    | Diode              | EU2A                      |
| VD815    | Diode              | SARS01                    |
| VD864    | Diode              | FML-G12S                  |
| VD865    | Diode              | FML-G12S                  |
| VD867    | Diode              | FML-G12S                  |
| VD893    | Diode              | FML-G16S                  |
|          |                    |                           |
| V802     | Transistor         | 2SC2655-Y(C)              |
| V806     | Transistor         | 2SC1815-Y                 |
| V809     | Transistor         | 2SC1815-Y                 |
| V882     | Transistor         | 2SC1815-Y                 |
| V883A    | Transistor         | 2SC1815-Y                 |
| V807     | Transistor         | 2SC3852                   |
| V880     | Transistor         | 2SC3852                   |
| V881     | Transistor         | 2SC3852                   |
| V883     | Transistor         | 2SC3852                   |
| F801     | Delay fuse         | RT1-20-5A-250V            |
| F802     | Delay fuse         | RT1-20-5A-250V            |
| T801     | Filter line        | TRF3173 (LCL-F11)         |
| T802     | Filter line        | TRF3197 (LCL-F12)         |
| T862     | Transformer switch | BCK-25502L (JUB4.726.052) |
| N803     | Integrated Circuit | L7805CV; MC7805CT         |
| N801     | Integrated Circuit | STR-F6658B                |
| VQ805    | Integrated Circuit | SE125N                    |
| N804     | Photo coupler      | TLP621GR; HS817           |
| VC801    | Gretz rectifier    | RBV-606, LFA; D6SB60L     |
|          |                    |                           |

| POSITION | NAME                 | TYPE                   |
|----------|----------------------|------------------------|
| R964     | Carbon film resistor | RT13-0.166W-33 Ohm J   |
| R913     | Carbon film resistor | RT13-0.166W-47 Ohm J   |
| R971     | Carbon film resistor | RT13-0.166W-47 Ohm J   |
| R337     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R338     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R339     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R914     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R915     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R913     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R934     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R943     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R945     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R973     | Carbon film resistor | RT13-0.166W-75 Ohm J   |
| R333     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R334     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R335     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R336     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R340     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R905     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R906     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R907     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R908     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R946     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R972     | Carbon film resistor | RT13-0.166W-100 Ohm J  |
| R935     | Carbon film resistor | RT13-0.166W-180 Ohm J  |
| R967     | Carbon film resistor | RT13-0.166W-330 Ohm J  |
| R970     | Carbon film resistor | RT13-0.166W-330 Ohm J  |
| R966     | Carbon film resistor | ItT13-0.166W-680 Ohm J |
| R969     | Carbon film resistor | RT13-0.166W-750 Ohm J  |
| R909     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R910     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R911     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R912     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R923     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R925     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R936     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R938     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R951     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R954     | Carbon film resistor | RT13-0.166W- 1K Ohm J  |
| R341     | Carbon film resistor | RT13-0.155W-2.2K Ohm J |
| R342     | Carbon film resistor | RT13-0.155W-2.2K Ohm J |
| R346     | Carbon film resistor | RT13-0.155W-2.2K Ohm J |
| R347     | Carbon film resistor | RT13-0.155W-2.2K Ohm J |
| R937     | Carbon film resistor | RT13-0.155W-2.2K Ohm J |
| R939     | Carbon film resistor | RT13-0.155W-2.2K Ohm J |
| R903     | Carbon film resistor | RT13-0.155W-2.7K Ohm J |
| R904     | Carbon film resistor | RT13-0.155W-2.7K Ohm J |
| R927     | Carbon film resistor | RT13-0.155W-4.7K Ohm J |
| R928     | Carbon film resistor | RT13-0.155W-4.7K Ohm J |
| R949     | Carbon film resistor | RT13-0.155W-4.7K Ohm J |
| R974     | Carbon film resistor | RT13-0.166W-5.1K Ohm J |
| R975     | Carbon film resistor | RT13-0.165W-5.1K Ohm J |
| R959     | Carbon film resistor | RT13-0.166W-5.6K Ohm J |

| POSITION | NAME                      | TYPE                    |
|----------|---------------------------|-------------------------|
| R921     | Carbon film resistor      | RT13-0.165W-9.1K Ohm J  |
| R922     | Carbon film resistor      | RT13-0.165W-10K Ohm J   |
| R929     | Carbon film resistor      | RT13-0.165W-10K Ohm J   |
| R930     | Carbon film resistor      | RT13-0.165W-10K Ohm J   |
| R947     | Carbon film resistor      | RT13-0.165W-10K Ohm J   |
| R957     | Carbon film resistor      | RT13-0.166W-18K Ohm J   |
| R958     | Carbon film resistor      | RT13-0.166W-18K Ohm J   |
| R901     | Carbon film resistor      | RT13-0.166W-22K Ohm J   |
| R902     | Carbon film resistor      | RT13-0.166W-18K Ohm J   |
| R932     | Carbon film resistor      | RT13-0.166W-18K Ohm J   |
| R941     | Carbon film resistor      | RT13-0.166W-18K Ohm J   |
| R942     | Carbon film resistor      | RT13-0.166W-18K Ohm J   |
| R924     | Carbon film resistor      | RT13-0.166W-30K Ohm J   |
| R926     | Carbon film resistor      | RT13-0.166W-39K Ohm J   |
| R933     | Carbon film resistor      | RT13-0.166W-47K Ohm J   |
| R952     | Carbon film resistor      | RT13-0.166W-47K Ohm J   |
| R962     | Carbon film resistor      | RT13-0.166W-47K Ohm J   |
| R963     | Carbon film resistor      | RT13-0.166W-47K Ohm J   |
| R332     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R916     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R917     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R918     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R919     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R940     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R944     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R948     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R953     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R960     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R961     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R965     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R968     | Carbon film resistor      | RT13-0.166W-100K Ohm J  |
| R976     | Carbon film resistor      | RT13-0.166W-150K Ohm J  |
| R977     | Carbon film resistor      | RT13-0.166W-150K Ohm J  |
| R331     | Carbon film resistor      | RT13-0.166W-1M Ohm J    |
| R931     | Carbon film resistor      | RT14-0.25W- 100 Ohm J   |
| R950     | Carbon film resistor      | RT13-0.166W-4.7K Ohm J  |
| R920     | Metal oxide film resistor | RY21-0.5W- 100 Ohm J    |
|          |                           |                         |
| C335     | Ceramic capacitor         | CC1-63V-06a-SL-27PFJ    |
| C336     | Ceramic capacitor         | CC1-63V-06a-SL-27PFJ    |
| C337     | Ceramic capacitor         | CC1-63V-06a-SL-27PFJ    |
| C338     | Ceramic capacitor         | CC1-63V-06a-SL-27PFJ    |
| C339     | Ceramic capacitor         | CC1-63V-06a-SL-27PFJ    |
| C930     | Ceramic capacitor         | CT1-63V-06a-2B4-1000PFK |
| C934     | Ceramic capacitor         | CT1-63V-06a-2B4-1000PFK |
| C944     | Ceramic capacitor         | CT1-63V-06a-2B4-1000PFK |
| C951     | Ceramic capacitor         | CT1-63V-06a-2B4-1000PFK |
| C905     | Ceramic capacitor         | CT1-63V-06a-2B4-1200PFK |
| C903     | Ceramic capacitor         | CT1-63V-10a-2B4-4700PFK |
| C906     | Ceramic capacitor         | CT1-63V-12e-2B4-5600PFK |
| C919     | Ceramic capacitor         | CT1-63V-12e-2B4-5600PFK |
| C920     | Ceramic capacitor         | CT1-63V-12e-2B4-5600PFK |
| C936     | Ceramic capacitor         | CT1-63V-08a-2F4-10nFZ   |

| POSITION | NAME                             | TYPE                  |
|----------|----------------------------------|-----------------------|
| C964     | Ceramic capacitor                | CT1-63V-08a-2F4-10nFZ |
| C965     | Ceramic capacitor                | CT1-63V-08a-2F4-10nFZ |
| C916     | Polytster film capacitor         | CL11X-50V-0.018uFJ    |
| C918     | Polytster film capacitor         | CL11X-50V-0.018uFJ    |
| C901     | Polytster film capacitor         | CL21X-50V-0.022uFJ    |
| C902     | Polytster film capacitor         | CL21X-50V-0.022uFJ    |
| C915     | Polytster film capacitor         | CL21X-50V-0.022uFJ    |
| C917     | Polytster film capacitor         | CL21X-50V-0.022uFJ    |
| C938     | Polytster film capacitor         | CL21X-50V-0.022uFJ    |
| C960     | Polytster film capacitor         | CL21X-50V-0.022uFJ    |
| C962     | Polytster film capacitor         | CL21X-50V-0.022uFJ    |
| C963     | Polytster film capacitor         | CL21X-50V-0.022uFJ    |
| C331     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C332     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C333     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C904     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C911     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C912     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C913     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C914     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C929     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C932     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C933     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C950     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C952     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C953     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C958     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C959     | Polytster film capacitor         | CL21X-50V-0.1uFJ      |
| C939     | Polytster film capacitor         | CL21X-50V-0.22uFJ     |
| C907     | Polytster film capacitor         | CL21X-50V-0.68uFJ     |
| C908     | Aluminium electrolytic capacitor | CD 110-50V-2.2uFM     |
| C909     | Aluminium electrolytic capacitor | CD 110-50V-2.2uFM     |
| C910     | Aluminium electrolytic capacitor | CD 110-50V-2.2uFM     |
| C945     | Aluminium electrolytic capacitor | CD 110-50V-2.2uFM     |
| C946     | Aluminium electrolytic capacitor | CD 110-50V-2.2uFM     |
| C940     | Aluminium electrolytic capacitor | CD 110-16V-4.7uFM     |
| C941     | Aluminium electrolytic capacitor | CD 110-16V-4.7uFM     |
| C921     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C922     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C923     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C924     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C926     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C927     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C947     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C948     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C949     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C955     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C956     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C957     | Aluminium electrolytic capacitor | CD 110-16V-10uFM      |
| C925     | Aluminium electrolytic capacitor | CD 110-16V-22uFM      |
| C334     | Aluminium electrolytic capacitor | CD 110X-16V-47uFM     |
| C928     | Aluminium electrolytic capacitor | CD 110X-16V-47uFM     |
| C931     | Aluminium electrolytic capacitor | CD 110X-16V-47uFM     |

| POSITION | NAME                             | TYPE                   |
|----------|----------------------------------|------------------------|
| C943     | Aluminium electrolytic capacitor | CD 110X-16V-47u FM     |
| C937     | Aluminium electrolytic capacitor | CD 110X-16V-220uFM     |
| C935     | Aluminium electrolytic capacitor | CD 110X-16V-470uFM     |
| C942     | Aluminium electrolytic capacitor | CD 110X-16V-470uFM     |
| C961     | Aluminium electrolytic capacitor | CD 110X-35V-220uFM     |
| C336A    | Aluminium electrolytic capacitor | CD 110X-50V-10uFM      |
| C340A    | Aluminium electrolytic capacitor | CD 110X-50V-10uFM      |
|          |                                  |                        |
| L910     | Fixed inductor                   | TGB0606-15uHK          |
| L908     | Fixed inductor                   | TGB0606-15uHK          |
| L901     | Cored inductor                   | TEM2028K               |
| L902     | Cored inductor                   | TEM2028K               |
| L903     | Cored inductor                   | TEM2028K               |
| L904     | Cored inductor                   | TEM2028K               |
| L905     | Cored inductor                   | TEM2028K               |
| L906     | Cored inductor                   | TEM2028K               |
| L907     | Cored inductor                   | TEM2028K               |
| L909     | Cored inductor                   | TEM2028K               |
|          |                                  |                        |
| VD331    | Diode                            | W05Z5.1B               |
| VD332    | Diode                            | W05Z5.1B               |
| VD903    | Diode                            | W05ZS.6B               |
| VD901    | Diode                            | W05Z6.2B               |
| VD902    | Diode                            | W05Z6.2B               |
| VD904    | Diode                            | W05Z6.2B               |
| VD905    | Diode                            | W05Z6.2B               |
| VD906    | Diode                            | W05Z6.2B               |
|          |                                  |                        |
| V904     | Transistor                       | 2SC2878-A              |
| V905     | Transistor                       | 2SC2878-A              |
| V901     | Transistor                       | 2SC1815-Y (3DG 1815-Y) |
| V902     | Transistor                       | 2SC1815-Y (3DG1815-Y)  |
| V903     | Transistor                       | 2SC1815-Y (3DG1815-Y)  |
| V906     | Transistor                       | 2SC1815-Y (3DG1815-Y)  |
| V907     | Transistor                       | 2SC1815-Y (3DG1815-Y)  |
| V908     | Transistor                       | 2SC1815-Y (3DG1815-Y)  |
| V909     | Transistor                       | 2SC1815-Y (3DG1815-Y)  |
| V910     | Transistor                       | 2SC1815-Y (3DG1815-Y)  |
| V911     | Transistor                       | 2SC1815-Y (3DG1815-Y)  |
| N300     | Integrated Circuit               | 74HCT86N               |
| N902     | Integrated Circuit               | M5218AP                |
| N903     | Integrated Circuit               | HCF4066BE (MC14066BCP) |
| N901     | Integrated Circuit               | TDA7429S               |
| PV01     | AV jack                          | AV-3S-9PBYUV           |
| PV02     | AV jack                          | AV-1-3PK100            |
| PV03     | AV jack                          | AV-VGA-2PA             |
|          |                                  |                        |
|          |                                  |                        |
|          |                                  |                        |
| RGY15    | Carbon film resistor             | RT13-0.166W-2.7 Ohm J  |
| RGY17    | Carbon film resistor             | RT13-0.166W-2.7 Ohm J  |
| RGY14    | Carbon film resistor             | RT13-0.166W-18 Ohm J   |
| RGY16    | Carbon film resistor             | RT13-0.166W-18 Ohm J   |

| POSITION | NAME                             | TYPE                     |
|----------|----------------------------------|--------------------------|
| RG35     | Carbon film resistor             | RT13-0.166W-56 Ohm J     |
| RG36     | Carbon film resistor             | RT13-0.166W-56 Ohm J     |
| RG14     | Carbon film resistor             | RT13-0.166W- 100 Ohm J   |
| RGY27    | Carbon film resistor             | RT13-0.166W- 100 Ohm J   |
| RGY28    | Carbon film resistor             | RT13-0.166W- 100 Ohm J   |
| RGY31    | Carbon film resistor             | RT13-0.166W-470 Ohm J    |
| RGY21    | Carbon film resistor             | RT13-0.166W-680 Ohm J    |
| RGY23    | Carbon film resistor             | RT13-0.166W-680 Ohm J    |
| RG08     | Carbon film resistor             | RT13-0.166W-1K Ohm J     |
| RGY07    | Carbon film resistor             | RT13-0.166W-1.2K Ohm J   |
| RGY09    | Carbon film resistor             | RT13-0.166W-1.2K Ohm J   |
| RGY34    | Carbon film resistor             | RT13-0.166W-1.2K Ohm J   |
| RG02     | Carbon film resistor             | RT13-0.166W-1.5K Ohm J   |
| RG06     | Carbon film resistor             | RT13-0.166W-1.5K Ohm J   |
| RGY06    | Carbon film resistor             | RT13-0.166W-1.5K Ohm J   |
| RGY08    | Carbon film resistor             | RT13-0.166W-1.5K Ohm J   |
| RGY20    | Carbon film resistor             | RT13-0.166W-2.2K Ohm J   |
| RGY22    | Carbon film resistor             | RT13-0.166W-2.2K Ohm J   |
| RGY26    | Carbon film resistor             | RT13-0.166W-2.2K Ohm J   |
| RGY29    | Carbon film resistor             | RT13-0.166W-2.2K Ohm J   |
| RGY32    | Carbon film resistor             | RT13-0.166W-3.3K Ohm J   |
| RG39     | Carbon film resistor             | RT13-0.166W-3.6K Ohm J   |
| RGY33    | Carbon film resistor             | RT13-0.166W-9.1K Ohm J   |
| RG38     | Carbon film resistor             | RT13-0.166W-10K Ohm J    |
| RGY13    | Carbon film resistor             | RT13-0.166W-12K Ohm J    |
| RG11     | Carbon film resistor             | RT13-0.166W-68K Ohm J    |
| RGY10    | Carbon film resistor             | RT13-0.166W-68K Ohm J    |
| RGY11    | Carbon film resistor             | RT13-0.166W-68K Ohm J    |
| RGY24    | Carbon film resistor             | RT13-0.166W-1M Ohm J     |
| RGY30    | Metal oxide film resistor        | RY21-1W-10 Ohm J         |
| RG20     | Metal oxide film resistor        | RY21-1W-33 Ohm J         |
| RGY18    | Metal oxide film resistor        | RY21-2W-470 Ohm J        |
| RGY01    | Metal oxide film resistor        | RY21-2W-470 Ohm J        |
| RG17     | Glass enamel film resistor       | RI40-0.5W-1.5K Ohm K     |
|          |                                  |                          |
| CG02     | Ceramic capacitor                | CC1-63V-06a-C-12PFJ      |
| CG14     | Ceramic capacitor                | CT1-500V-06c-2B4-560PFK  |
| CGY04    | Ceramic capacitor                | CT1-500V-14c-2B4-4700PFK |
| CGY06    | Ceramic capacitor                | CT1-500V-14c-2B4-4700PFK |
| CG08     | Polytster film capacitor         | CL21X-50V-0.022uFJ       |
| CG05     | Polytster film capacitor         | CL21X-50V-0.1uFJ         |
| CGY 13   | Polytster film capacitor         | CL21X-50V-0.1uFJ         |
| CG11     | Polytster film capacitor         | CL21X-250V-0.1uFJ        |
| CGY01    | Polypropylene capacitor          | CBB81-1.6KV- 1800PFJ     |
| CG30     | Aluminium electrolytic capacitor | CD110X-16V-10uFM         |
| CG26     | Aluminium electrolytic capacitor | CD110X-I 6V-470uFM       |
| CG27     | Aluminium electrolytic capacitor | CD110X-25V-100uFM        |
| CGY12    | Aluminium electrolytic capacitor | CD110X-25V-100uFM        |
| CGY11    | Aluminium electrolytic capacitor | CD110X-35V-220uFM        |
| CG28     | Aluminium electrolytic capacitor | CD110-50V-0.47uFM        |
| CGY03    | Aluminium electrolytic capacitor | CD110X-50V-47uFM         |
| CGY08    | Aluminium electrolytic capacitor | CD110X-50V-47uFM         |
| CGY14    | Aluminium electrolytic capacitor | CD110X-50V-47uFM         |
| CG29     | Aluminium electrolytic capacitor | CD288H-250V-33uFQ        |

| POSITION | NAME                             | TYPE                    |
|----------|----------------------------------|-------------------------|
| CGY02    | Aluminium electrolytic capacitor | CD288-250V-10uFQ        |
| CGY10    | Aluminium electrolytic capacitor | CD288-250V-10uFQ        |
|          |                                  |                         |
| LGY18    | Fixed inductor                   | LGB0606-0.33uHJ         |
| LGY01    | Cored inductor                   | TEM2011                 |
| LGY02    | Cored inductor                   | TEM2011                 |
| LGY05    | Cored inductor                   | TEM2011                 |
|          |                                  |                         |
| VDG02    | Diode                            | 1N4148 (2CK75D)         |
| VDGY03   | Diode                            | 1N4148 (2CK75D)         |
| VDGY04   | Diode                            | 1N4148 (2CK75D)         |
| VDG08    | Diode                            | 1N4148 (2CK75D)         |
| VDG10    | Diode                            | 1N4148 (2CK75D)         |
| VDGY10   | Diode                            | 1N4148 (2CK75D)         |
| VDGY12   | Diode                            | 1N4148 (2CK75D)         |
| VDGY16   | Diode                            | 1N4148 (2CK75D)         |
| VDG14    | Diode                            | MTZJ13A (W05Z 13A)      |
| VDG18    | Diode                            | BAV21                   |
| VG05     | Transistor                       | 2SC1815-Y (3DG1815-Y)   |
| VGY11    | Transistor                       | 2SC1815-Y (3DG1815-Y)   |
| VGY12    | Transistor                       | 2SC1815-Y (3DG1815-Y)   |
| VGY14    | Transistor                       | 2SC1815-Y (3DG1815-Y)   |
| VGY10    | Transistor                       | 2SA1015-Y (3CG1015-Y)   |
| VGY13    | Transistor                       | 2SA1015-Y (3CG1015-Y)   |
| VGY03    | Transistor                       | 2SA1837                 |
| VGY04    | Transistor                       | 2SC4793                 |
| NG02     | Integrated circuit               | TDA6111Q                |
| SG01     | GZS CRT socket                   | GZS10-2-108             |
|          |                                  |                         |
| RB35     | Carbon film resistor             | RT13-0.166W-56 Ohm J    |
| RB36     | Carbon film resistor             | RT13-0.166W-56 Ohm J    |
| RB14     | Carbon film resistor             | RT13-0.166W-100 Ohm J   |
| RB08     | Carbon film resistor             | RT13-0.166W-1K Ohm J    |
| RB02     | Carbon film resistor             | RT13-0.166W- 1.5K Ohm J |
| RB06     | Carbon film resistor             | RT13-0.166W-1.5K Ohm J  |
| RB40     | Carbon film resistor             | RT13-0.166W-3.6K Ohm J  |
| RB39     | Carbon film resistor             | RT13-0.166W-10K Ohm J   |
| RB11     | Carbon film resistor             | RT13-0.166W-68K Ohm J   |
| RB20     | Metal oxide film resistor        | RY21-1W-33 Ohm J        |
| RB17     | Glass enamel film resistor       | RI40-0.5W- 1.5K Ohm K   |
|          |                                  |                         |
| CB02     | Ceramic capacitor                | CC1-63V-06a-C-12PFJ     |
| CB14     | Ceramic capacitor                | CT1-500V-06c-2B4-560PFK |
| CB08     | Polytster film capacitor         | CL21X-50V-0.022uFJ      |
| CB05     | Polytster film capacitor         | CL21X-50V-0.1uFJ        |
| CB11     | Polytster film capacitor         | CL21X-250V-0.1uFJ       |
| CB39     | Polypropylene capacitor          | CBB81-1.6KV-1800PFJ     |
| CB30     | Aluminium electrolytic capacitor | CD110C-16V-10uFM        |
| CB26     | Aluminium electrolytic capacitor | CD110X-16V-470uFM       |
| CB27     | Aluminium electrolytic capacitor | CD110X-25V-100uFM       |
| CB28     | Aluminium electrolytic capacitor | CD110-50V-0.47uFM       |
| CB29     | Aluminium electrolytic capacitor | CD288H-250V-33uFQ       |
|          |                                  |                         |

| POSITION | NAME                             | TYPE                    |
|----------|----------------------------------|-------------------------|
| LB01     | Cored inductor                   | TEM2011                 |
|          |                                  |                         |
| VDB01    | Diode                            | 1N4148 (2CK75D)         |
| VDB08    | Diode                            | 1N4148 (2CK75D)         |
| VDB10    | Diode                            | 1N4148 (2CK75D)         |
| VDB14    | Diode                            | MTZJ13A (W05Z13A)       |
| VDB18    | Diode                            | BAV21                   |
|          |                                  |                         |
| VB05     | Transistor                       | 2SC1815-Y (3DG1815-Y)   |
| NB02     | Integrated circuit               | TDA6111Q                |
| SB01     | GZS CRT socket                   | GZS10-2-108             |
|          |                                  |                         |
| RR35     | Carbon film resistor             | RT13-0.166W-56 Ohm J    |
| RR36     | Carbon film resistor             | RT13-0.166W-56 Ohm J    |
| RR14     | Carbon film resistor             | RT13-0.166W-100 Ohm J   |
| RR08     | Carbon film resistor             | RT13-0.166W-1K Ohm J    |
| RR02     | Carbon film resistor             | RT13-0.166W-1.5K Ohm J  |
| RR05     | Carbon film resistor             | RT13-0.166W-1.5K Ohm J  |
| RR39     | Carbon film resistor             | RT13-0.166W-3.6K Ohm J  |
| RR38     | Carbon film resistor             | RT13-0.166W-1.0K Ohm J  |
| RR11     | Carbon film resistor             | RT13-0.166W-68K Ohm J   |
| RR20     | Metal oxide film resistor        | RY21-1W-33 Ohm J        |
| RR17     | Glass enamel film resistor       | RI40-0.5W-1.5K Ohm K    |
|          |                                  |                         |
| CR02     | Ceramic capacitor                | CC1-63V-06a-C-12PFJ     |
| CR14     | Ceramic capacitor                | CT1-500V-06c-2B4-560PFK |
| CR08     | Polytster film capacitor         | CL21X-50V-0.022uFJ      |
| CR05     | Polytster film capacitor         | CL21X-50V-0.1uFJ        |
| CR11     | Polytster film capacitor         | CL21X-250V-0.1uFJ       |
| CR39     | Polypropylene capacitor          | CBB81-1.6KV-1800PFJ     |
| CR30     | Aluminium electrolytic capacitor | CD110X-16V-10uFM        |
| CR17     | Aluminium electrolytic capacitor | CD110X-16V-470uFM       |
| CR27     | Aluminium electrolytic capacitor | CD110X-25V-100uFM       |
| CR28     | Aluminium electrolytic capacitor | CD110-50V-0.47uFM       |
| CR29     | Aluminium electrolytic capacitor | CD288H-250V-33uFQ       |
|          |                                  |                         |
| LR01     | Cored inductor                   | TEM2011                 |
|          |                                  |                         |
| VDR01    | Diode                            | 1N4148 (2CK75D)         |
| VDR08    | Diode                            | 1N4148 (2CK75D)         |
| VDR10    | Diode                            | 1N4148 (2CK75D)         |
| VDR14    | Diode                            | MTZJ13A (W05Z13A)       |
| VDR18    | Diode                            | BAV21                   |
|          |                                  |                         |
| VR05     | Transistor                       | 2SC1815-Y(3DG1815-Y)    |
| NR02     | Integrated circuit               | TDA6111Q                |
| SR01     | GZS CRT                          | GZS10-2-108             |
| RY14     | Carbon film resistor             | RT13-0.166W-27 Ohm J    |
| RY25     | Carbon film resistor             | RT13-0.166W-47 Ohm J    |
| RY26     | Carbon film resistor             | RT13-0.166W-47 Ohm J    |
| RY31     | Carbon film resistor             | RT13-0.166W-68 Ohm J    |
| RY20     | Carbon film resistor             | RT13-0.166W- 100 Ohm J  |
| LY02     | Carbon film-resistor             | RT13-0.166W- 100 Ohm J  |

| POSITION | NAME                             | TYPE                    |
|----------|----------------------------------|-------------------------|
| RY24     | Carbon film resistor             | RT13-0.166W-180 Ohm J   |
| RY27     | Carbon film resistor             | RT13-0.166W-180 Ohm J   |
| RY32     | Carbon film resistor             | RT13-0.166W-220 Ohm J   |
| RY01     | Carbon film resistor             | RT13-0.166W-1K Ohm J    |
| RY22     | Carbon film resistor             | RT13-0.166W-1K Ohm J    |
| RY23     | Carbon film resistor             | RT13-0.166W-1.2K Ohm J  |
| RY16     | Carbon film resistor             | RT13-0.166W-1.5K Ohm J  |
| RY13     | Carbon film resistor             | RT13-0.166W-1.8K Ohm J  |
| RY34     | Carbon film resistor             | RT13-0.166W-2.2K Ohm J  |
| RY17     | Carbon film resistor             | RT13-0.166W-3.3K Ohm J  |
| RY28     | Carbon film resistor             | RT13-0.166W-4.7K Ohm J  |
| RY02     | Carbon film resistor             | RT13-0.166W-4.7K Ohm J  |
| RY30     | Carbon film resistor             | RT13-0.166W-5.6K Ohm J  |
| RY35     | Carbon film resistor             | RT13-0.166W-6.8K Ohm J  |
| RY03     | Carbon film resistor             | RT13-0.166W-10K Ohm J   |
| RY04     | Carbon film resistor             | RT13-0.166W-10K Ohm J   |
| RY15     | Carbon film resistor             | RT13-0.166W- 100K Ohm J |
| RY18     | Carbon film resistor             | RT13-0.166W-100K Ohm J  |
| RY29     | Carbon film resistor             | RT13-0.166W-1M Ohm J    |
|          |                                  |                         |
| CY08     | Ceramic capacitor                | CC 1-63V-06a-SL-100PFJ  |
| CY13     | Ceramic capacitor                | CC 1-63V-06a-SL-100PFJ  |
| CY06     | Ceramic capacitor                | CT1-63V-06a-2B4-1500PFK |
| CY18     | Ceramic capacitor                | CT1-63V-06a-2B4-1500PFK |
| CY07     | Ceramic capacitor                | CT1-63V-06a-2B4-1800PFK |
| CY09     | Polytster film capacitor         | CL21X-50V-0.047uFJ      |
| CY11     | Polytster film capacitor         | CL21X-50V-0.047uFJ      |
| CY14     | Polytster film capacitor         | CL21X-50V-0.047uFJ      |
| CY17     | Polytster film capacitor         | CL21X-50V-0.047uFJ      |
| CY16     | Polytster film capacitor         | CL21X-50V-0.1uFJ        |
| CY21     | Aluminium electrolytic capacitor | CD110X-50V-10uFM        |
| CY10     | Aluminium electrolytic capacitor | CD110X-50V-47uFM        |
|          |                                  |                         |
| LY01     | Fixed inductor                   | LGB0606-10uHJ           |
|          |                                  |                         |
| VDY04    | Diode                            | 1N4148; 2CK75D          |
|          |                                  |                         |
| VY07     | Transistor                       | BC547                   |
| VY05     | Transistor                       | BC547                   |
| VY04     | Transistor                       | BC547                   |
| VY10     | Transistor                       | BC547                   |
| VY06     | Transistor                       | BC557                   |
| VY11     | Transistor                       | BC557                   |
| VY03     | Transistor                       | 2SA1015-Y; 3CG 1015-Y   |
| VY 12    | Transistor                       | 2SC1815-Y; 3DG1815-Y    |
| VY08     | Transistor                       | 2SC2878-A               |
| VY09     | Transistor                       | 2SC2878-A               |
|          |                                  |                         |
| R001     | Carbon film resistor             | RT13-0.166W- 100 Ohm J  |
| R002     | Carbon film resistor             | RT13-0.166W- 100 Ohm J  |
| R006     | Carbon film resistor             | RT13-0.166W- 100 Ohm J  |
| R007     | Carbon film resistor             | RT13-0.166W- 100 Ohm J  |
| R011     | Carbon film resistor             | RT13-0.166W- 1K Ohm J   |

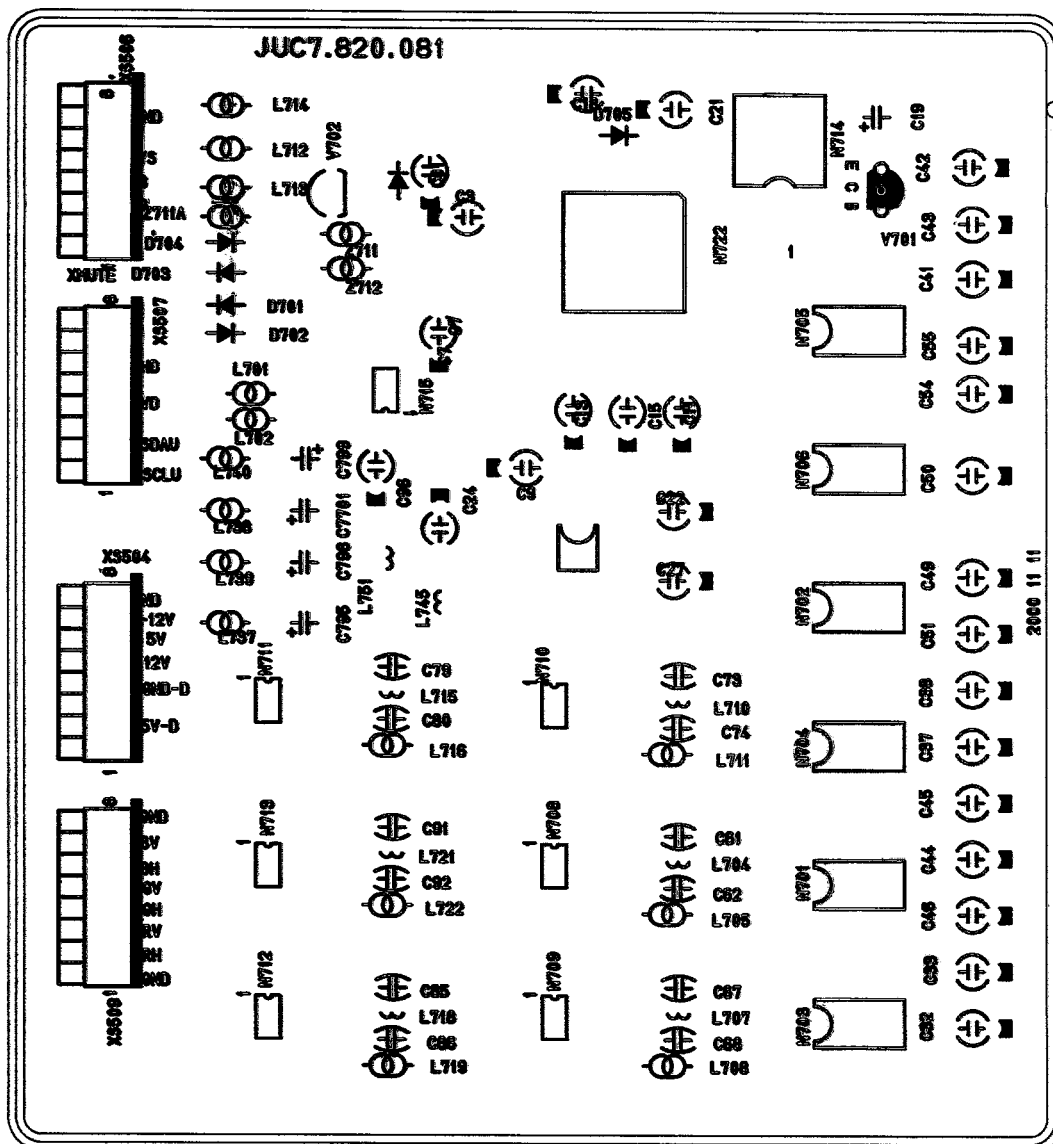
| POSITION | NAME                             | TYPE                     |
|----------|----------------------------------|--------------------------|
| R012     | Carbon film resistor             | RT13-0.166W-1K Ohm J     |
| R010     | Carbon film resistor             | RT13-0.166W-1.5K Ohm J   |
| R003     | Carbon film resistor             | RT13-0.166W- 10K Ohm J   |
| R004     | Carbon film resistor             | RT13-0.166W- 10K Ohm J   |
| R005     | Carbon film resistor             | RT13-0.166W- 10K Ohm J   |
| R009     | Carbon film resistor             | RT13-0.166W- 12K Ohm J   |
| R008     | Carbon film resistor             | RT13-0.166W-27K Ohm J    |
|          |                                  |                          |
| C026     | Ceramic capacitor                | CC1-63V-06a-SL-3PFC      |
| C027     | Ceramic capacitor                | CC1-63V-06a-SL-3PFC      |
| C019     | Ceramic capacitor                | CC1-63V-06a-SL-47PFJ     |
| C001A    | Ceramic capacitor                | CC1-63V-06a-SL-47PFJ     |
| C025A    | Ceramic capacitor                | CC1-63V-06a-SL-47PFJ     |
| C006     | Ceramic capacitor                | CT1-63V-06a-2B4-390PFC   |
| C007     | Ceramic capacitor                | CT1-63V-06a-2B4-390PFC   |
| C017     | Ceramic capacitor                | CT1-63V-06a-2B4-470PFC   |
| C018     | Ceramic capacitor                | CT1-63V-06a-2B4-470PFC   |
| C008     | Ceramic capacitor                | CT1-63V-06a-2B4-1500PFC  |
| C009     | Ceramic capacitor                | CT1-63V-06a-2B4-1500PFC  |
| C004     | Polytster film capacitor         | CL21X-50V-0.01uFJ        |
| C020     | Polytster film capacitor         | CL21X-50V-0.01uFJ        |
| C025     | Polytster film capacitor         | CL21X-50V-0.01uFJ        |
| C002     | Polytster film capacitor         | CL21X-50V-0.1uFJ         |
| C010     | Polytster film capacitor         | CL21X-50V-0.1uFJ         |
| C012     | Polytster film capacitor         | CL21X-50V-0.1uFJ         |
| C016     | Polytster film capacitor         | CL21X-50V-0.1uFJ         |
| C021     | Polytster film capacitor         | CL21X-50V-0.1uFJ         |
| C024     | Polytster film capacitor         | CL21X-50V-0.1uFJ         |
| C001     | Aluminium electrolytic capacitor | CD110-16V-10uFM          |
| C003     | Aluminium electrolytic capacitor | CD110-16V-10uFM          |
| C013     | Aluminium electrolytic capacitor | CD110-16V-10uFM          |
| C014     | Aluminium electrolytic capacitor | CD110-16V-10uFM          |
| C015     | Aluminium electrolytic capacitor | CD110-16V-10uFM          |
| C023     | Aluminium electrolytic capacitor | CD110-16V-10uFM          |
| C022     | Aluminium electrolytic capacitor | CD110X-16V-47uFM         |
| C005     | Aluminium electrolytic capacitor | CD110X-16V-100uFM        |
| C011     | Aluminium electrolytic capacitor | CD110X-16V-100uFM        |
|          |                                  |                          |
| L002A    | Fixed inductor                   | LGB0606-12uHJ            |
| L001     | Fixed inductor                   | LGB0606-100uHK           |
| L003     | Fixed inductor                   | LGB0606-100uHK           |
| L004     | Fixed inductor                   | LGB0606-100uHK           |
| V001     | Transistor                       | 2SC1815-Y; 3LG1815-Y     |
| V002     | Transistor                       | 2SC1815-Y; 3LG1815-Y     |
| V003     | Transistor                       | 2SC1815-Y; 3LG1815-Y     |
| N001     | Integrated circuit               | MSP3410D-PP-B4 (PSDIP64) |
| G001     | Transistor oscillator            | JA18A1-18.432MHZ         |
|          |                                  |                          |
| VD001    | Diode                            | W05Z4.3B                 |
|          |                                  |                          |
| RK62     | Carbon film resistor             | RT13-0.166W-100 Ohm J    |
| RK57     | Carbon film resistor             | RT13-0.166W-270 Ohm J    |
| RK60     | Carbon film resistor             | RT13-0.166W-2.2K Ohm J   |

| POSITION | NAME                             | TYPE                          |
|----------|----------------------------------|-------------------------------|
| RK52     | Carbon film resistor             | RT13-0.166W-4.7K Ohm J        |
| RK55     | Carbon film resistor             | RT13-0.166W-4.7K Ohm J        |
| RK58     | Carbon film resistor             | RT13-0.166W-4.7K Ohm J        |
| RK51     | Carbon film resistor             | RT13-0.166W-8.2K Ohm J        |
| RK54     | Carbon film resistor             | RT13-0.166W-8.2K Ohm J        |
| RK53     | Carbon film resistor             | RT13-0.166W-12K Ohm J         |
| RK56     | Carbon film resistor             | RT13-0.166W- 12K Ohm J        |
| RK59     | Carbon film resistor             | RT13-0.166W-30K Ohm J         |
| RK61     | Carbon film resistor             | RT13-0.166W-68K Ohm J         |
|          |                                  |                               |
| CK01     | Aluminium electrolytic capacitor | CD110-16V-10uFM               |
| CK02     | Aluminium electrolytic capacitor | CD110-16V-10uFM               |
|          |                                  |                               |
| VDK04    | Diode                            | 1N4148                        |
| VDK03    | Diode                            | FG5RGD                        |
|          |                                  |                               |
| VK02     | Transistor                       | 2SA1015-Y                     |
| VK03     | Transistor                       | 2SA1015-Y                     |
| VK01     | Transistor                       | 2SC1815-Y                     |
| KK01     | Switch paddle                    | KA3L6X7X7.5-22-10             |
| KK02     | Switch paddle                    | KA3L6X7X7.5-22-10             |
| XPV01    | Front AV jack                    | AV-1S-3P                      |
|          |                                  |                               |
| RM01     | Carbon film resistor             | RT13-0.166W-75 Ohm J          |
| CM01     | Aluminium electrolytic capacitor | CD 110-16V-47uFM              |
|          |                                  |                               |
| NK01     | Integrated circuit               | HS0038A2; HS0038B             |
|          |                                  |                               |
| RB01     | Carbon film resistor             | RY21-2W-3.3K Ohm J            |
| RB02     | Carbon film resistor             | RY21-2W-3.3K Ohm J            |
| CB01     | Polystster film capacitor        | CBB13-400V-0.043uFJ           |
| CB02A    | Polystster film capacitor        | CL21X-250V-0.1uFJ             |
| CB02B    | Polystster film capacitor        | CL21X-250V-0.1uFJ             |
|          |                                  |                               |
| LB01     | Correction inductor              | HFT90 (JUB4.756.022)          |
| TB01     | Correction transformer           | BJC-F10 (JUB4.739.011)        |
| RBP01    | Jumper                           | 5mm                           |
|          | Convergence board                | JUC7.820-081                  |
|          | Frequency board                  | JUC7.820-169 (169-1)          |
|          | High tension cover               | HV-WR                         |
|          | High tension cover               | HV-WB                         |
|          | High tension cover               | HV-WG                         |
|          | Power switch                     | KDC-A04-MU171                 |
|          | Power line                       | RVVZ-**-C69                   |
|          | Audio amplifier                  | YD140-A1-30W-8 Ohm            |
|          | Audio amplifier                  | YD140-A1-30W-8 Ohm            |
|          | Audio amplifier                  | YDQG80-A1-10W-8 Ohm           |
|          | Audio amplifier                  | YDQG80-A1-10W-8 Ohm           |
|          | Aluminium electrolytic capacitor | CD71-50V-3.3uFM               |
|          | Aluminium electrolytic capacitor | CD71-50V-3.3uFM               |
|          | Magnetic coil                    | ZCAT2032-0930; ZCAT2035-0930A |

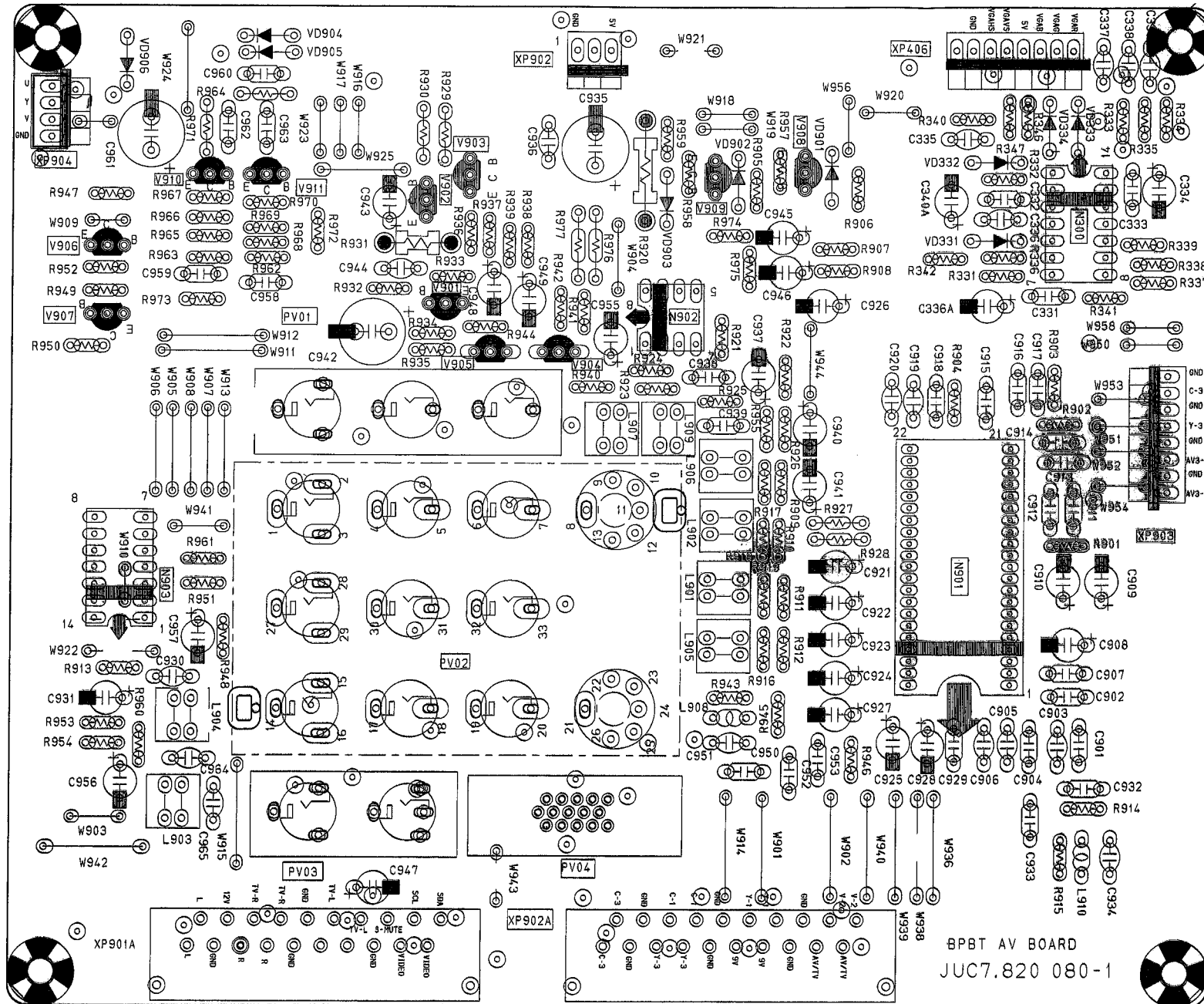
| POSITION | NAME                   | TYPE                          |
|----------|------------------------|-------------------------------|
|          | Magnetic coil          | ZCAT2032-0930; ZCAT2035-0930A |
|          | Project barrel (R)     | P16LNM07RJA; P16LSG03RJA      |
|          | Project barrel (G)     | P16LNM07HKA; P16LSG03HKA      |
|          | Project barrel (B)     | P16LNM07BMA; P16LSG03BMA      |
|          | Convergence components | MHF116-62A                    |
|          | DY deflect coil        | DAV4925                       |
|          | DY deflect coil        | DAV4925                       |
|          | DY deflect coil        | DAV4925                       |
|          | High tension capacitor | MSC102-01C                    |
|          | VM coil                | TLHX003                       |

# 8.1 PRINTED CIRCUIT BOARD (PART I)

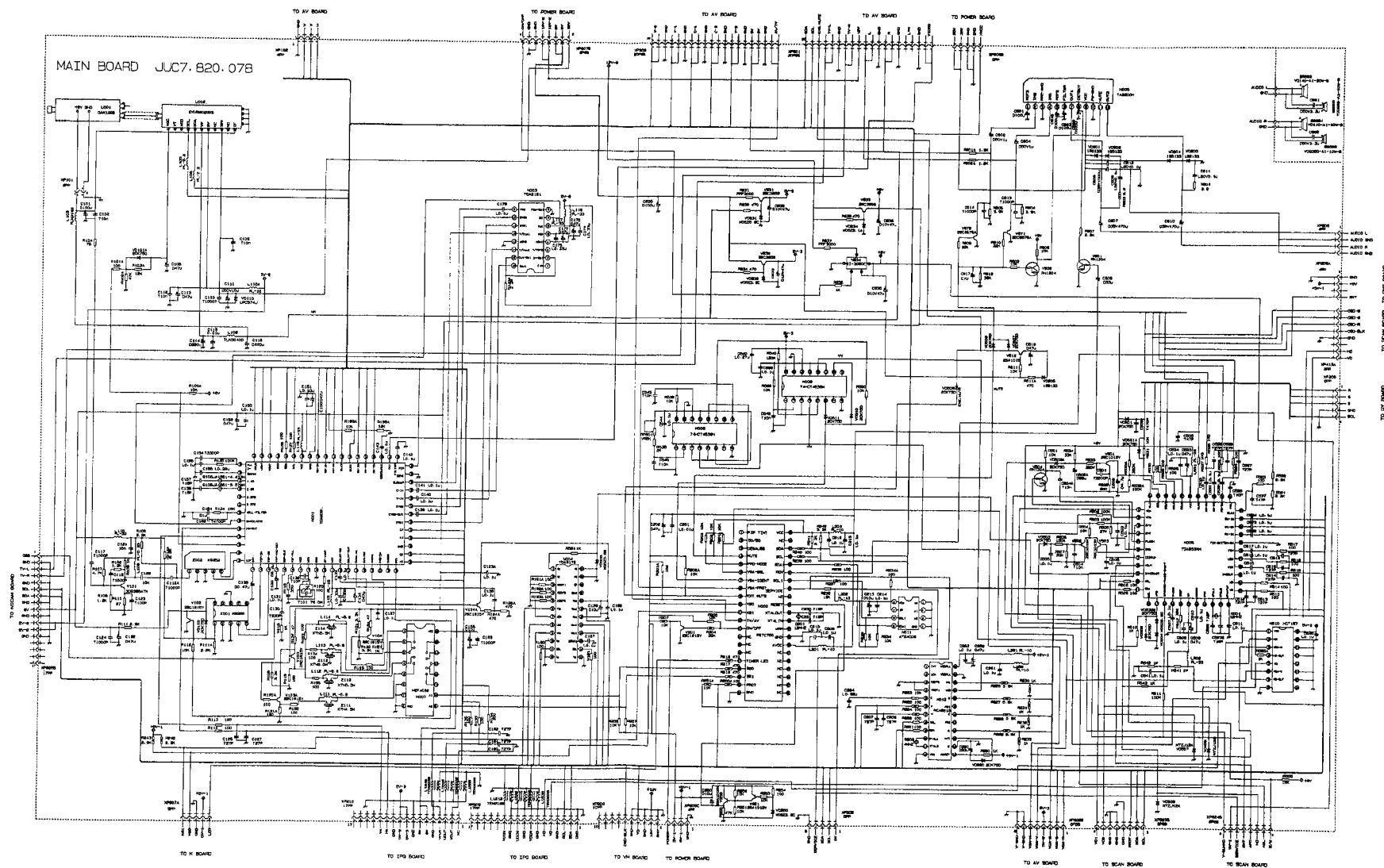
62



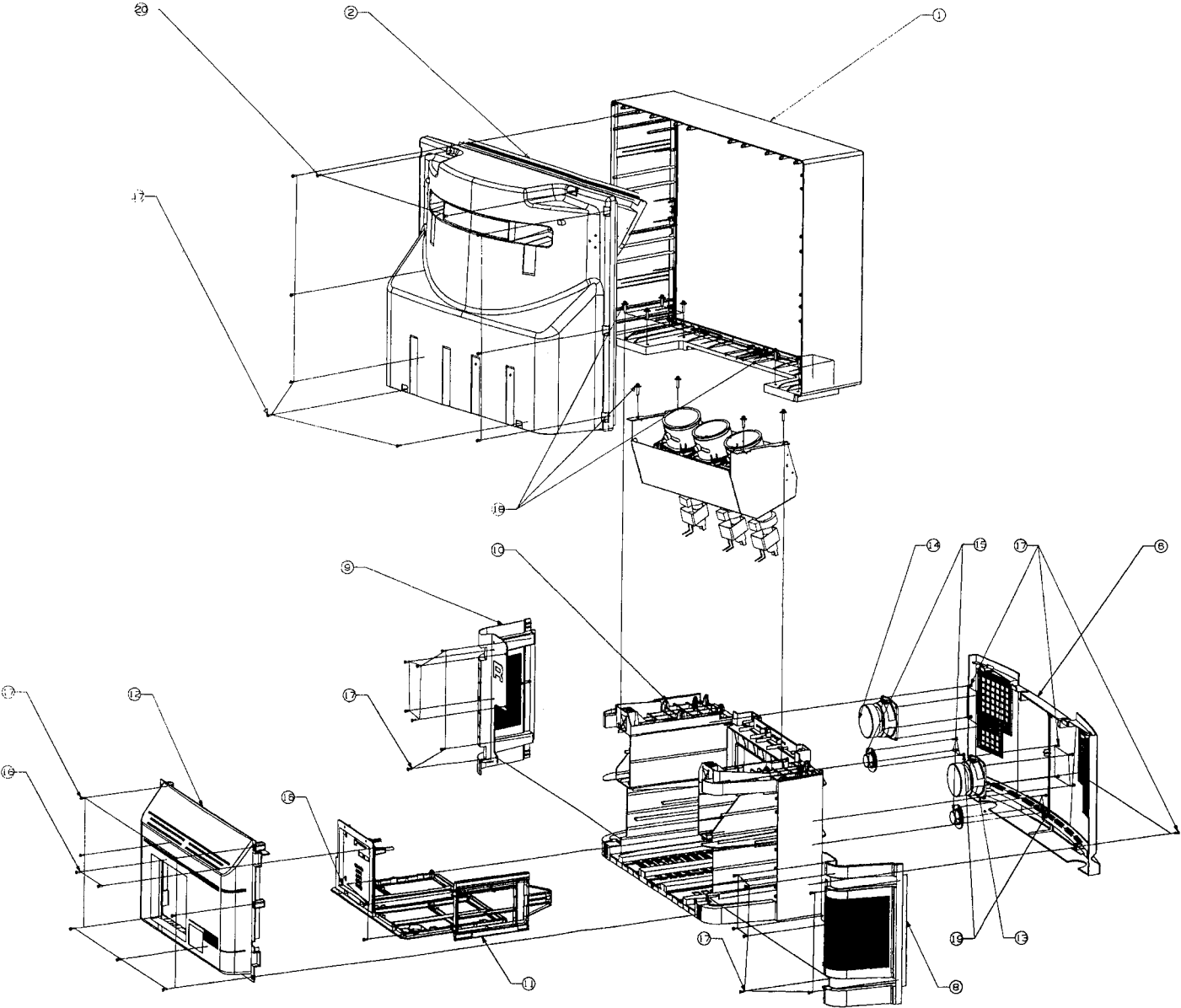
# 8.1 PRINTED CIRCUIT BOARD (PART II)



## 63



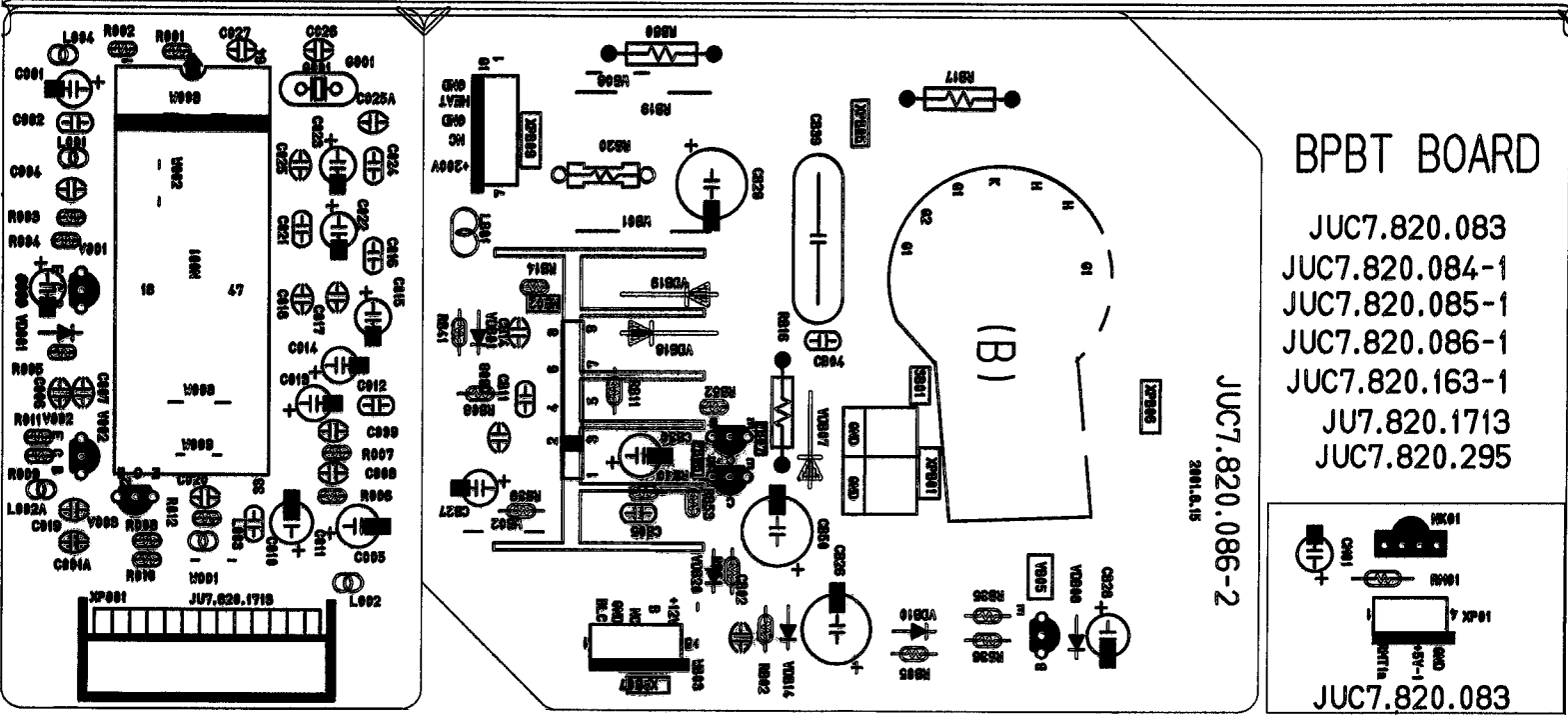
8.3 EXPLODED VIEW



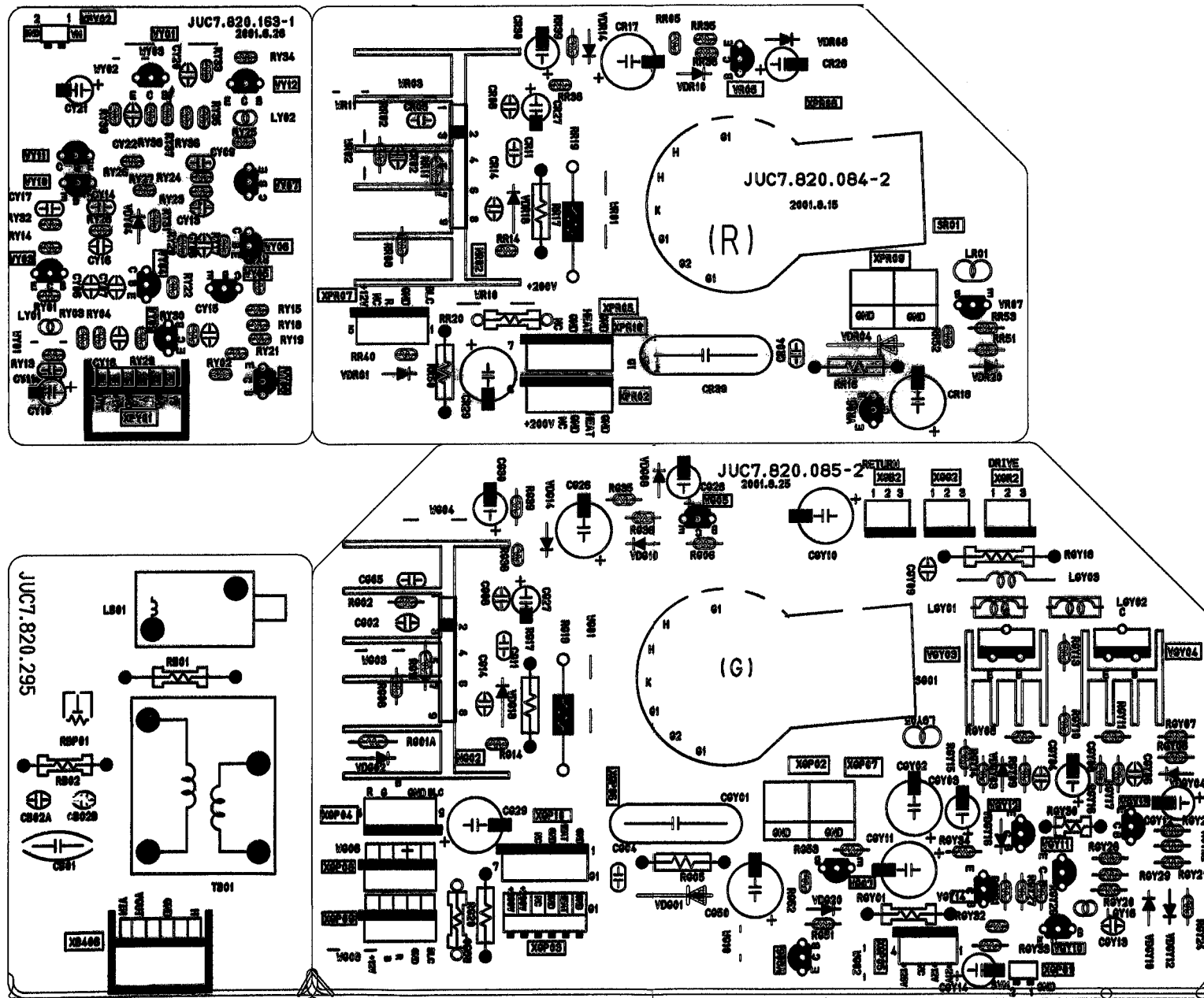
Final Assembly Drawing for 43"

| No. | Code              | Description                        | Quantity |
|-----|-------------------|------------------------------------|----------|
| 1   | JUC6.116.813      | Cover Assembly I                   | 1        |
| 2   | JUC6.116.807      | Rear Cabinet Assembly II           | 1        |
| 3   |                   |                                    |          |
| 4   |                   |                                    |          |
| 5   | JUC6.152.023      | Projection Tube Assembly           | 1        |
| 6   | JUC6.116.320      | Panel Assembly                     | 1        |
| 7   |                   |                                    |          |
| 8   | JUC6.116.748      | Cover Assembly for Audio ( left )  | 1        |
| 9   | JUC6.116.749      | Cover Assembly for Audio ( right ) | 1        |
| 10  | JUS.071.014       | Bottom                             | 1        |
| 11  | JUC5.049.090      | Chassis Assembly                   | 1        |
| 12  | JUS.074.184       | Rear Cover for Chassis             | 1        |
| 13  | JUS.834.085       | Speaker Assembly a                 | 1        |
| 14  | JUS.834.086       | Speaker Assembly b                 | 1        |
| 15  | JUS.834.090       | Speaker Assembly c                 | 2        |
| 16  | Japanese Standard | Tapping Screw 4x16RB/30            | 10       |
| 17  | Japanese Standard | Tapping Screw 4x20BA/HO            | 58       |
| 18  |                   | Combined Screw M3x35W-F            | 12       |
| 19  |                   | Tapping Screw 3x12W35CH            | 6        |
| 20  |                   |                                    |          |
| 21  |                   |                                    |          |
| 22  |                   |                                    |          |
| 23  |                   |                                    |          |
| 24  |                   |                                    |          |

# 8.4 BPBT BOARD (PART I)



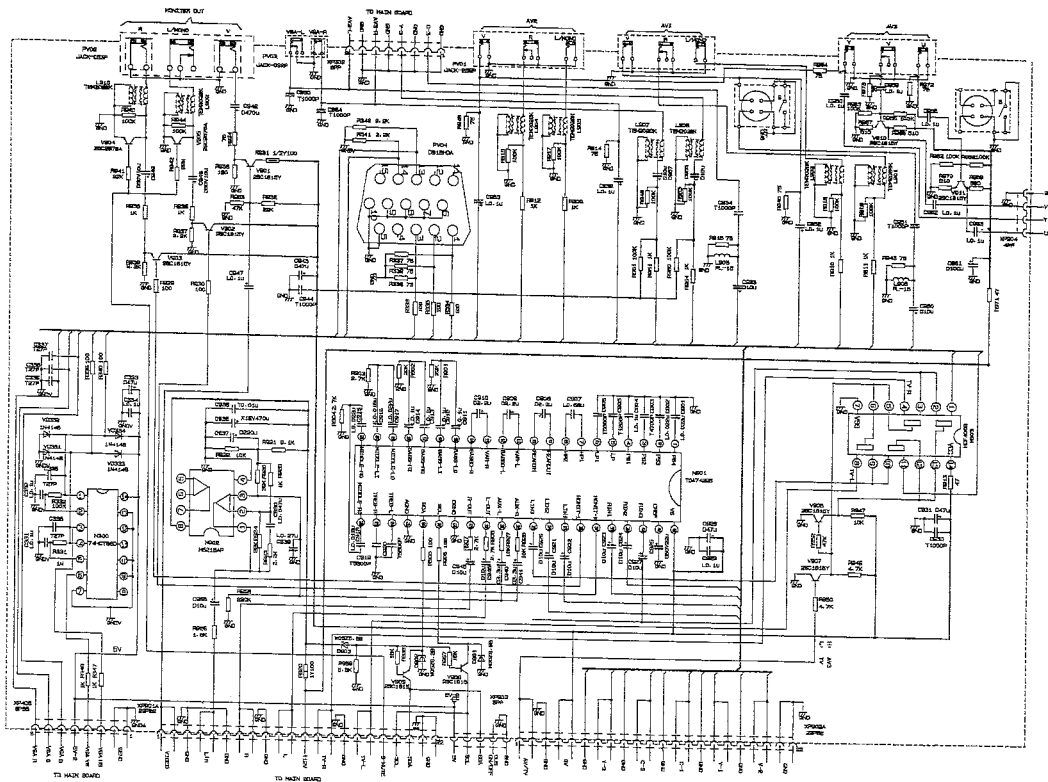
## 8.4 BPBT BOARD (PART II)



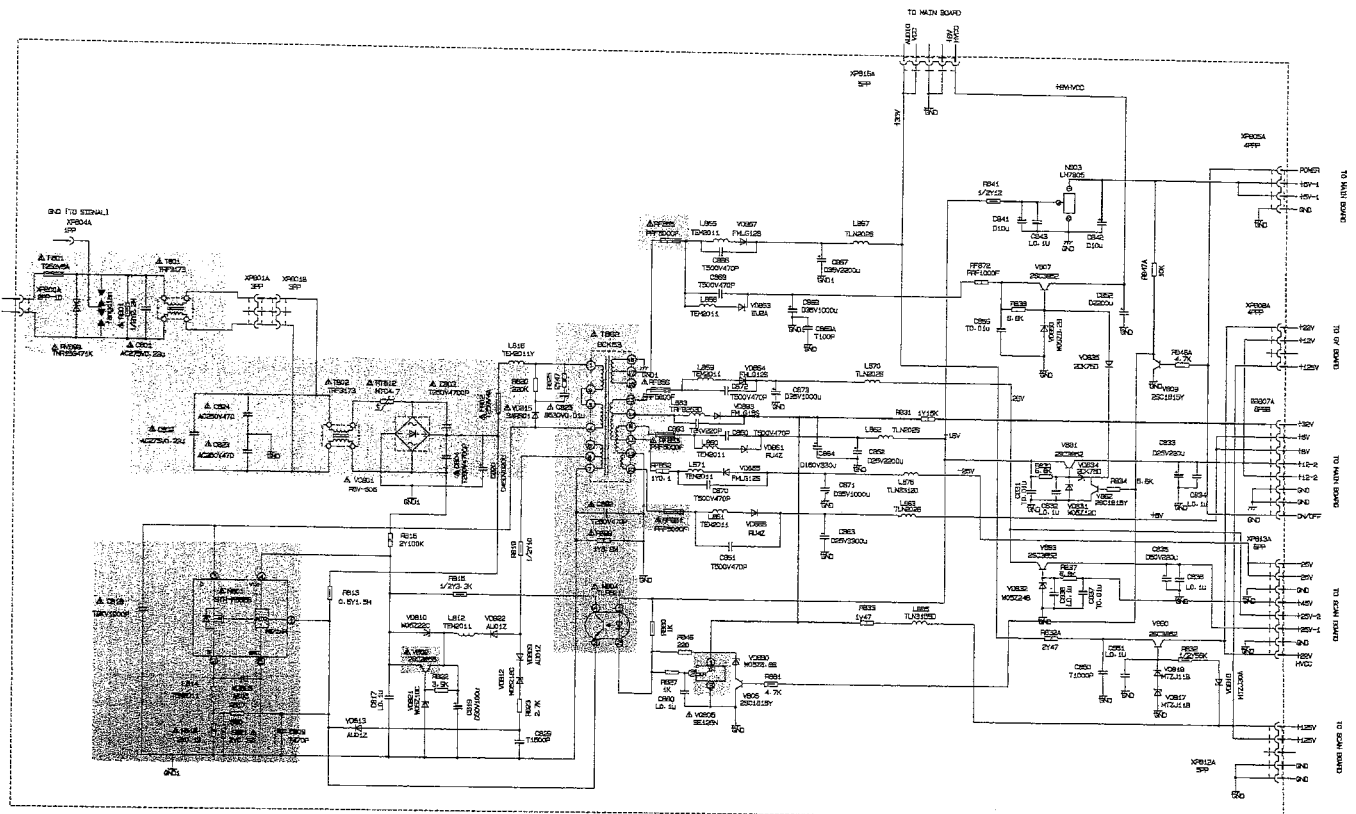
# 8.5 CIRCUIT DIAGRAM

## AV BOARD

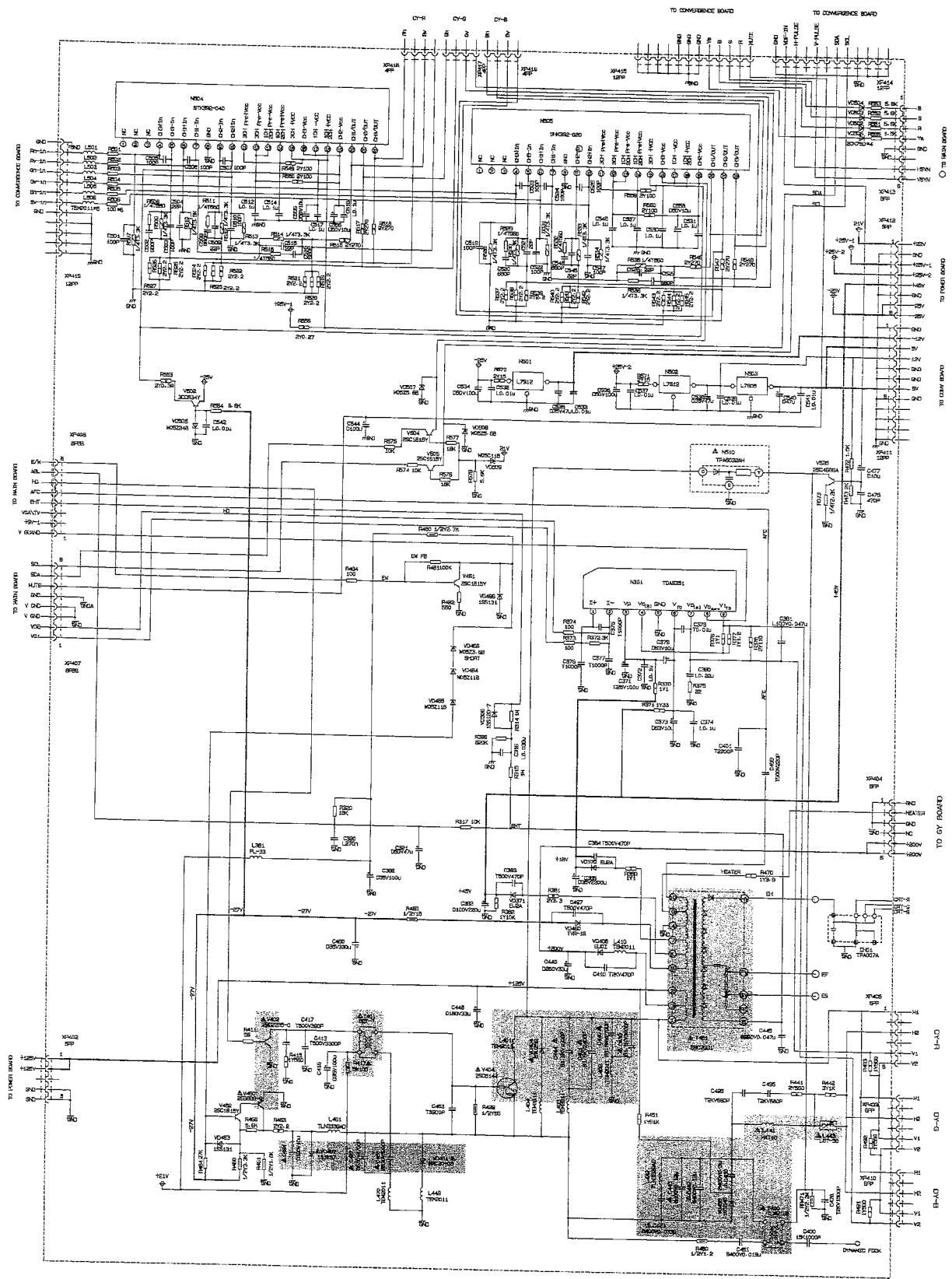
67



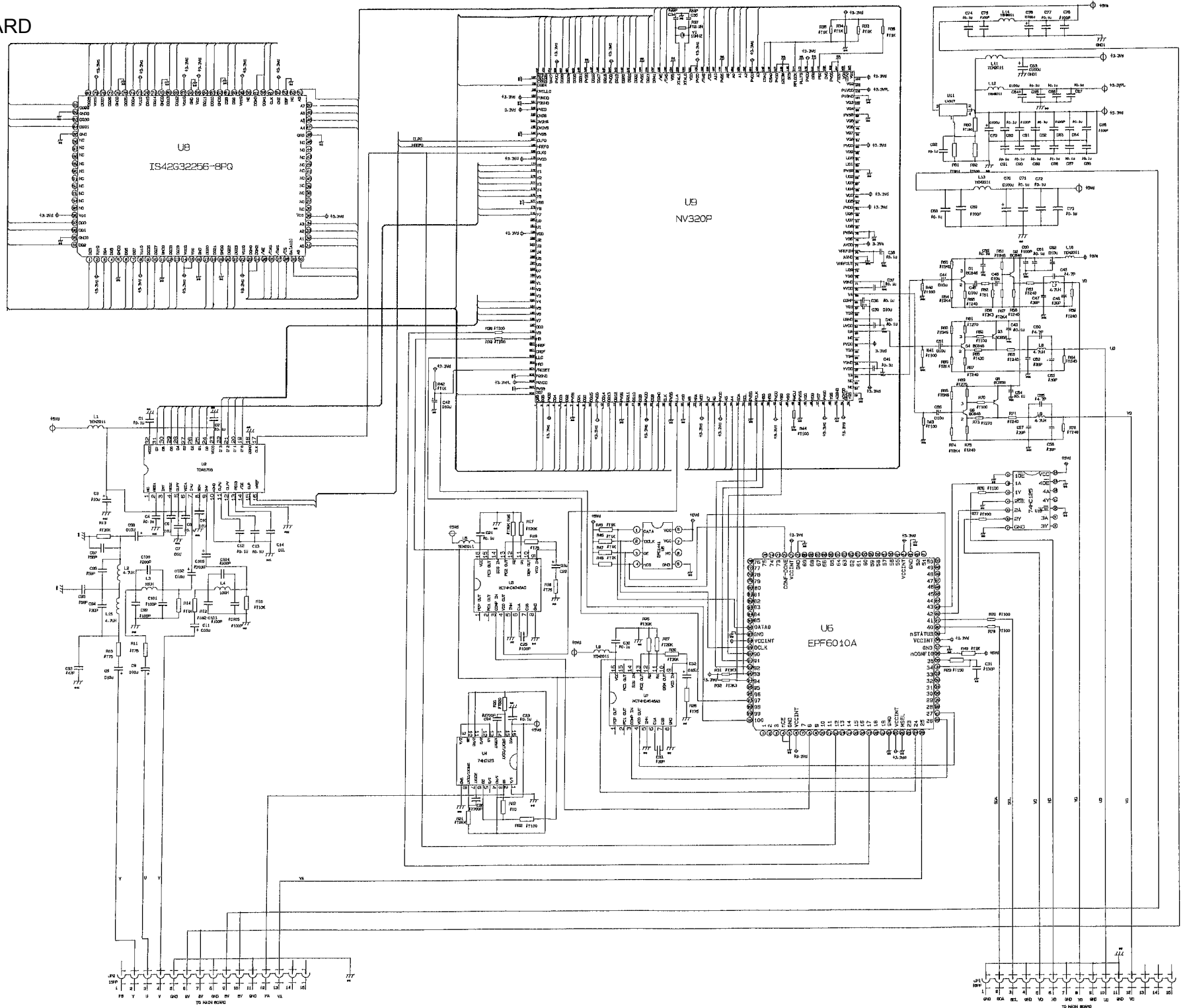
## POWER BOARD



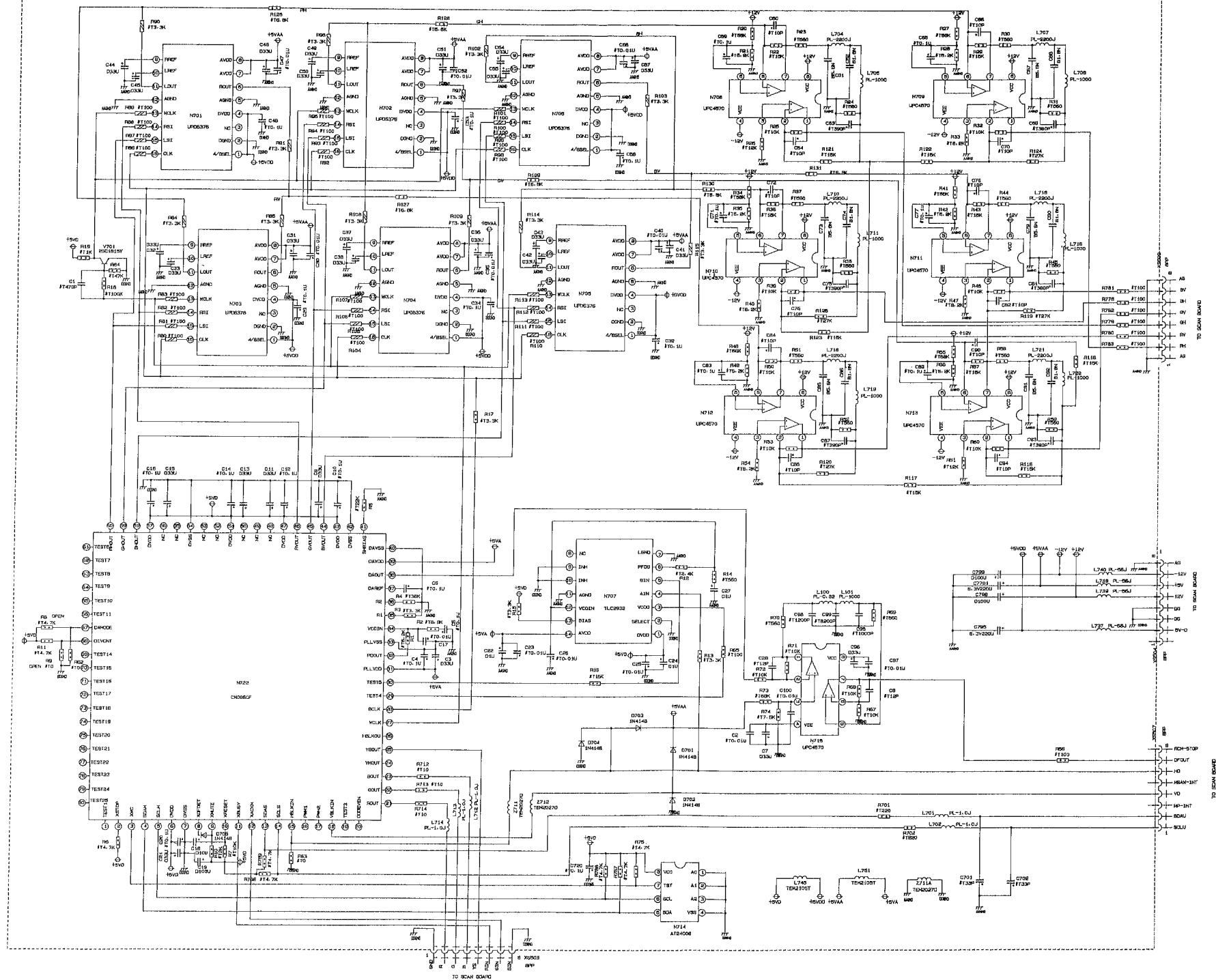
## SCAN BOARD

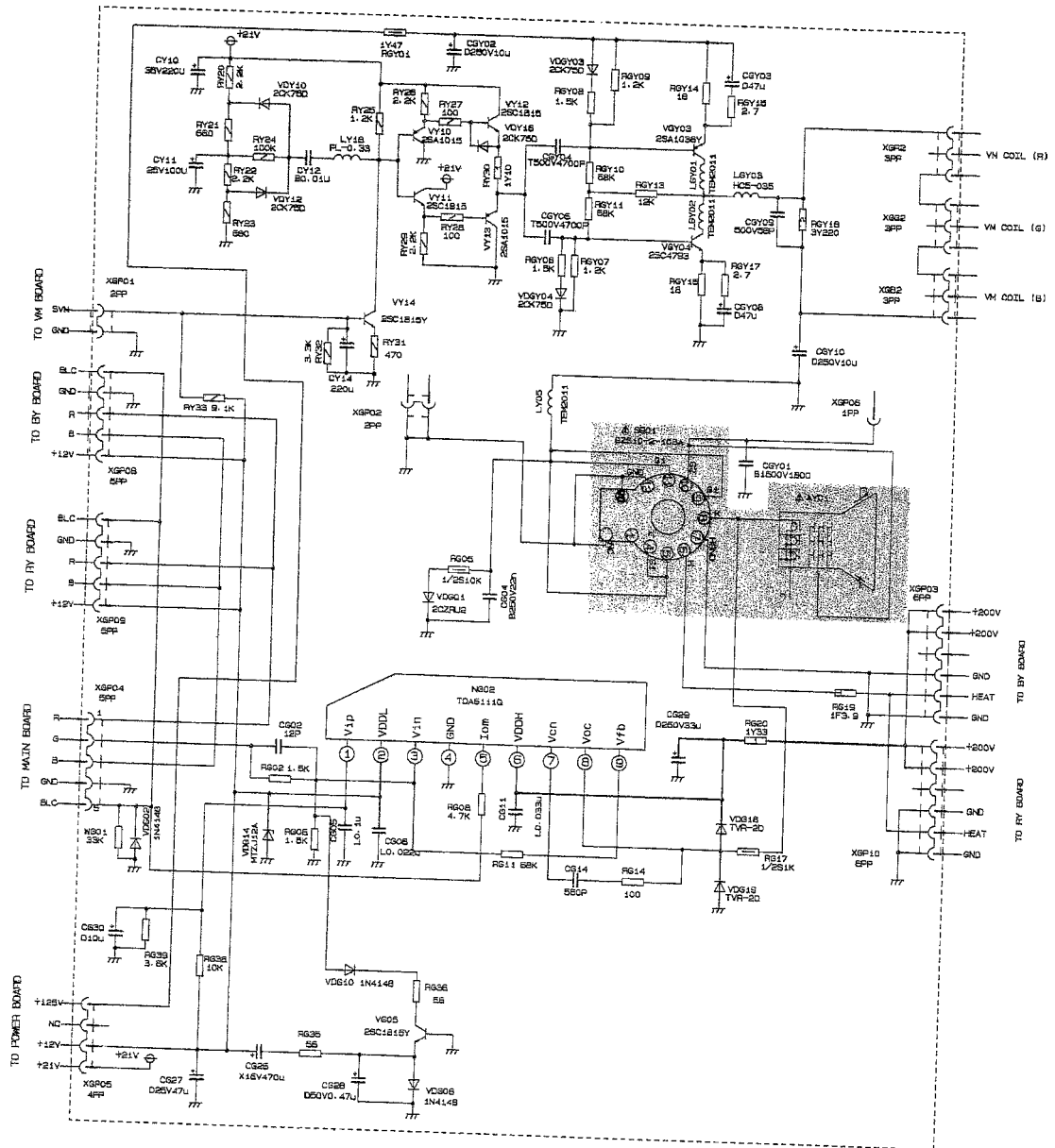


# IPQ BOARD

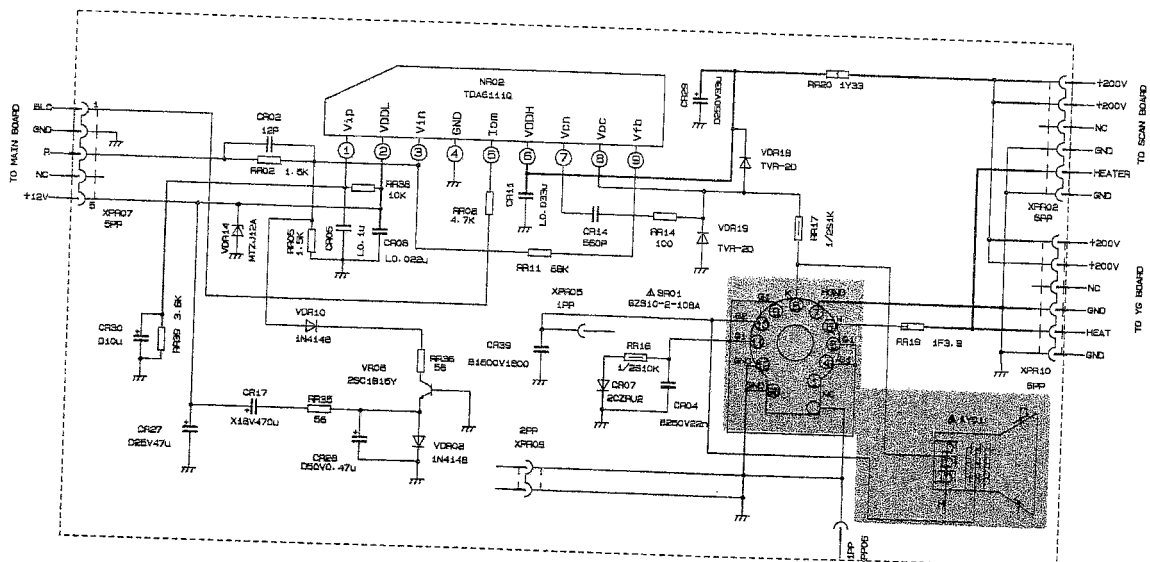


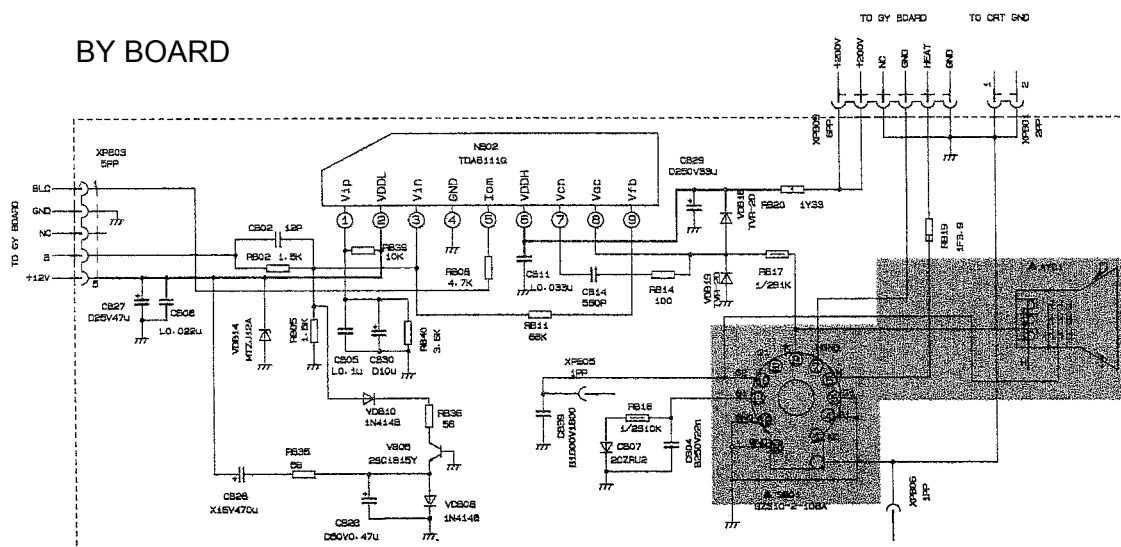
## 70



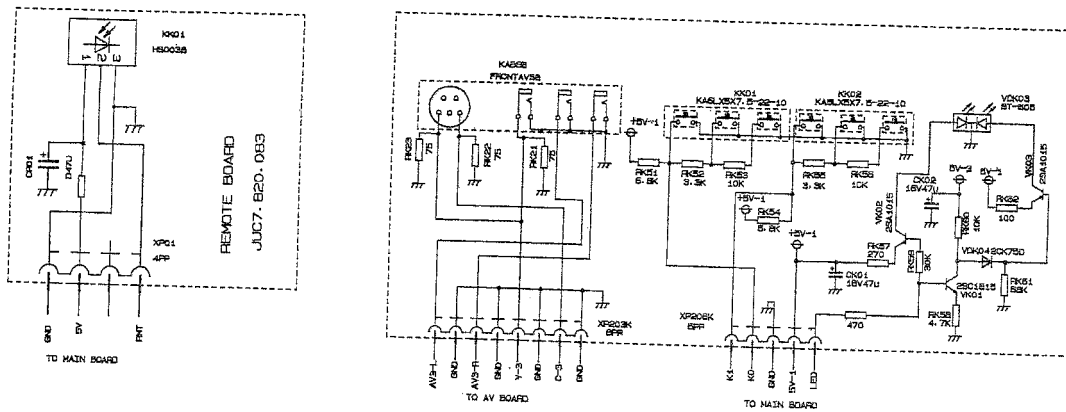


RY BOARD





## K BOARD



## VM BOARD

