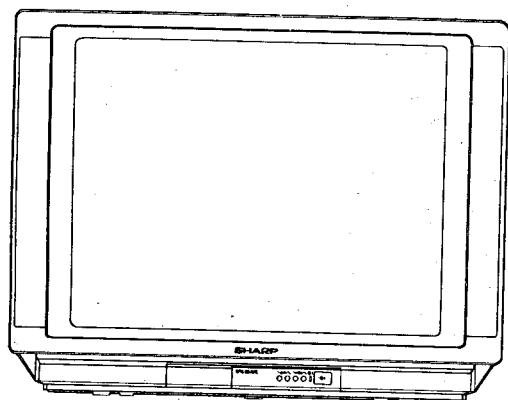


SHARP

SERVICE MANUAL

SELF63DS03S/3

CA10 - CHASSIS



PAL SYSTEM COLOUR TELEVISION

63DS-03S

70DS-03S

MODELS 70DS-05S

In the interests of user safety (required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

ELECTRICAL SPECIFICATIONS

Aerial Input Impedance75 ohm unbalanced
 ConvergenceSelf Converging System
 FocusBipotential electrostatic
 Audio Power Output Rating10+10W (M.P.O.)
 Picture IF Carrier Frequency38.9 MHz
 a) Sound IF Carrier Frequency33.4 MHz
 b) Sound IF Carrier Frequency33.16 MHz
 Colour Sub-Carrier Frequency34.47 MHz
 (Nominal)

Power Input220/240 Volts AC 50 Hz
 Power Consumption at Stand-by3W
 Power Consumption90 Wh
 Speakers Size13cmX6cm
 Speaker Coil Impedance8 ohm
 Sweep DeflectionMagnetic
 Tuning Ranges48.25 MHz + 855.5 MHz
 CATV Special channels

Specifications are subject to change without prior notice .

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis.
 To prevent electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified service personnel.

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be carried out by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by connecting a 10 k ohm resistor in series with an insulated wire (such as test probe) between picture tube ground tag and high voltage lead. (AC line cord should be disconnected from AC outlet).

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed.

1. When repairing the circuit, be sure not to increase the high voltage to more than 30.0 kV (at beam 1000 μ A) for the set.
2. To keep the set in a normal operation, be sure to make it function on 23.5kV $\pm$ 1.5kV (at beam 1000 μ A) in the case of the set. The set has been factory adjusted to the above mentioned high voltage. If there is a possibility that high voltage fluctuates as result of the repairs, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types or brands which may cause excess X-Ray radiation.

BEFORE RETURNING THE RECEIVER

In addition to the checks necessary as a result of a repair having been carried out, the following additional safety checks should also be made before returning the units to the user.

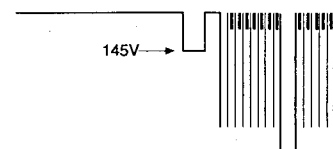
1. Inspect all lead insulation to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, insulation resistor-capacity networks, mechanical insulators, etc.

SERVICE ADJUSTMENTS

All the adjustments required for this chassis will be done in Service Mode, except G2 and Focus.

• G2 ADJUSTMENT

1. Receive cross hatch pattern signal.
2. Set contrast to 80/100 and brightness to 40/100.
3. Connect the oscilloscope to the red cathode and adjust G2 to read 145V on the sensor pulse as in below drawing:



OV _____

NOTE:
Oscilloscope should be adjusted for vertical TV field trigger and synchronized with video signal.

• SERVICE MODE FUNCTION

This mode function is provided to assist with the settings of those adjustment that may vary from one Picture Tube to another, or between models.

In order to use the Service Mode

1. Connect Test Pattern signal to antenna terminal.
2. Press main switch to "OFF".
3. Press volume-down and channel-up buttons and main switch to "ON" simultaneously.
4. Service mode is now entered.

The required adjustments can then be made from the Remote Control Unit.

The only buttons required are the following:

Up/Down-channel for movement in adjustment options menu; Up/Down-volume are used to carry out an adjustment in said menu; ON/OFF is used to memorize a new adjustment.

To exit service mode, press main switch to off.

Adjustment menu is as follows:

- | | |
|-----------------------|--|
| — SERVICE SOFTWARE | — RED GAIN |
| — IF PLL ADJUSTMENT | — GREEN GAIN |
| — AGC TAKE OVER POINT | — BLUE GAIN |
| — EAST WEST WIDTH | — ALTER NVM PAG |
| — HORIZONTAL SHIFT | — ALTER NVM POS |
| — VERTICAL LINEARITY | — ALTER NVM VAL |
| — VERTICAL AMPLITUDE | — TELETXT MIX MODE CONTRAST (ONLY FOR 70DS05S) |
| — VERTICAL SHIFT | — TELETXT CONTRAST (ONLY FOR 70DS05S) |
| — S. CORRECTION | — OSD CONTRAST (ONLY FOR 70DS05S) |
| — EAST WEST PARABOLA | — OPC VALUE (ONLY FOR 70DS05S) |
| — EAST WEST CORNER | — AUTOINSTALLATION ON/OFF |
| — EAST WEST TRAPEZIUM | |

• IF PLL ADJUSTMENT

- Receiver the "COLOUR BAR" signal, CH 69 (855.25 Mhz).
- Push POWER button on Remote Control. Setting is made automatically.
- To exit Service Mode, press main switch to OFF.

• AGC TAKE OVER POINT

- Receive the "COLOUR BAR" signal (Signal strength: 57 dB/ μ V)
- Push CH up button. Setting is made automatically.
- To exit Service Mode, press main switch to OFF.

GEOMETRY ADJUSTMENT PROCEDURE

Adjustment Note:

The procedure for making adjustments to vertical corrections is as follows:

- Adjust VERTICAL LINEARITY
- Adjust S. CORRECTION
- Adjust VERTICAL SHIFT
- Adjust VERTICAL AMPLITUDE

The procedure for making adjustments to horizontal corrections is as follows:

- Set E-W WIDTH to minimum
- Adjust HORIZONTAL SHIFT
- Adjust E-W PARABOLA
- Adjust E-W WIDTH
- Adjust E-W TRAPEZIUM
- Adjust E-W CORNER

• EAST - WEST WIDTH

- Receive Philips pattern signal.
- When volume-up button is pressed, horizontal scanning increases.
- When volume-down button is pressed, horizontal scanning decreases.
- Adjust the horizontal amplitude to obtain 9% overscan (fig. 1).

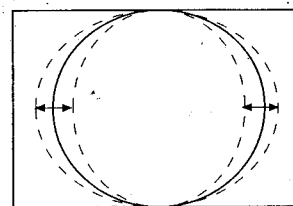


Fig. 1

• HORIZONTAL SHIFT

- Receive Philips pattern signal.
- When volume-up button is pressed, picture moves to the left.
- When volume-down button is pressed, picture moves to the right.
- Adjust the horizontal location to obtain picture centering (fig. 2).

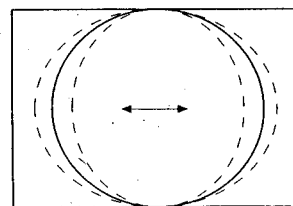


Fig. 2

• VERTICAL SLOPE

- Receive center cross chart from pattern generator.
- Adjust horizontal line off the cross figure to coincide with the edge of the black area in the center of C.R.T. (fig. 3).

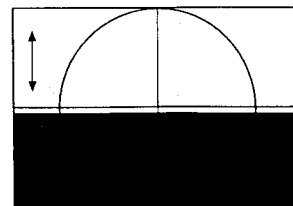


Fig. 3

• VERTICAL AMPLITUDE

- Receive Philips pattern signal.
- When volume-up button is pressed, vertical size picture increases.
- When volume-down button is pressed, vertical size of picture decreases.
- Adjust the vertical size to obtain overscan (fig. 4).

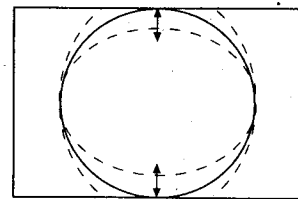


Fig. 4

• VERTICAL SHIFT

- Receive Philips pattern signal.
- When volume-up button is pressed, picture moves up.
- When volume-down is pressed, picture moves down.
- Adjust the horizontal location to obtain picture centering (fig. 5).

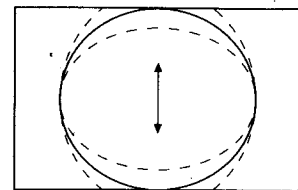


Fig. 5

• S-CORRECTION

- Receive Philips pattern signal.
- When volume-up button is pressed, upper and lower scanning decreases, and center scanning increases.
- When volume-down button is pressed, upper and lower scanning increases, and center scanning decreases.
- Adjust the S-correction to obtain a balance between upper, lower and center. (fig. 6).

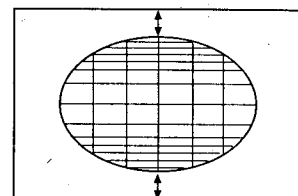


Fig. 6

• EAST - WEST PARABOLA

- Receive Philips pattern signal.
- When volume-up button is pressed, side pincushion changes from pincushion shape.
- When volume-down button is pressed, side pincushion changes from barrel shape.
- Adjust the E-W PARABOLA to obtain condition as (fig. 7).

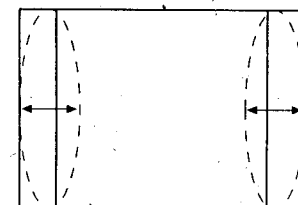


Fig. 7

• EAST - WEST CORNER

- Receive Philips pattern signal.
- When volume-down button is pressed, side pincushion changes from pincushion shape.
- When volume-up button is pressed, side pincushion changes from barrel to pincushion shape.
- Adjust the E-W CORNER to obtain condition as in (fig. 8).

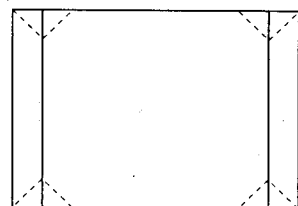


Fig. 8

• EAST - WEST TRAPEZIUM

- Receive Philips pattern signal.
- When volume-up button is pressed, side pincushion changes.
- When volume-down button is pressed, side pincushion changes.
- Adjust the E-W TRAPEZIUM to obtain condition as in (fig. 9).

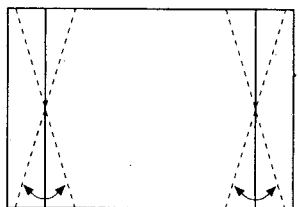


Fig. 9

COLOUR ADJUSTMENT

The following adjustments are only required when the Picture Tube is changed.

• RED GAIN / GREEN GAIN / BLUE GAIN

- a) Using brightness and contrast buttons, select a luminance of ≈ 110 NITS.
- b) Operate again in Service Mode and select location RED GAIN / GREEN GAIN / BLUE GAIN, to obtain colour coordinates:

$$X = 0.290 \pm 0.015$$

$$Y = 0.284 \pm 0.015$$

To increase press volume-up button and to decrease press volume-down button

RED GAIN	alter "X" coordinate
GREEN GAIN	alter "Y" coordinate
BLUE GAIN	alter "X" and "Y" coordinate

- c) The changes introduced can be memorized by pressing button  on TV set.
- d) Exit Service Mode and check colour coordinates "X" and "Y" at 20 and 110 NITS. It may be necessary to repeat procedure 1 and 2 of COLOUR ADJUSTMENT.

ACCESS TO NVM

Press CHA to move in the following sequence:

ALTER NVM PAG → ALTER NVM POS → ALTER NVM VAL

to alter presetting adjustments, press up/down-volume buttons on ALTER NVM VAL.

⚠ CAUTION: Do not change NVM VALUE to avoid risk of serious damages to TV set.

CONTRAST ADJUSTMENT (Only for 70DS05S)

Up/Down-volume buttons are used to adjust the contrast of the following items:

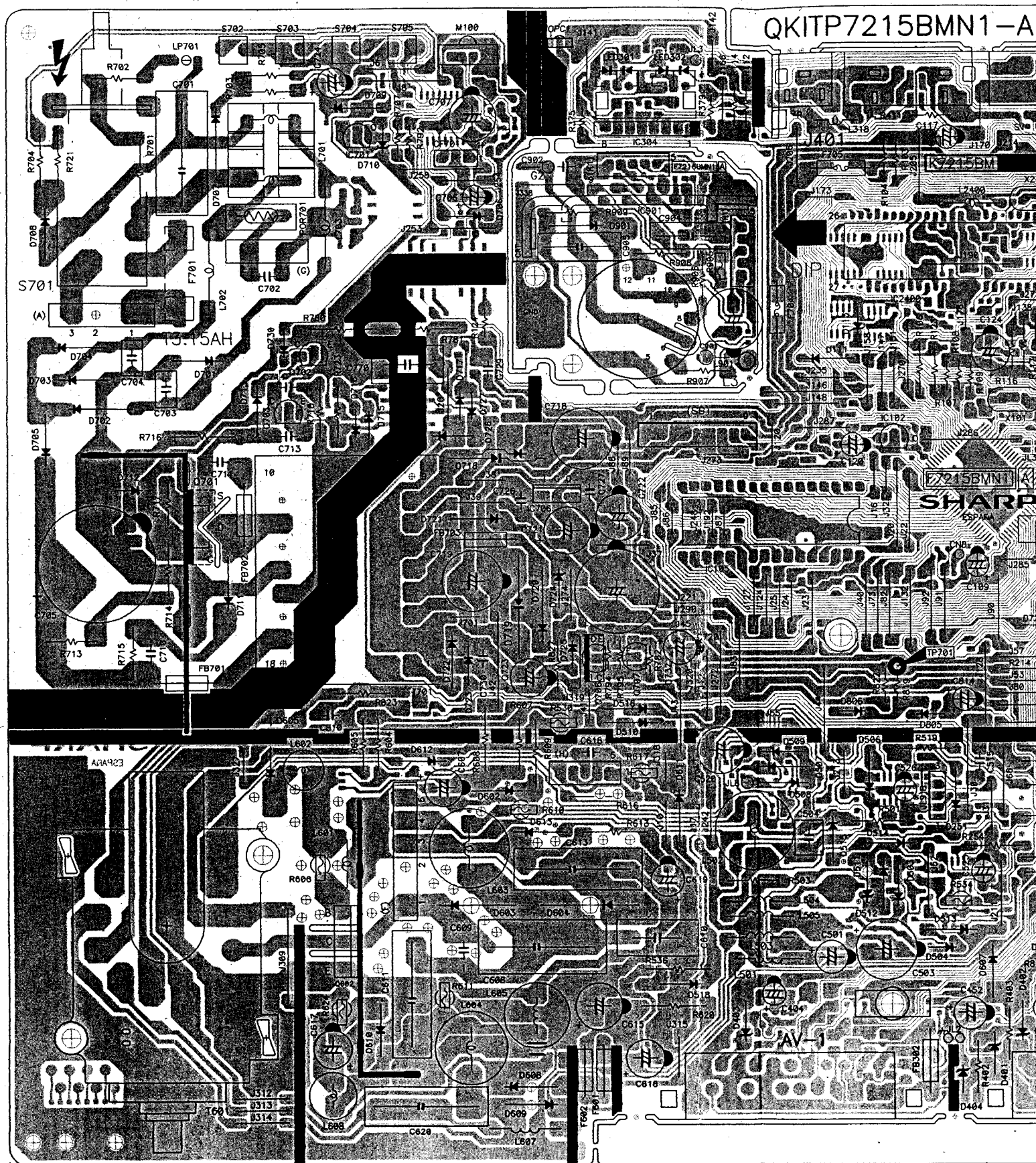
- TELETEXT MIX MODE CONTRAST
- TELETEXT CONTRAST
- OSD CONTRAST

OPC VALUE (Only for 70DS05S)

Shows reading of detected illuminated value by O.P.C. (Optical Picture Control) to check function.

AUTO INSTALLATION OFF/ON

When ON is selected, the TV will perform the autoinstallation sequence as soon as service mode is removed.



1/2 PWB-A / 1/2 PWB-B

2 3 4 5 6 7 8

6

7

8

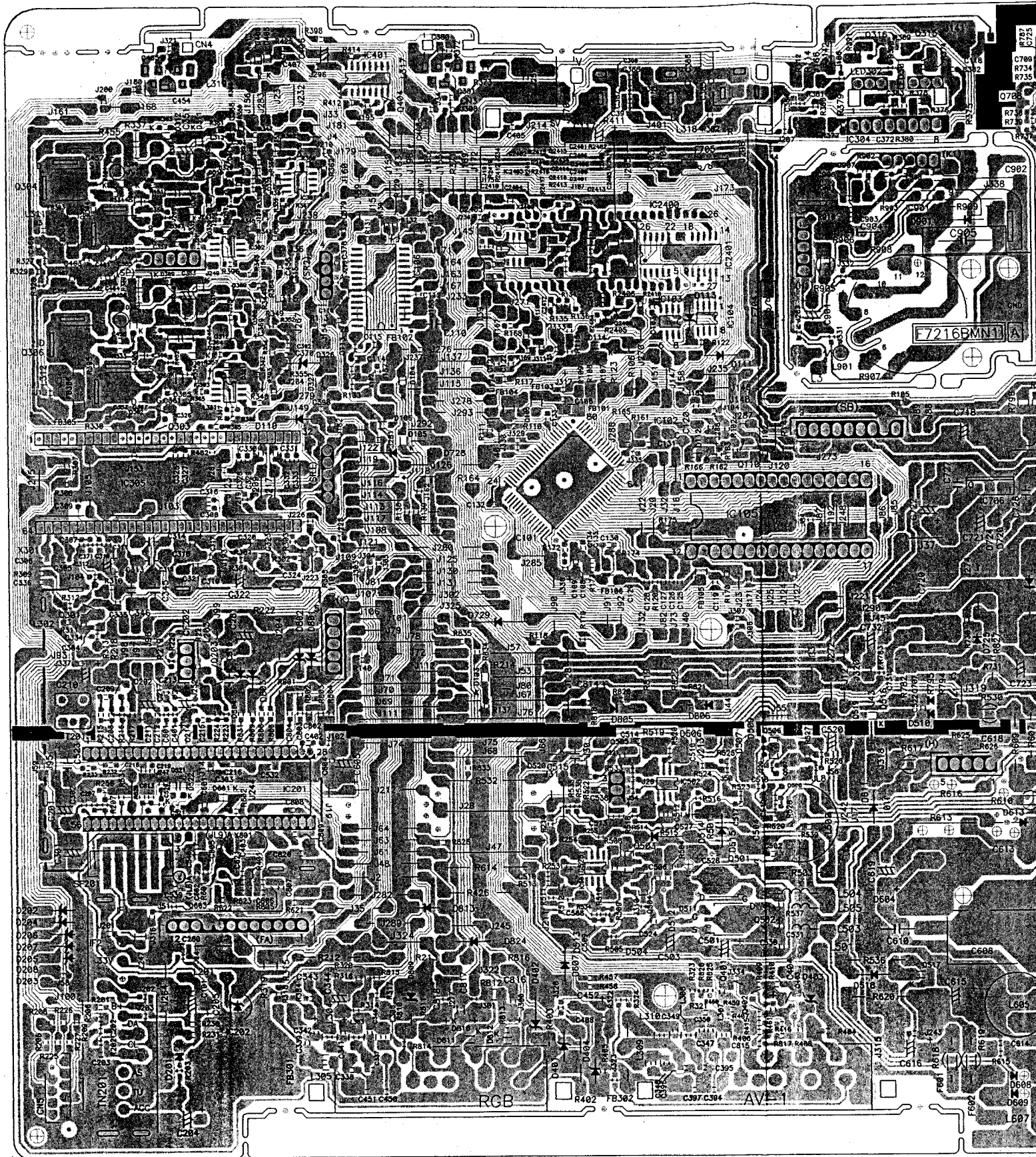
9

10

11

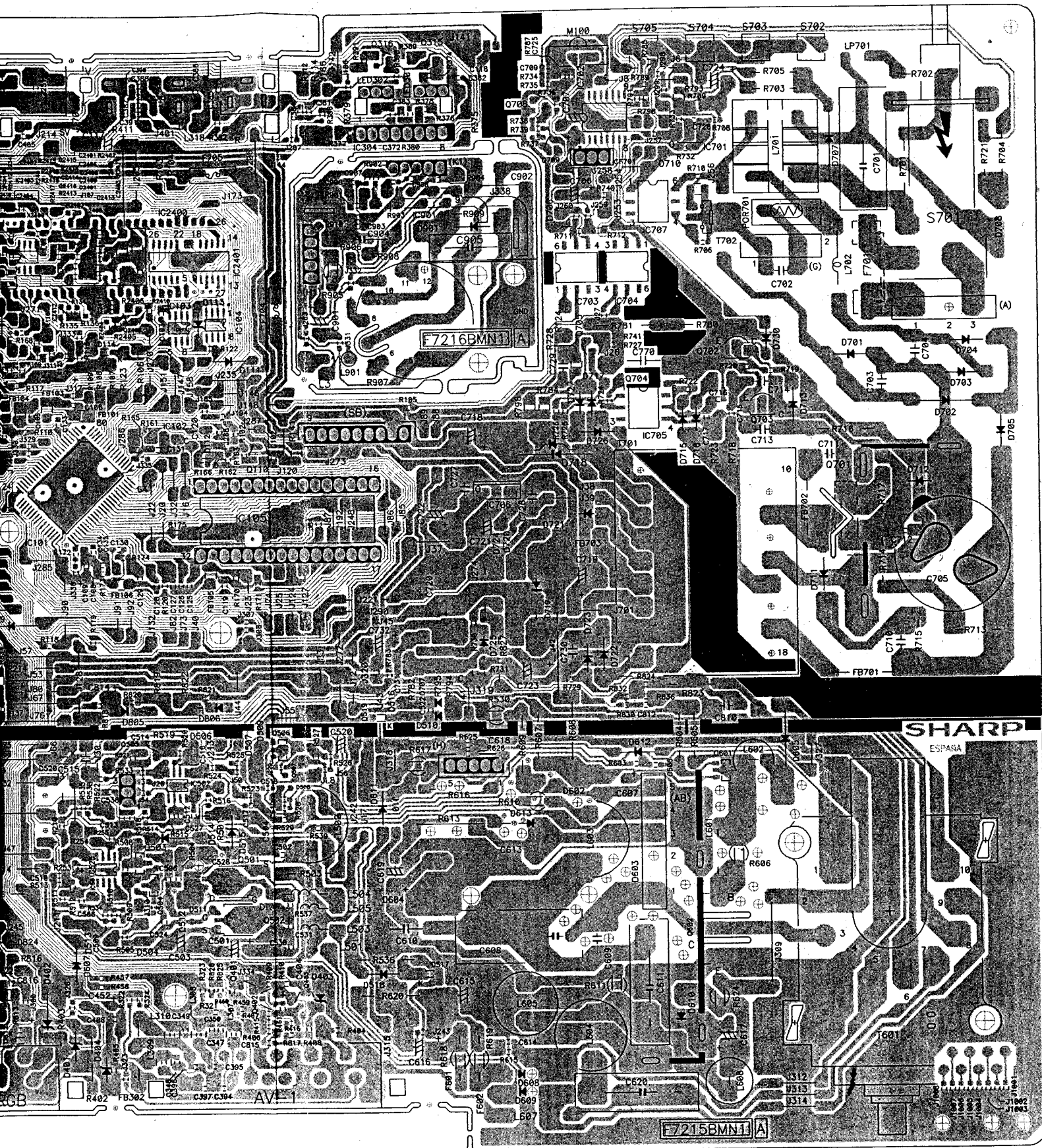
12

PRINTED WIRING BOARDS



1/2 PWB-A / 1/2 PWB-B

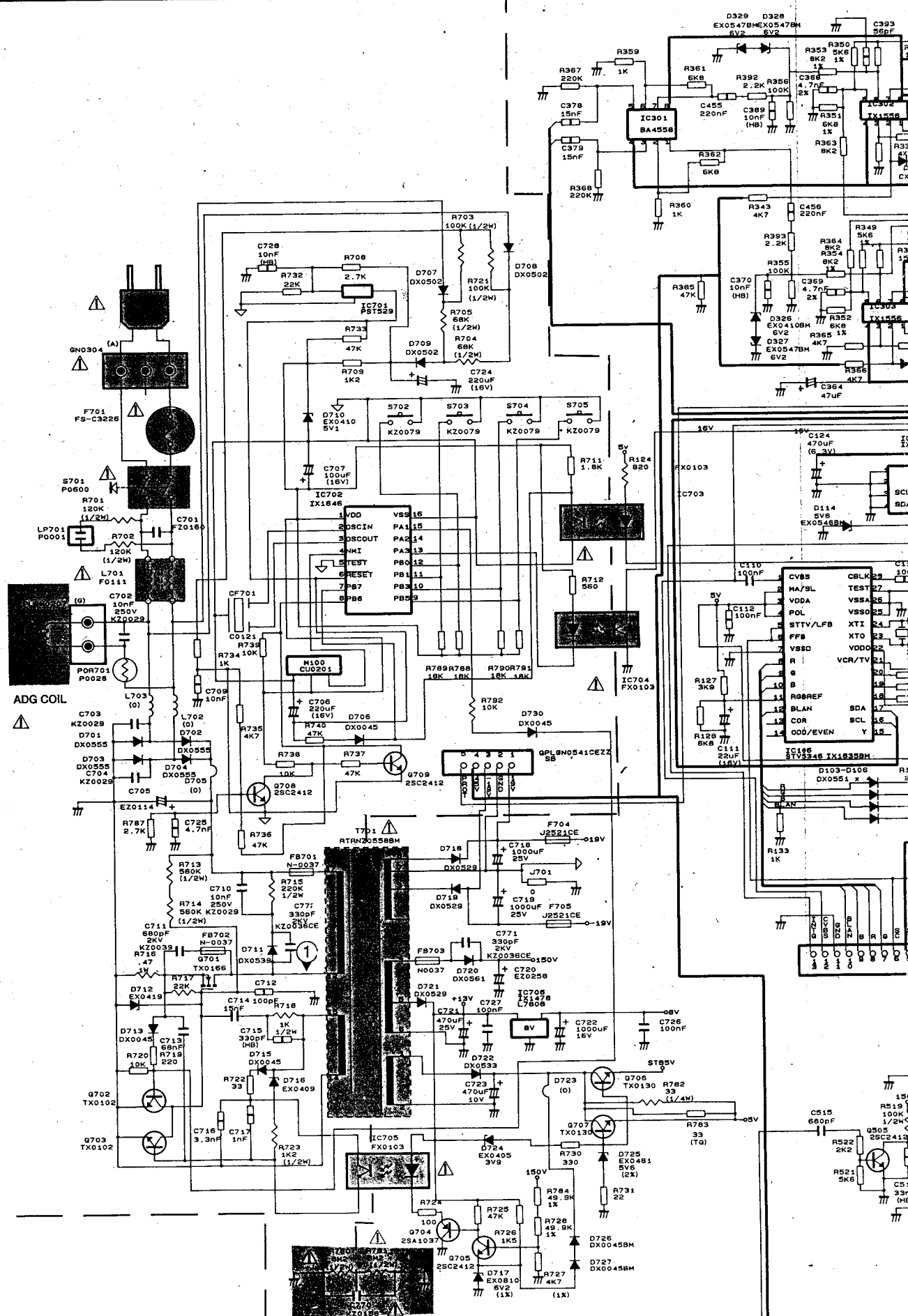
2 3 4 5 6 7 8

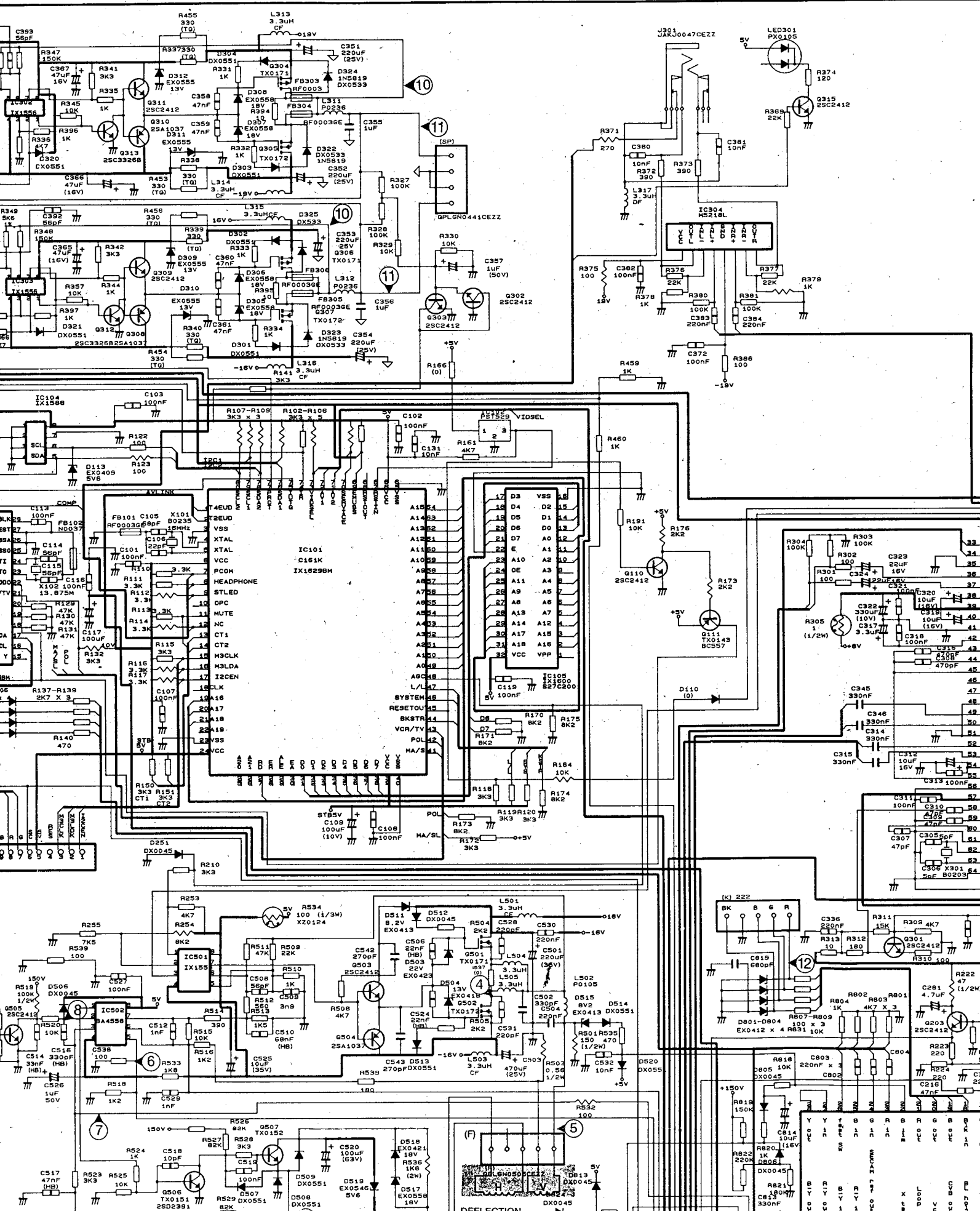


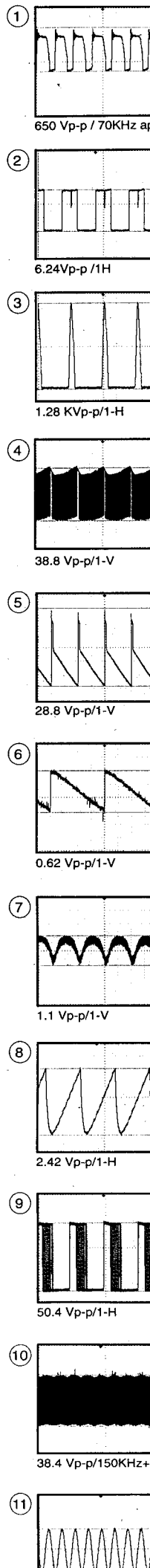
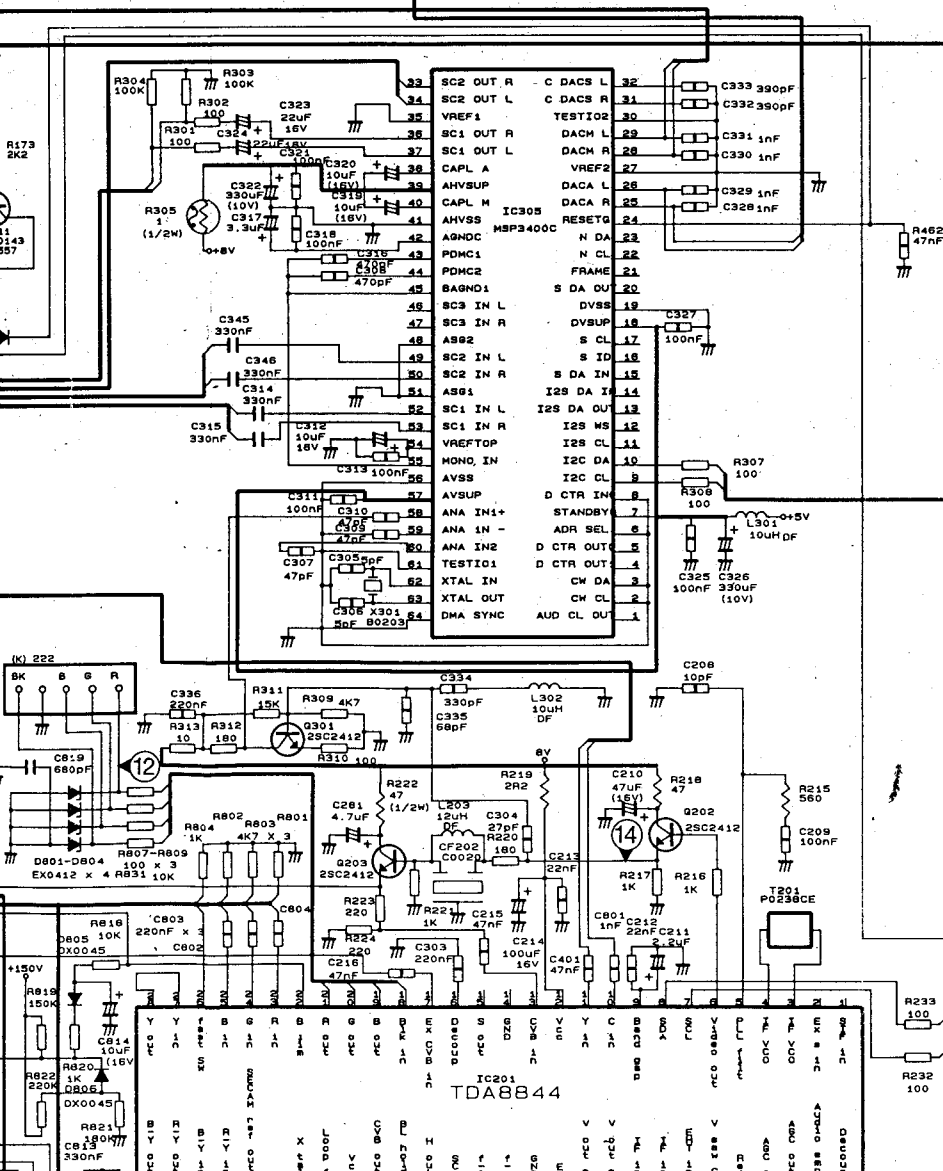
1/2 PWB-A / 1/2 PWB-B

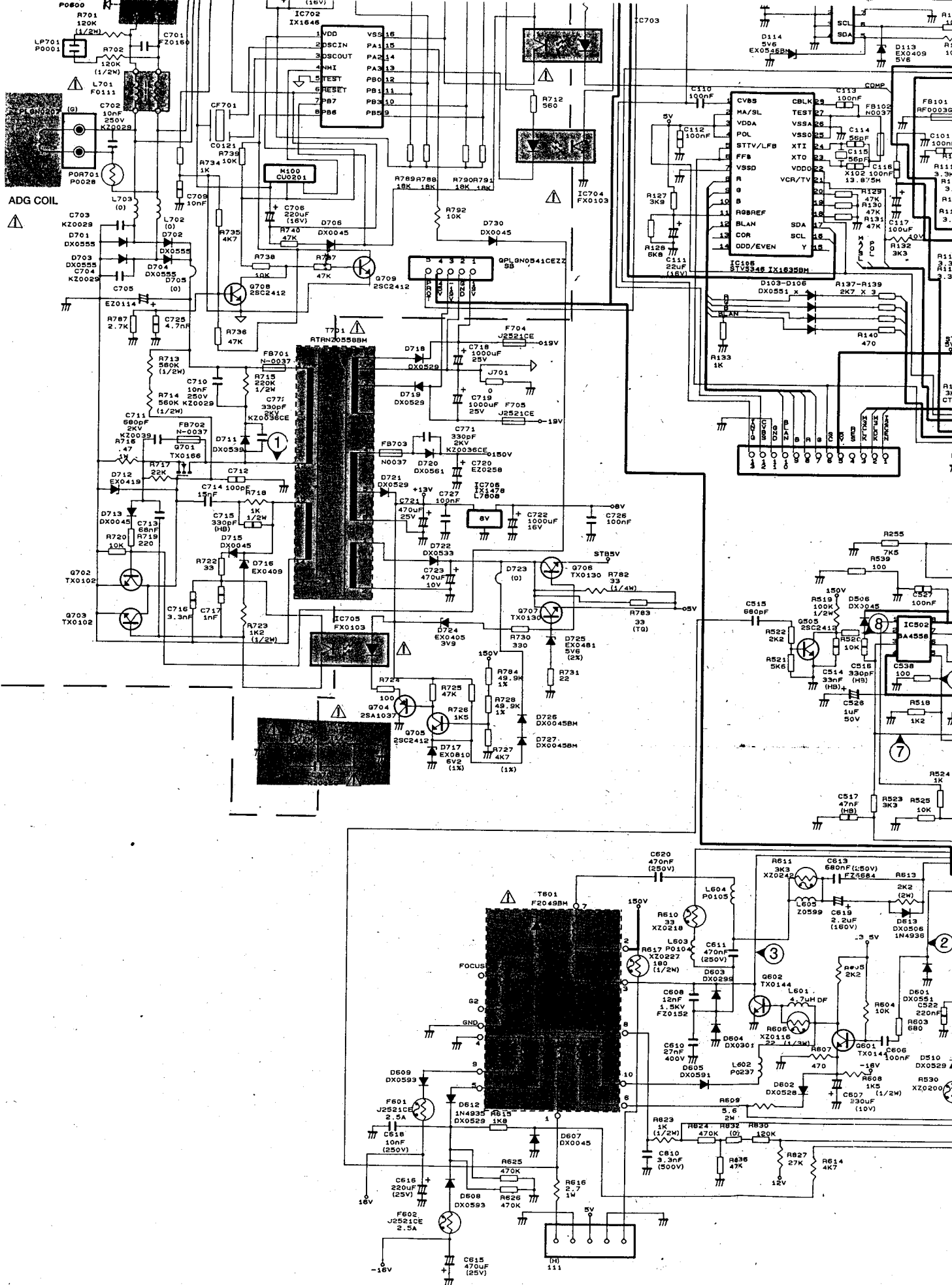
5 6 7 8 9 10 11 12

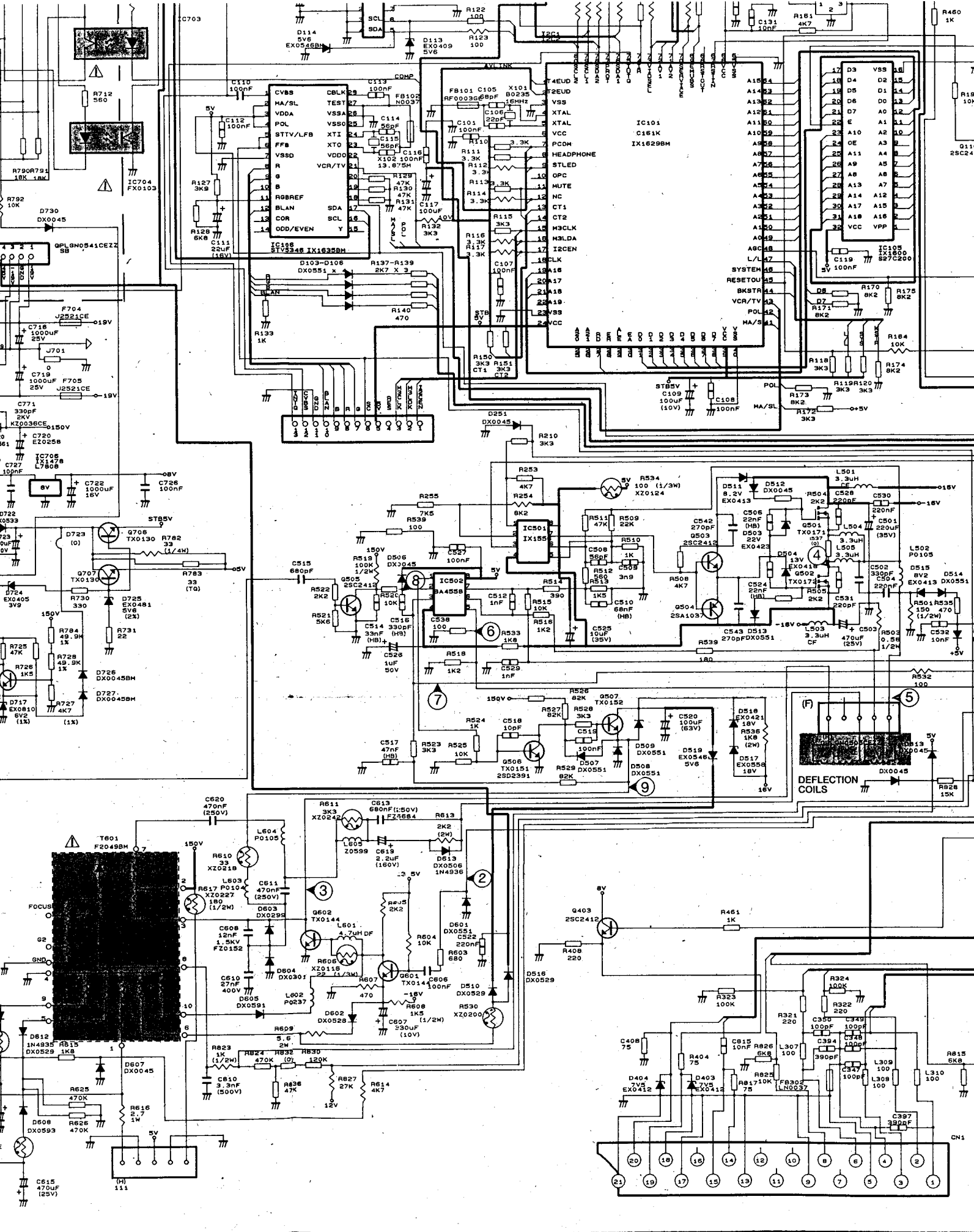
SCHEMATIC DIAGRAM 63/70 DS-03S







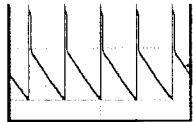
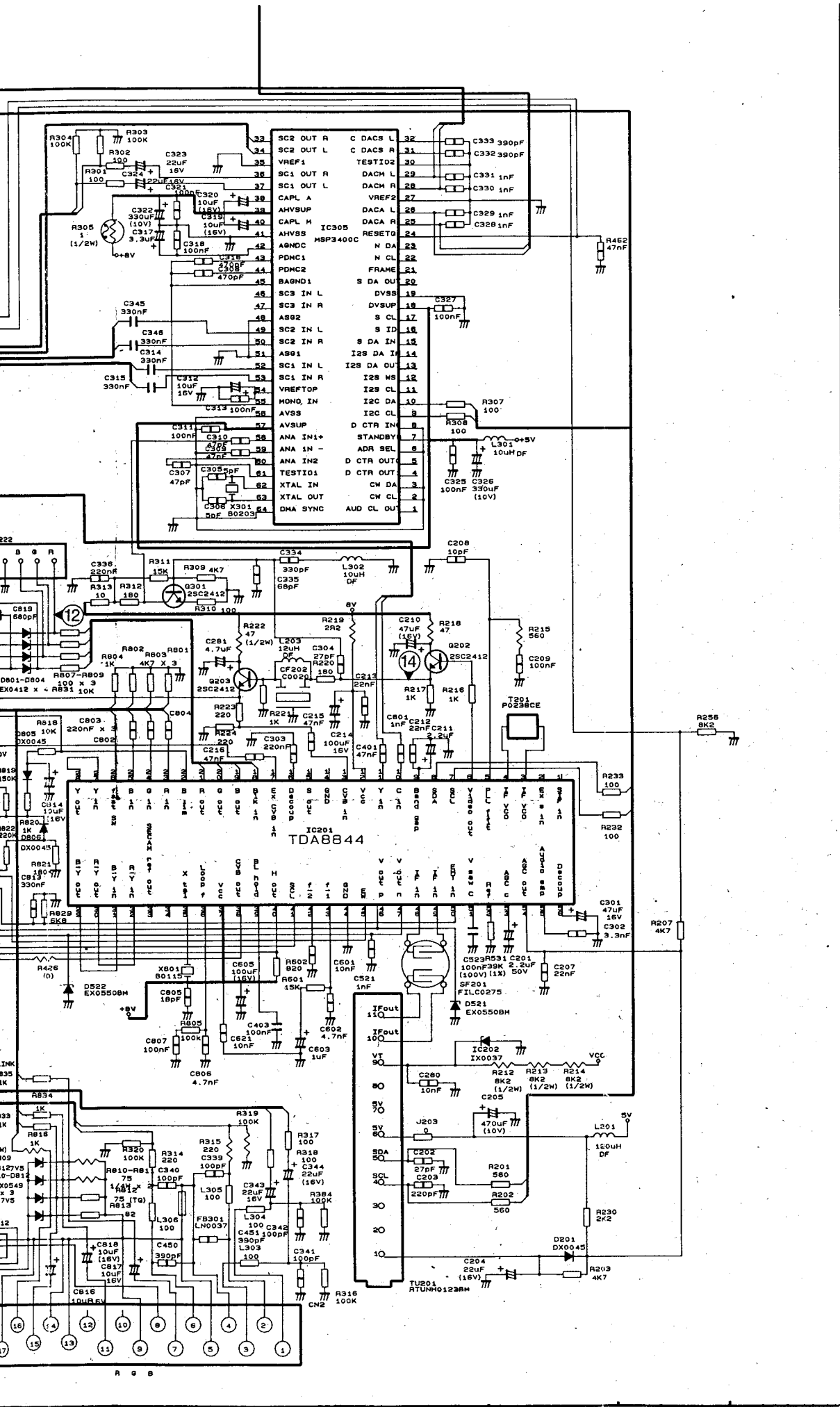




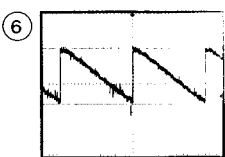
PWB-A / PWB-B



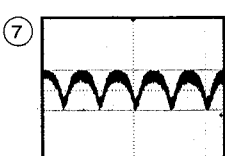
10



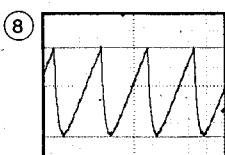
28.8 Vp-p/1-V



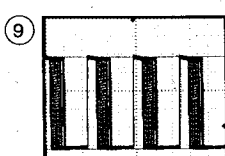
0.62 Vp-p/1-V



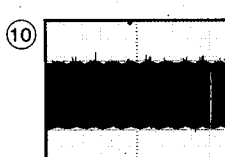
1.1 Vp-p/1-V



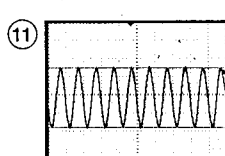
2.42 Vp-p/1-H



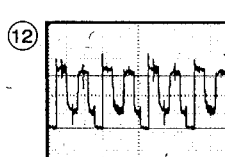
50.4 Vp-p/1-H



38.4 Vp-p/150KHz+AUD



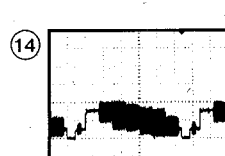
16.4 Vp-p/AUDIO



2 Vp-p/1-H



118 Vp-p/1-H

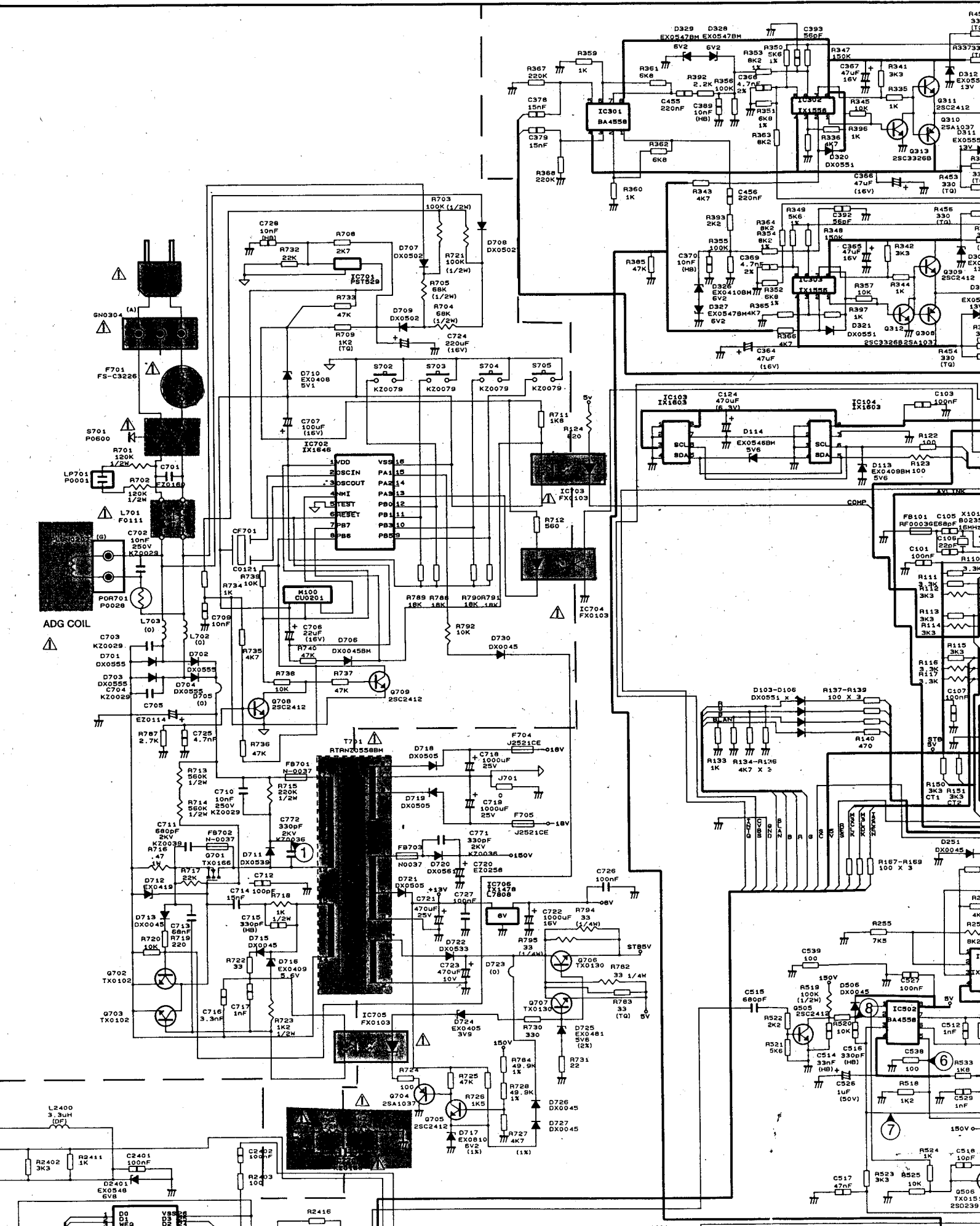


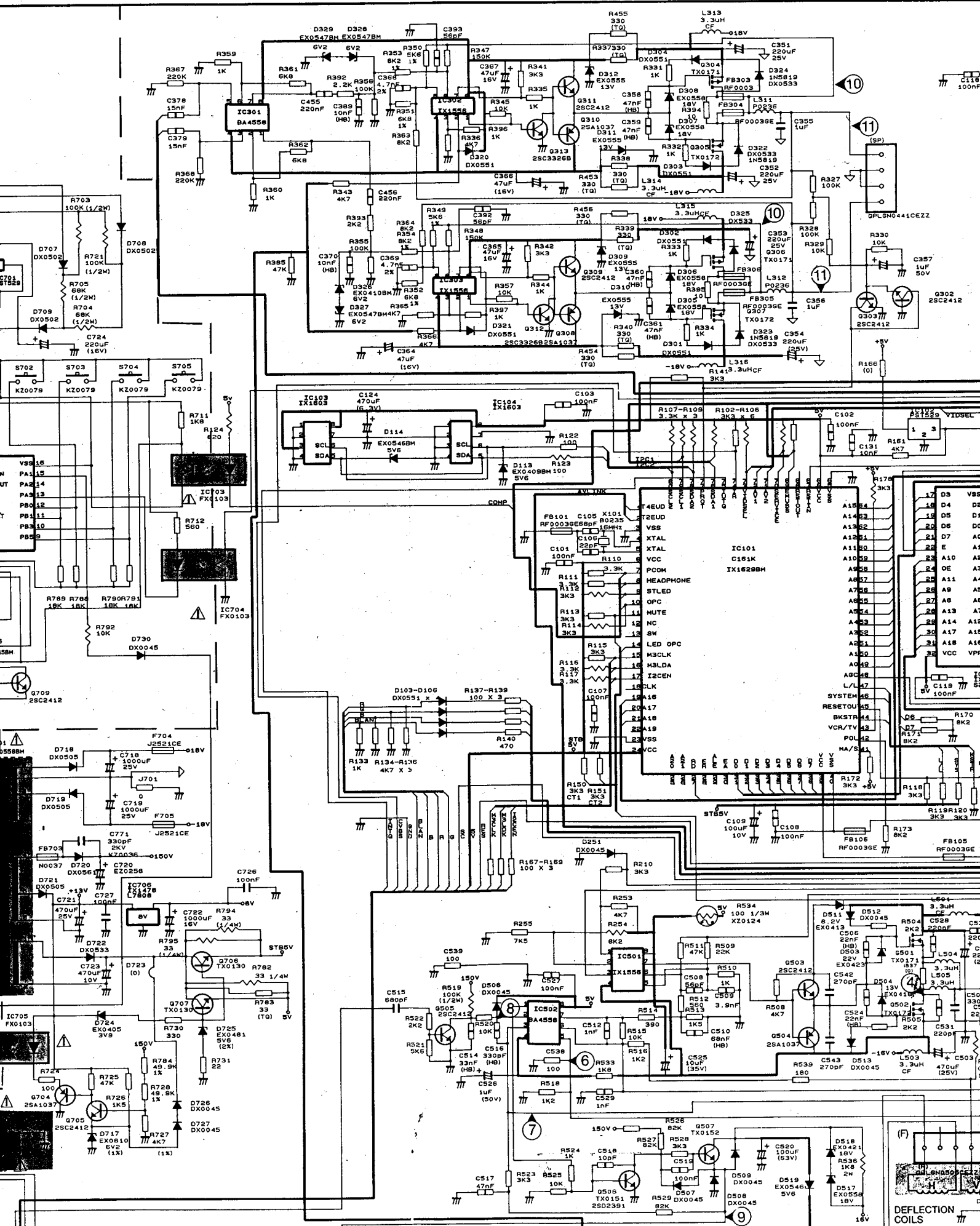
118 Vp-p/1-H

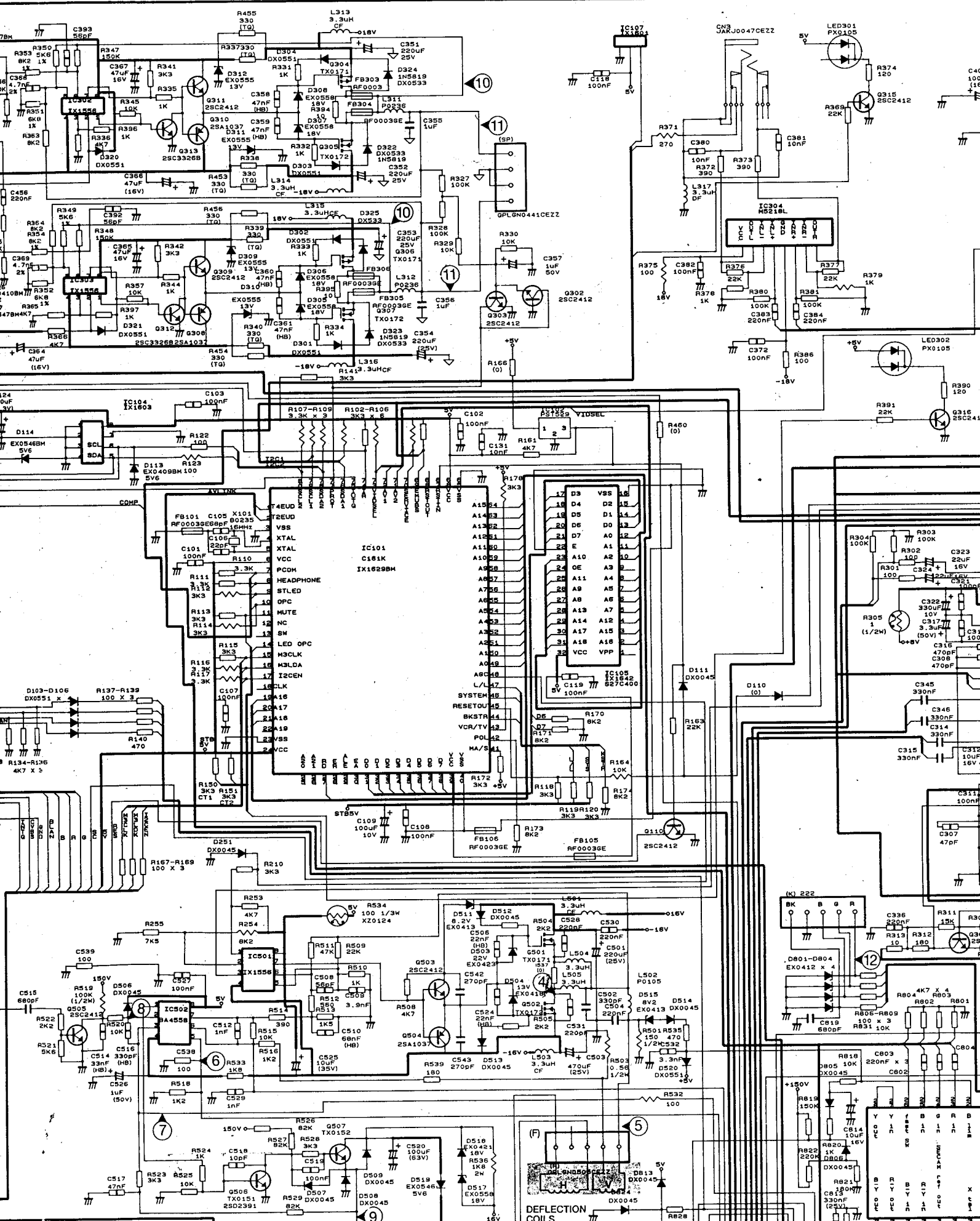
NOTE:

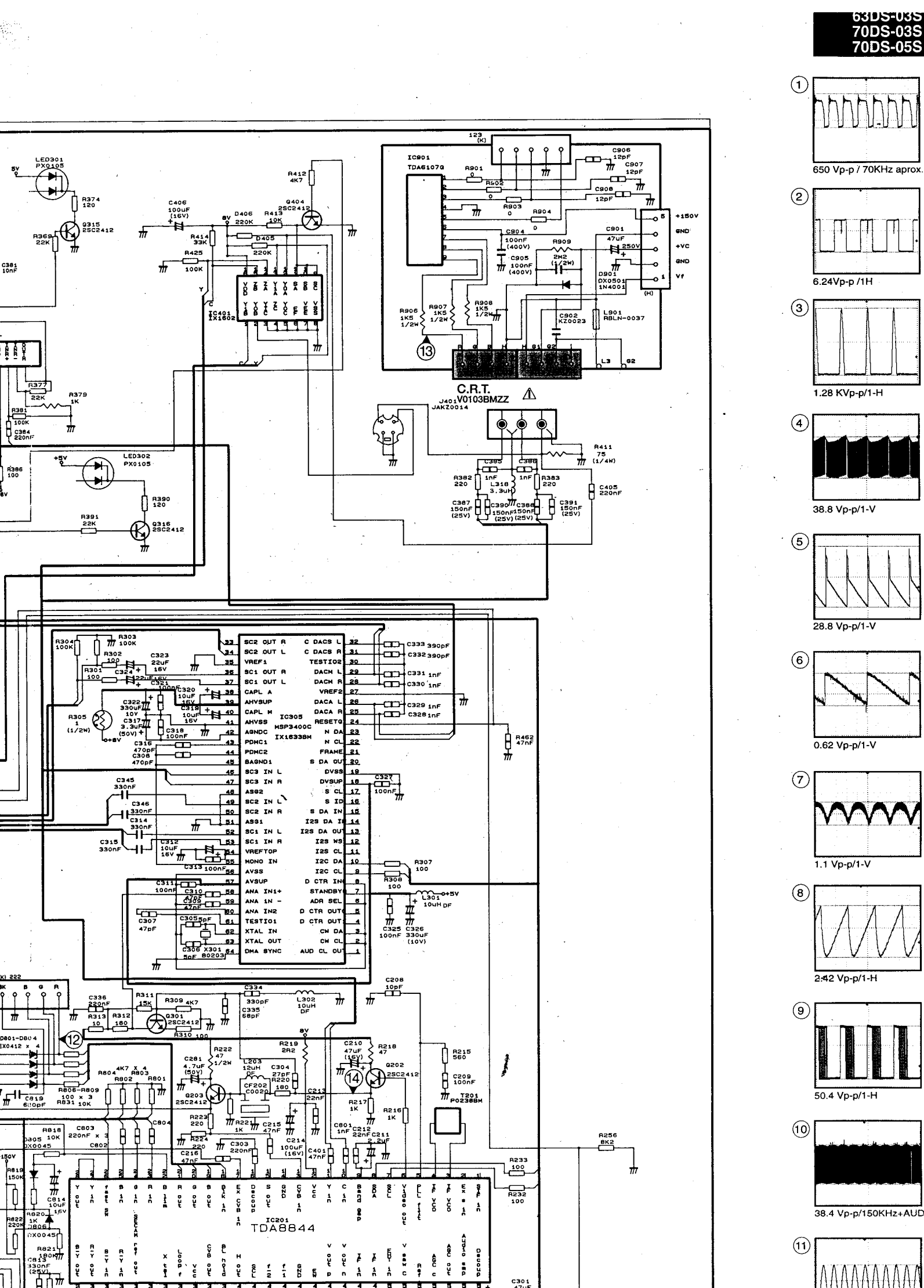
Wave forms are obtained with a colour bar signal of 79dB μ V Antenna in.

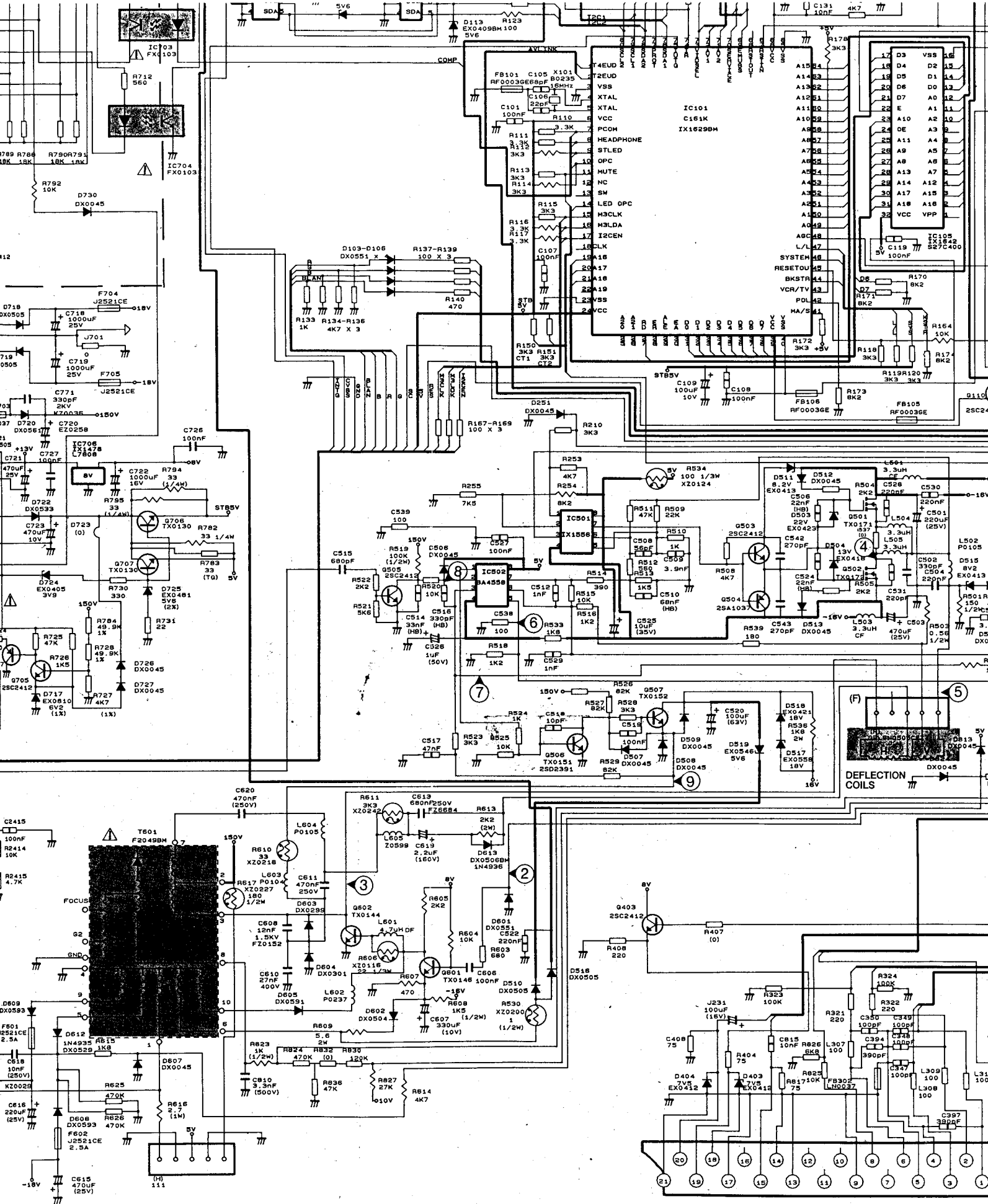
EMATIC DIAGRAM 70 DS-05S



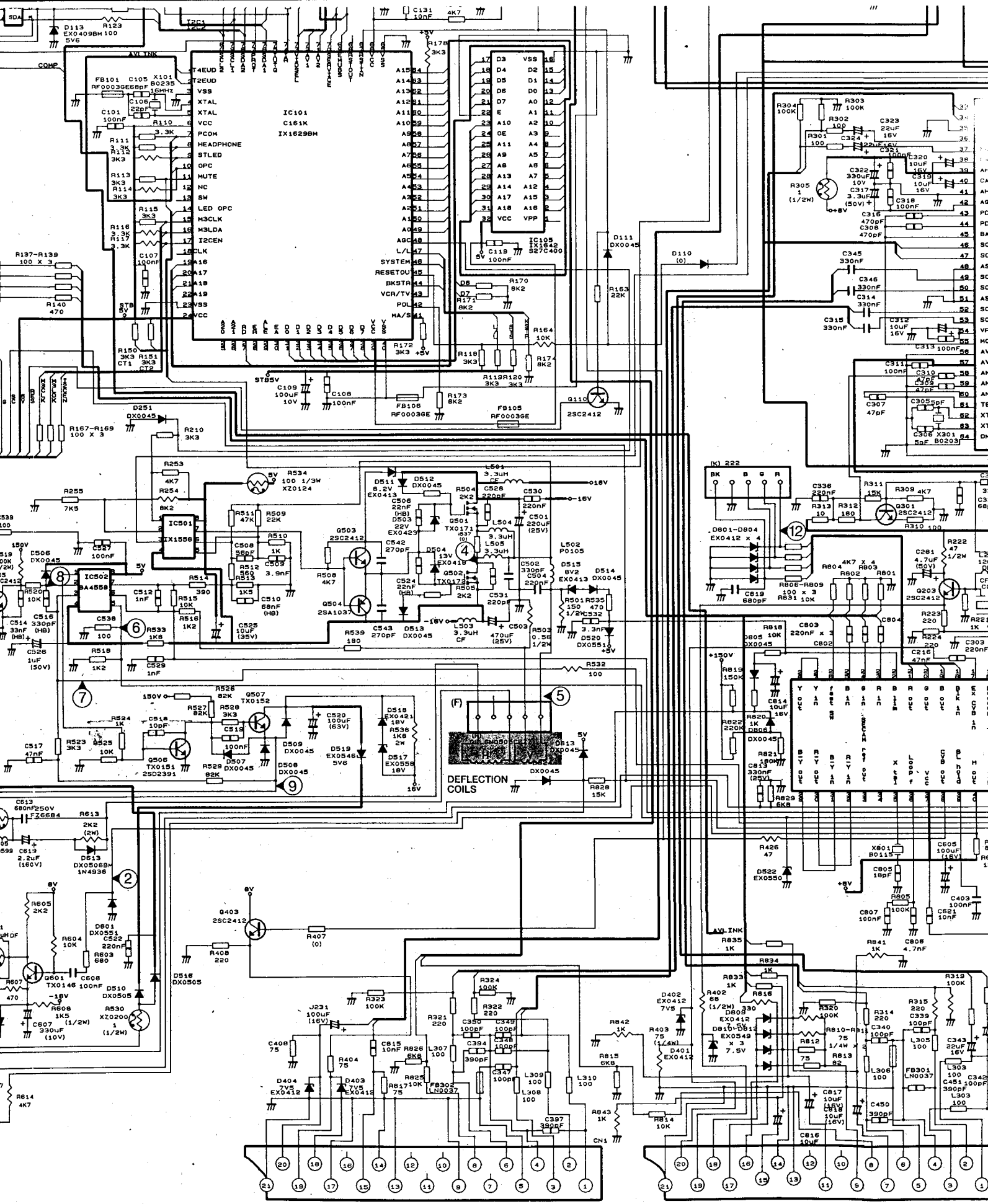








PWB-A / PWB-B



PWB-A / PWB-B

