

Service Manual

Colour Television



**TX-32PX10D, TX-32PX10F,
TX-32PX10P**

TX-28PX10D, TX-28PX10F

EURO- 9L Chassis

SPECIFICATIONS

(Information in brackets [] refers to models 28")

Power Source: 220-240V a.c., 50Hz

Power Consumption: 114W [105W]

Stand-by Power Consumption: 0,6W

Aerial Impedance: 75Ω unbalanced, Coaxial Type

Receiving System: PAL-I, B/G, D/K, PAL-525/60
SECAM B/G, D/K, L/L'
M.NTSC (AV only)
NTSC (AV only)

Receiving Channels:
VHF E2-E12 VHF H1-H2 (ITALY)
VHF A-H (ITALY) VHF R1-R2
VHF R3-R5 VHF R6-R12
UHF E21-E69 CATV (S01-S05)
CATV S1-S10 (M1-M10) CATV S11-S20 (U1-U10)
CATV S21-S41 (HYPERBAND)

Intermediate Frequency:

Video/Audio

Video 38,9MHz, 33,9MHz
33,4MHz (B/G), 33,16MHz (A2)
33,05MHz (NICAM B/G,D/K,L)
32,4MHz (D/K), 32,66MHz (CZ STEREO)
40,4MHz (L'), 39,75MHz (L'NICAM)
34,47MHz (PAL)
Colour 34,5MHz, 34,65MHz (SECAM)
38,3MHz, 38,15MHz (SECAM L')

Terminals:

AUDIO MONITOR OUT Audio (RCAx2) 500mV rms 1kΩ

AV1 IN Video (21 pin) 1V p-p 75Ω
Audio (21 pin) 500mV rms 10kΩ
RGB (21 pin) 0,7V p-p 75Ω

AV1 OUT Video (21 pin) 1V p-p 75Ω
Audio (21 pin) 500mV rms 1kΩ

AV2 IN Video (21 pin) 1V p-p 75Ω
Audio (21 pin) 500mV rms 10kΩ
S-Video IN Y: 1V p-p 75Ω
(21-pin) C:0,3V p-p 75Ω

AV2 OUT Video (21 pin) 1V p-p 75Ω
Audio (21 pin) 500mV rms 1kΩ

AV3 IN S-Video IN Y: 1V p-p 75Ω
(4-pin) C:0,3V p-p 75Ω
Audio (RCAx2) 500mV rms 10kΩ
Video (RCAx1) 1V p-p 75Ω

AV4 IN Video (21 pin) 1V p-p 75Ω
Audio (21 pin) 500mV rms 10kΩ
RGB (21 pin) 0,7V p-p 75Ω
S-Video IN Y: 1V p-p 75Ω
(21-pin) C:0,3V p-p 75Ω

AV4 OUT Video (21 pin) 1V p-p 75Ω
Audio (21 pin) 500mV rms 1kΩ

High Voltage: 32kV ± 1kV [30,5kV ± 1kV]

Picture Tube: W76ELE50X71 76cm
[W66EKT50X71 66cm]

Audio Output: 2x10W RMS, 2x20W MPO,
8Ω impedance

Headphones: 8Ω Impedance

Accessories

supplied : Remote Control
2 x R6 (UM3) Batteries

Dimensions:

Height: 567mm [510mm]
Width: 902mm [776mm]
Depth: 550mm [530mm]

Net weight: 56,5kg [42,5kg]

Specifications are subject to change without notice.
Weights and dimensions shown are approximate.

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SAFETY PRECAUTION

GENERAL GUIDE LINES

1. It is advisable to insert an isolation transformer in the a.c. supply before servicing a hot chassis.
2. When servicing, observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all parts that have been overheated or damaged by the short circuit.
3. After servicing, see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are correctly installed.
4. When the receiver is not being used for a long period of time, unplug the power cord from the a.c. outlet.
5. Potentials as high as 33kV [31,5kV] are present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazard.

LEAKAGE CURRENT COLD CHECK

1. Unplug the a.c. cord and connect a jumper between the two prongs of the plug.
2. Turn on the receiver's power switch.
3. Measure the resistance value with an ohmmeter, between the jumpered a.c. plug and each exposed metallic cabinet part on the receiver, such as screw heads, aeriels, connectors, control shafts etc. When the exposed metallic part has a return path to the chassis, the reading should be between 4M ohm and 20M ohm. When the exposed metal does not have a return path to the chassis, the reading must be infinite.

LEAKAGE CURRENT HOT CHECK

1. Plug the a.c. cord directly into the a.c. outlet. Do not use an isolation transformer for this check.
2. Connect a 2k Ω 10W resistor in series with an exposed metallic part on the receiver and an earth, such as a water pipe.
3. Use an a.c. voltmeter with high impedance to measure the potential across the resistor.

4. Check each exposed metallic part and check the voltage at each point.
5. Reverse the a.c. plug at the outlet and repeat each of the previous measurements.
6. The potential at any point should not exceed 1,4 Vrms. In case a measurement is outside the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

HOT CHECK CIRCUIT

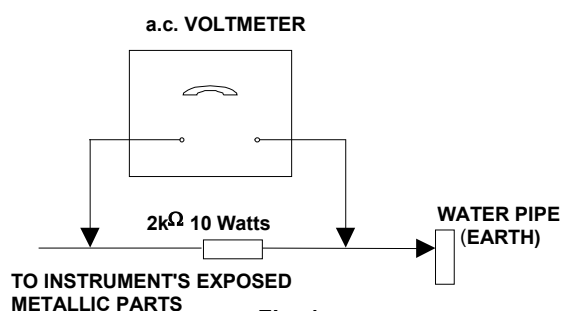


Fig. 1.

X-RADIATION WARNING

1. The potential sources of X-Radiation in TV sets are the high voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that the jig is capable of handling 33kV [31,5kV] without causing X-Radiation.

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

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate: 32kV $\pm$ 1kV [30,5kV $\pm$ 1kV].
If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
3. To prevent any X-Radiation possibility, it is essential to use the specified tube.

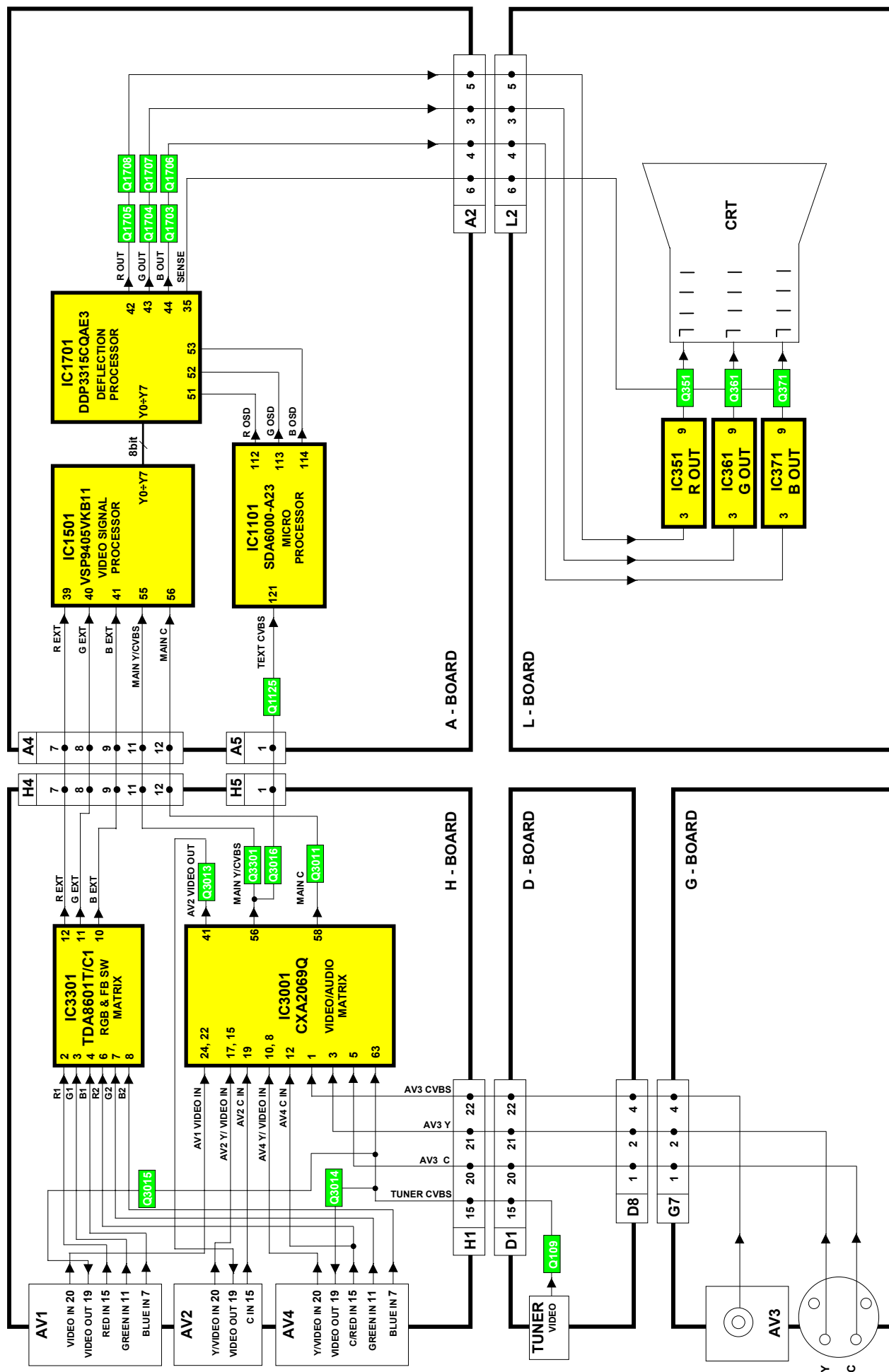
ALIGNMENT SETTINGS

(The figures below are nominal and used for representative purposes only.)

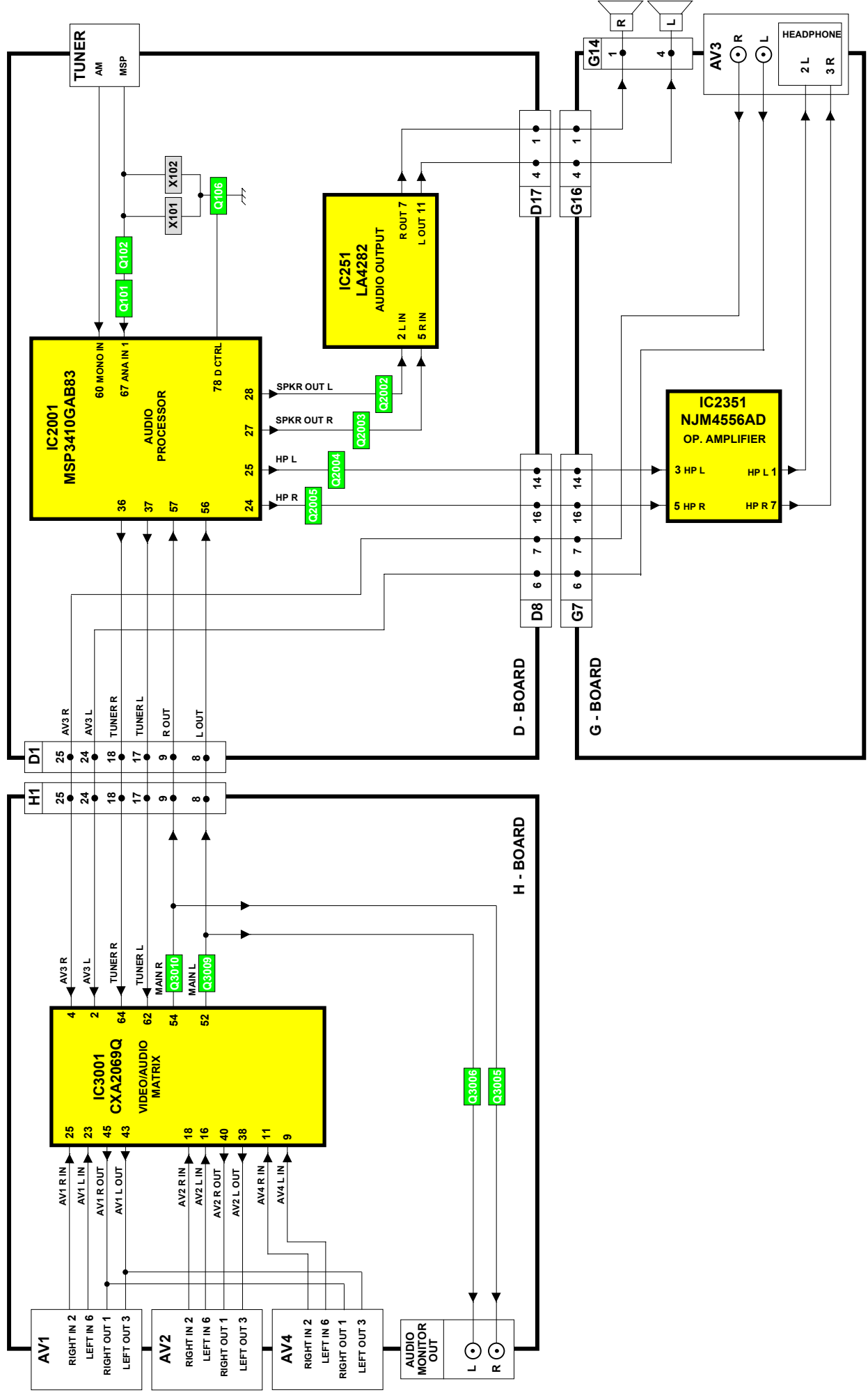
1. Set the Bass to maximum position, set the Treble to minimum position, set the Volume to minimum then press the down button (-V) on the customer controls at the front of the TV and at the same time press the **INDEX** button on the remote control, this will place the TV into the Service Mode 1.
2. Press the **RED / GREEN** buttons to step up / down through the functions.
3. Press the **YELLOW / BLUE** buttons to alter the function values.
4. Press the **STR** button after each adjustment has been made to store the required values.
5. To exit the Service Mode, press the "**N**" button.

Alignment Function	Setting indication Note: All setting values are approximate	Settings / Special features
Horizontal Position	H-Pos 21	Optimum setting.
Vertical Position	V-Pos 27	Optimum setting.
Horizontal Amplitude	H-Amp 41	Optimum setting.
Vert. Amplitude	V-Amp -66	Optimum setting.
EW-amplitude	EW-Amp 1 - 25	Optimum setting.
Lower Corner	Lower Corner 2	Optimum setting.
Trapezium-comp	Trapez 1 -7	Optimum setting.
Upper Corner	Upper Corner -2	Optimum setting.
Vertical Symmetry	V-Sym -4	Optimum setting.
Vertical Linearity	V-Lin 40	Optimum setting.
Angle	Angle -2	Optimum setting.
Bow	Bow 0	Optimum setting.
DVCO	DVCO -1	Receive a PAL Colour Bar Pattern. For DVCO alignment press " Blue " button, wait until the colours are changing slowly and press " STR ".
Highlight Lowlight	High 0403 0318 0350 Low 0071 0132 0160	Optimum setting.
Sub-Brightness	Sub-Brightness 20	Optimum setting.

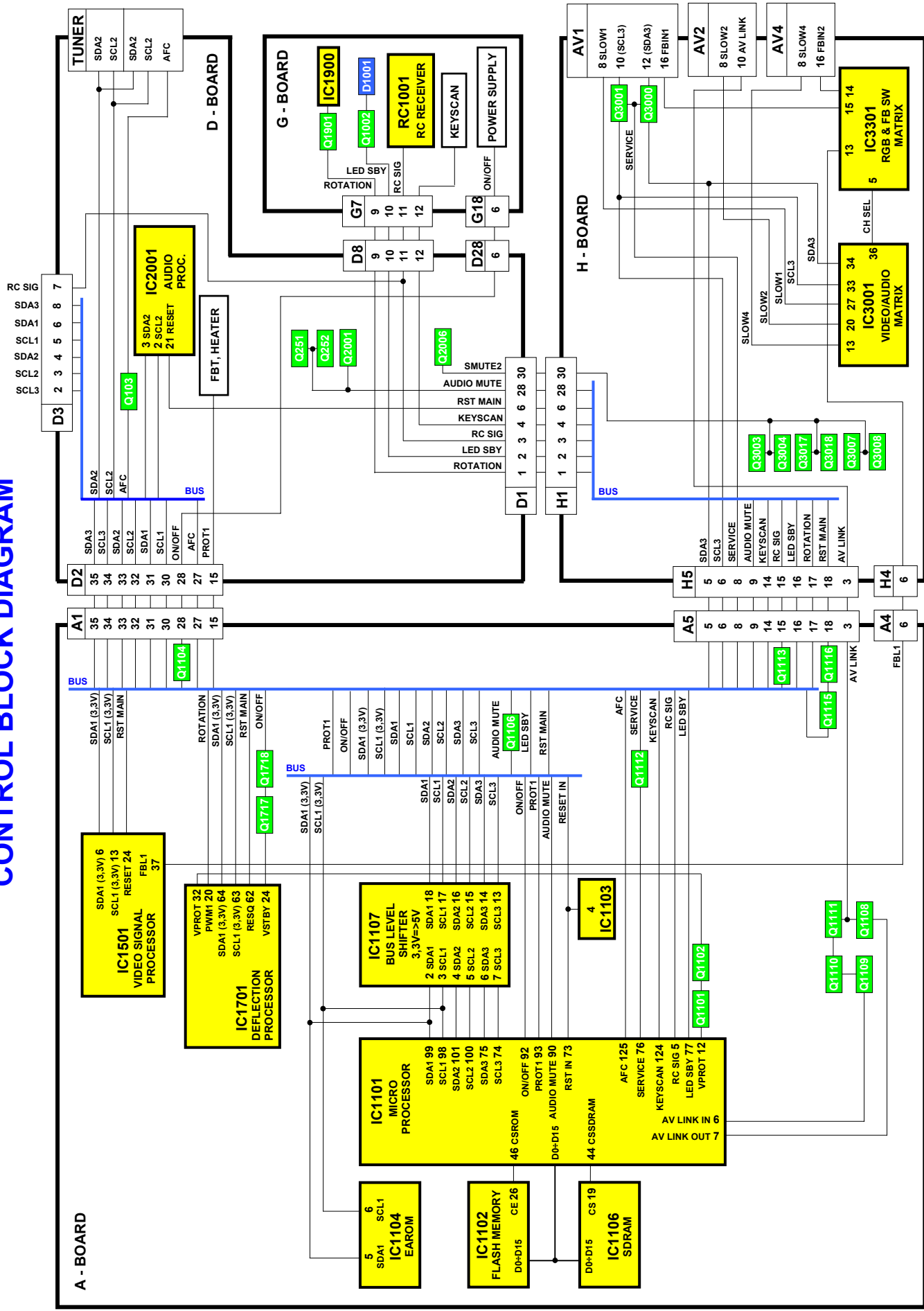
VIDEO BLOCK DIAGRAM



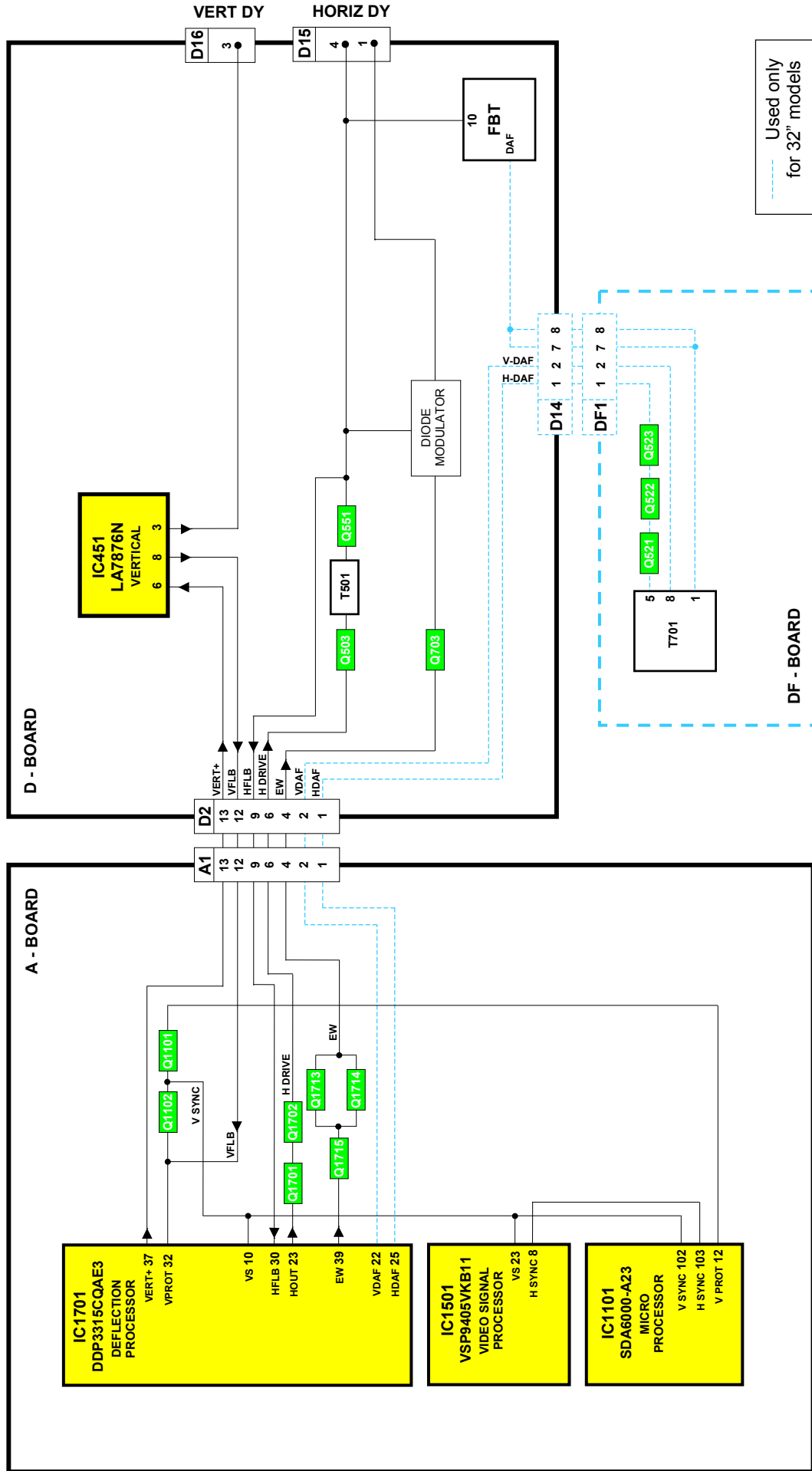
AUDIO BLOCK DIAGRAM



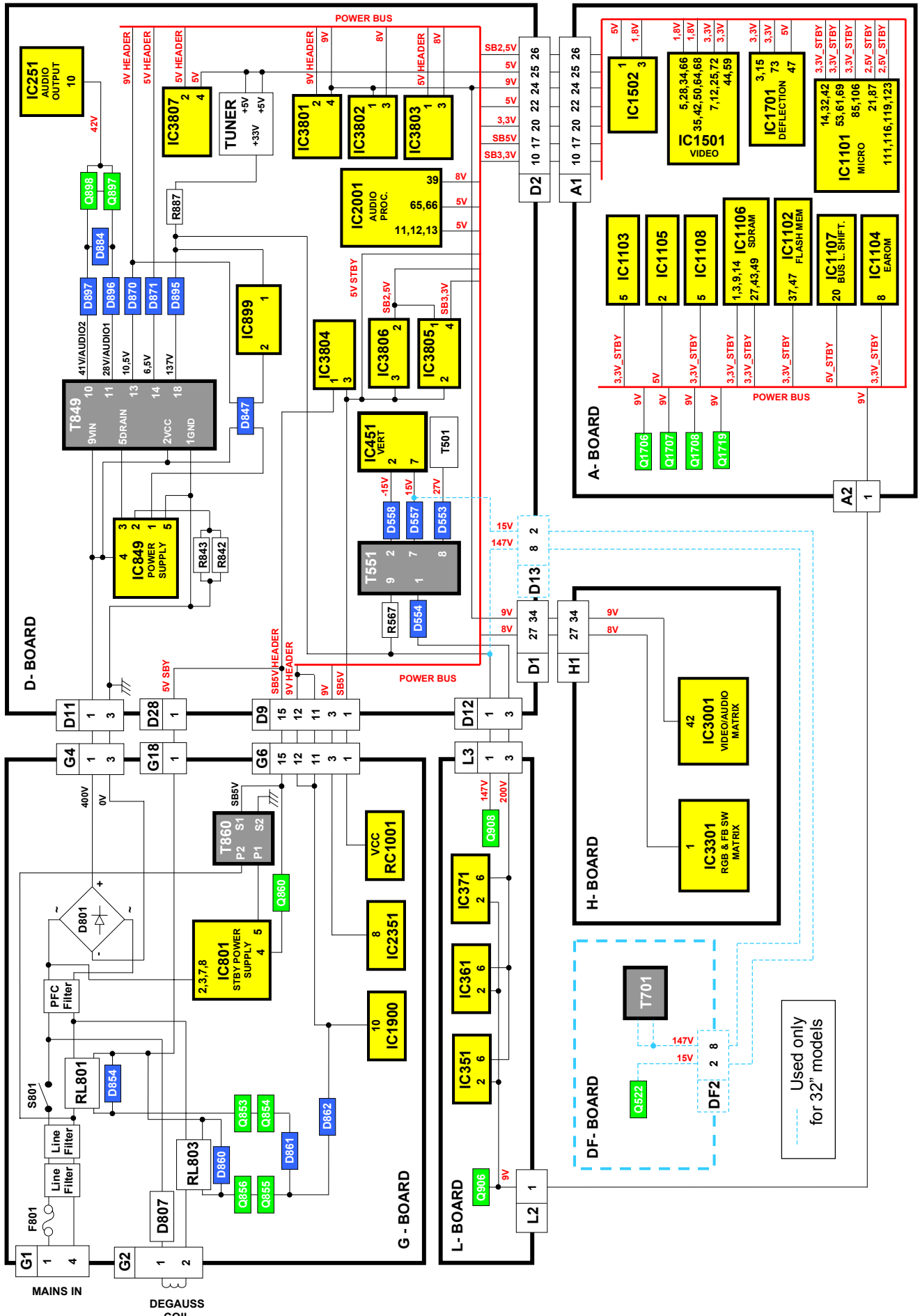
CONTROL BLOCK DIAGRAM



DEFLECTION BLOCK DIAGRAM



POWER SUPPLY BLOCK DIAGRAM



SCHEMATIC DIAGRAMS FOR MODELS TX-32PX10D, TX-32PX10F, TX-32PX10P TX-28PX10D, TX-28PX10F (EURO-9L CHASSIS)

IMPORTANT SAFETY NOTICE

Components identified by  mark have special characteristics important for safety. When replacing any of these components, use only manufacturers' specified parts.

NOTE

1. RESISTOR
All resistors are carbon 1/4W resistor, unless marked otherwise.
Unit of resistance is OHM (Ω) (k=1,000, M=1,000,000)
2. CAPACITORS
All capacitors are ceramic 50V unless marked otherwise.
Unit of capacitance is μ F unless otherwise stated.
3. COIL
Unit of inductance is μ H, unless otherwise stated.

4. TEST POINT
 Test Point Position

5. EARTH SYMBOL
 Chassis Earth (Cold)
 Line Earth (Hot)

6. VOLTAGE MEASUREMENT
Voltage is measured by a d.c. voltmeter.
Measurement conditions are as follows:
Power source a.c. 220V-240V, 50Hz
Receiving Signal Colour Bar signal (RF)
All customer controls Maximum position

7.
 Indicates the Video signal path
 Indicates the Audio signal path

These schematic diagrams are the latest at time of printing and are subject to change without notice.

REMARKS

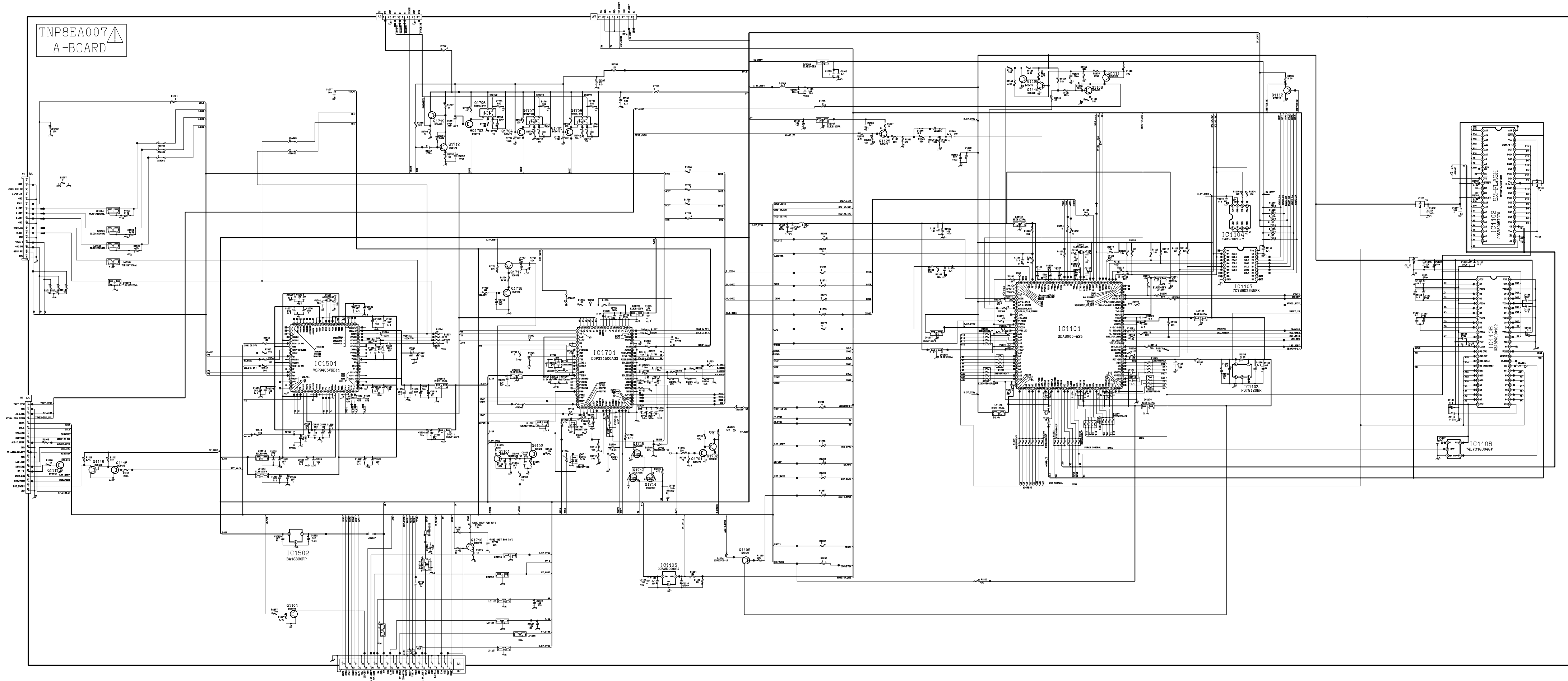
- a. Do not touch the hot part, or the hot and cold parts at the same time, as you are liable to a shock hazard.
- b. Do not short circuit the hot and cold circuits as electrical components may be damaged.
- c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously as this may cause fuse failure. Connect the earth of the instruments to the earth connection of the circuit being measured.
- d. Make sure to disconnect the power plug before removing the chassis.

NOTE

1. The Power Supply Circuit contains a circuit area, which uses a separate power supply to isolate the earth connection. The circuit is defined by HOT and COLD indications in the schematic diagram. All circuits, except the Power Circuit, are COLD.

DF BOARD IS USED ONLY FOR 32" MODELS.





H BOARD
TNP8EH008

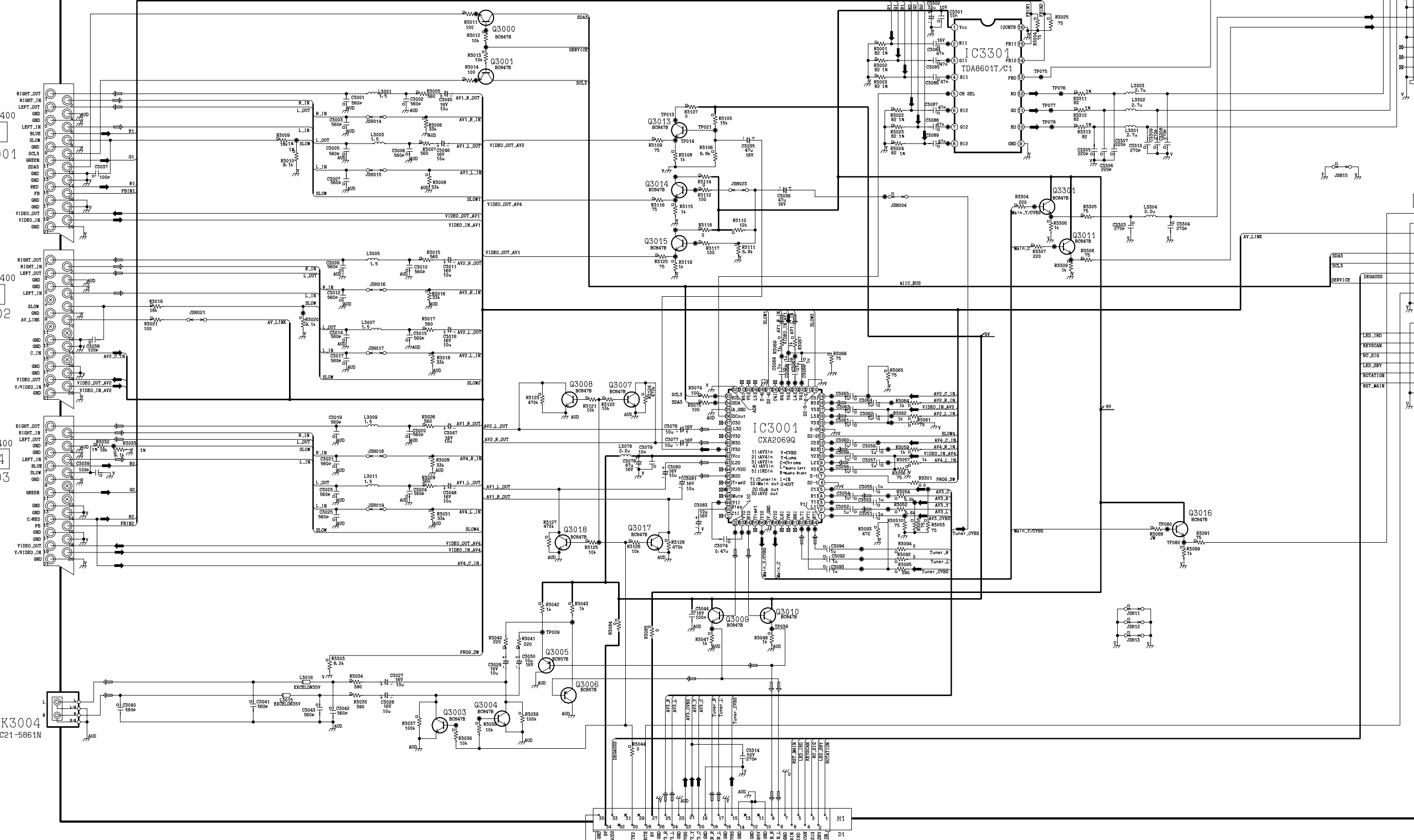
0350536400
AV1
JK3001

0350536400
AV2
JK3002

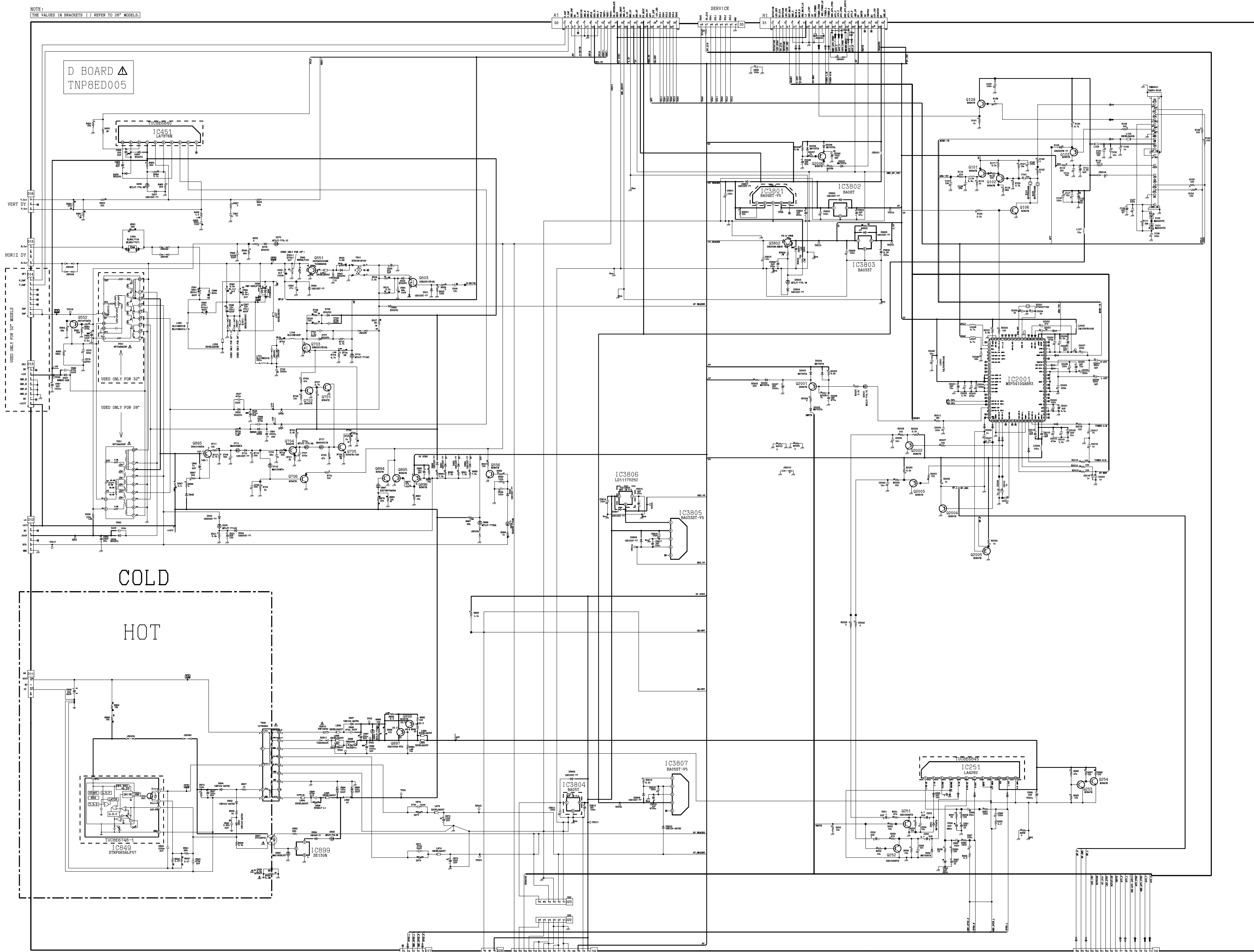
0350536400
AV4
JK3003

JK3004
YKC21-5861N

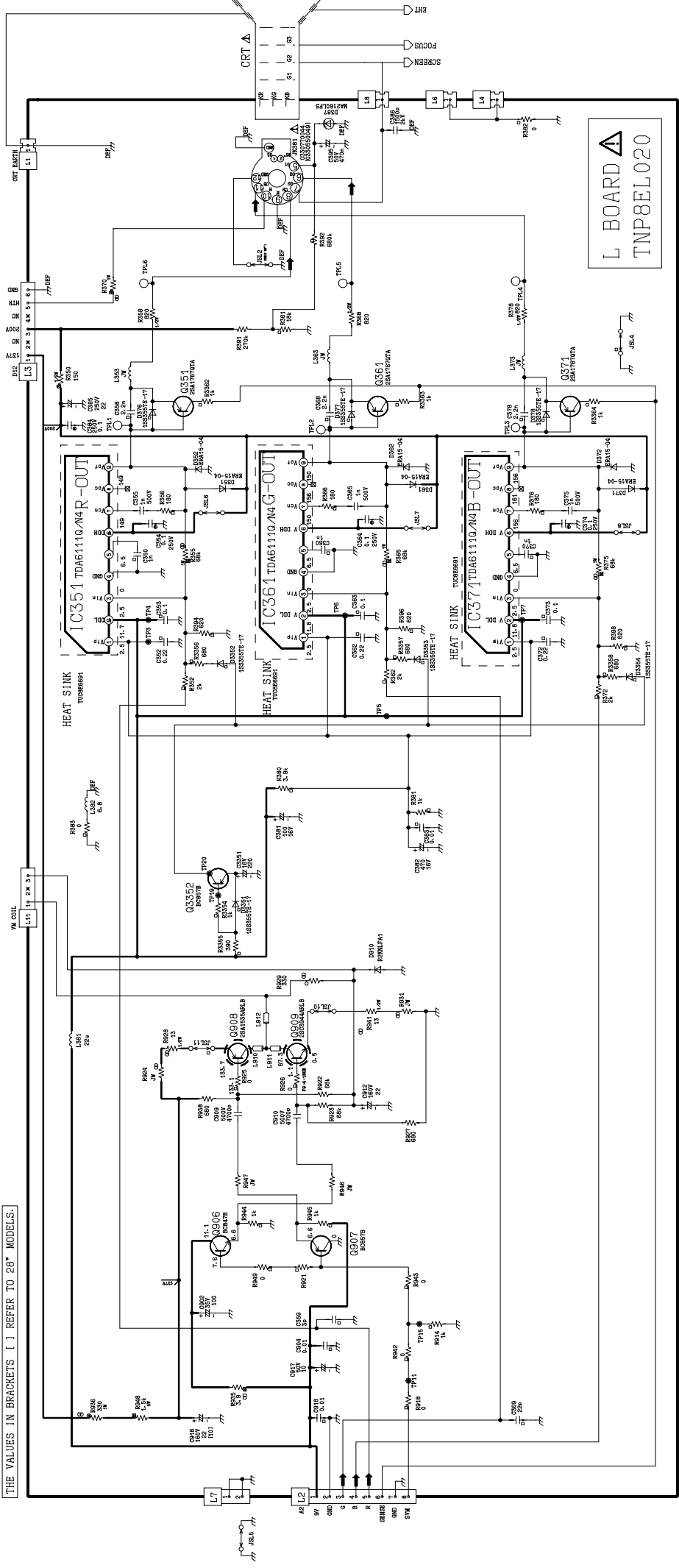
- 1 GND
 - 2 GND
 - 3 FB
 - 4 RED
 - 5 GREEN
 - 6 BLUE
 - 7 GND
 - 8 MAIN_CVBS/Y
 - 9 GND
 - 10 GND
 - 11 H4 A4
 - 12 GND
 - 13 GND
 - 14 GND
 - 15 GND
 - 16 GND
 - 17 GND
 - 18 GND
 - 19 GND
-
- 1 A5
 - 2 TEXT_CVBS
 - 3 GND
 - 4 AV_LINK
 - 5 GND
 - 6 SDA3
 - 7 SCL3
 - 8 DEGAUSS
 - 9 SERVICE
 - 10 AUDIO_MUTE
 - 11 GND
 - 12 GND
 - 13 LED_IRD
 - 14 KEYSCAN
 - 15 RC_SIG
 - 16 LED_SBY
 - 17 ROTATION
 - 18 RST_MAIN
 - 19 GND



NOTE:
THE VALUES IN BRACKETS () REFER TO 28" MODELS.



NOTE :
THE VALUES IN BRACKETS [] REFER TO 26" MODELS.



L BOARD
TNP8EL020

