

General Information

Chassis: Euro 2
CRT: A51EAL155X01

Remote Control:
EUR51920

Door Flap:
TKP8E1138AD2

Main Power Button:
TBX8E030

Battery Cover: UR51EC780

Matrix

Item	See Model
Safety Notes	Panasonic TX-14S1T

Specifications

Power Source: 220V - 240V AC 50 Hz
Power Consumption: 80W
Aerial Impedance: 75 W unbalanced, coaxial type
Receiving System: PAL 1, PAL 60
Receiving Channels: UHF E21 - E69
Intermediate Frequency: Video: 39.5 MHz
Sound: 33.5 MHz
Colour: 35.07 MHz

Video/Audio Terminals:
Audio Monitor Out: Audio (RCA X 2)
500mV rms, 1k W
AV1 In: Video: (21 pin) 1 Vp-p 75 W
Audio: (21 pin) 500mV rms 10k W
RGB: (21 pin)
AV1 Out: Video: (21 pin) 1Vp-p 75 W
Audio: (21 pin) 500mV rms 1k W
AV2 In: Video (21 pin) 1 Vp-p 75 W
Audio (21 pin) 500mV rms, 10k W
S - Video IN Y: 1 Vp-p 75 W
(21 pin) C: 0.3 Vp-p 75 W
AV2 Out: Video (21 pin) 1 Vp-p 75 W
Audio (21 pin) 500mV rms, 1k W
AV3 In: Audio (RCA x 2) 500mV rms, 10k W
Video (RCA x 1) 1 Vp-p 75 W
High Voltage: 27KV \pm 1kV at zero beam current
Picture Tube: 51cmV measured diagonally

Audio Output:
Internal Speaker: 2 x 20 W (music power)
8 W impedance
Headphones: 8 W impedance

Service Adjustments

Safety Precautions

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 28kV 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 27kV \pm 1kV at zero beam current, if the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of immediate component failure.
- 3: To prevent an X-Radiation possibility, it is essential to use the specified tube.

Service Mode

The remote control is used for entering and storing adjustments, with the exception of cut-off adjustments which must always be done prior to service adjustment. Perform adjustments in accordance with screen display. The display on the screen also specifies the CCU variants as well as the approximate setting values. The adjustment sequence for the Service Mode is indicated below.

- 1: Set the Bass to maximum position, set the Treble to minimum position, press the F button followed by the volume down button on the customer controls at the front of the TV and at the same time press the Reveal button on the remote control, this will place the TV into the Service Mode.
- 2: Press the RED/GREEN buttons to step down/up through the functions.
- 3: Press the YELLOW/BLUE buttons to alter the function values.
- 4: Press the STORE button after each adjustment has been made to Store the required values.
- 5: To exit the Service Mode press the Normalisation button.

Note: This TV also has the option of using a Memory Pack which enables you to copy the

pre-set TV channels and analogue levels into the Memory Pack and then upload them onto another EURO-2 TV set.

Using the Memory Pack

TV to Memory Pack Process

- 1: Plug the Memory Pack into the lower of the two 21 pin terminals at the back of the TV and switch the TV on. If the TV has only one 21 pin connector then this will be able to accept the Memory Pack.
- 2: Go into the Service Mode as explained above, the screen will show:
PROGRAM
EXTERNAL>>TV
- 3: Press the blue button on the remote control, the screen will show:
PROGRAM
TV>>EXTERNAL
- 4: Press the Store button on the TV, the screen will show:
STORING
- 5: All the tuning information Stored inside the TV will now be transferred to the Memory Pack. This process will take 2 - 3 minutes to complete and when finished will show:
OK!

Memory Pack to TV Process

- 1: Plug the Memory Pack into the lower of the two 21 pin terminals at the back of

the TV and switch the TV on. If the TV has only one 21 pin connector then this will be able to accept the Memory Pack. Go into the Service Mode as explained above, the screen will show:

- 2: PROGRAM
- 3: EXTERNAL>>TV
Press the Store button on the TV, the screen will show:
LOADING
- 4: All the tuning information Stored inside the TV will now be transferred to the Memory Pack. This process will take 2 - 3 minutes to complete and when finished will show:
OK!
- 5: The tuning information from the Memory Pack has now been copied into the TV.
- 6: To exit the Service Mode press the Normalisation button.
- 7: The process has now been completed and the Memory Pack can now be removed.

Errors

If an error occurs while using the Memory Pack, the TV will detect this and the screen will show: PROGRAM ERROR!
If this happens then switch the TV off and repeat the process that was being used. If the errors continue to occur then check the connectors between the TV and the Memory Pack and check the 9V battery inside the Memory Pack.

Self Check

Self check is used to automatically check the Business and Hexadecimal code of the TV set. To enter the Self Check Mode press the Function Down button on the Pre-set Panel, at the same time pressing the Status button on the remote control, the screen will show:

1 — ok	Tuner	11 — --	Dolby IC for C/R
2 — ok	VIF	12 — ok	P S MODE
3 — ok	EEPROM	13 — ok	P TA0
4 — --	Sound AV switch 1	14 — ok	P TA1
5 — ok	Video AV switch 1	15 — ok	P TA2
6 — ok	VDP	16 — ok	P TA3
7 — ok	TPU	17 — ok	P SDA
8 — ok	MSP	18 — ok	P SCL1
9 — --	Dolby Sub	19 — ok	P SCL3
10 — --	Dolby IC for L/R	20 — ok	P SCL4

21 — ok	P SBLED	Hex codes
22 — ok	P OFF	06
23 — ok	P DEFL	CE
24 — ok	P RAM	34
		94
		85

If the CCU ports have been checked and found to be incorrect the "- -" will appear in place of "OK".

Adjustments

+B Set-up

Preparation

- 1: Receive a window pattern.
- 2: Set the brightness, contrast and volume to minimum.

Procedure

- 1: Set the +B voltage up as follows: adjust R8:1 so that B2 shows 130V \pm 1V.
- 2: Confirm the following voltages:
B1 200 \pm 10V
B3 27 \pm 1V

B4: 41.0 \pm 1V
B5: 15.5 \pm 1V
B6: 12 \pm 0.5V
B7: 5 + 0.1/-0.25V
B8: 5 \pm 0.25V
U33: 31 \pm 1V

RF AGC

Preparation

- 1: Receive a test pattern.
- 2: connect an oscilloscope between the tuner RF AGC and ground.
- 3: Set the oscilloscope gain range to 1V/div.

Procedure

- 1: Check that the noise becomes large when the RF AGC VR R126 is turned counter-clockwise. After the check turn it clockwise.
- 2: Gradually turn the RF AGC VR anti-clockwise and set the RF AGC VR to the point where the RF AGC voltage is just falling to a point where this voltage drops by 0.2V from the maximum value.

Cut Off

Preparation

- 1: Receive a window pattern.
- 2: Degauss the tube externally.
- 3: Set the TV into Service Mode 1.
- 4: Select Cut-off DC mode.

Procedure

- 1: Confirm the value is 128 and select Ug2 mode noting colour with the largest value.
- 2: Turn the screen VR until a colour reaches 20 - 30.
- 3: Connect an oscilloscope to the cathode with the biggest value colour.
- 4: Select Cut-off DC mode and adjust Cut-off pulse to 159V \pm 5V.
- 5: Disconnect the oscilloscope and adjust the screen to whichever colour reaches 70 \pm 30 first.

Recommended Safety Parts

Item	Part No.	Description
C559	ECWF2H474J	Film 500V 470nF
C562	ECKC2H101J	Ceramic 500V 100pF
C802	ECQE6104K	Film 600V 100nF
C815, C818	ECKC2H472J	Ceramic 500V 4.7nF
C816	ECKC3D222JB	Ceramic 2KV 2200pF
C821	ECKCNS332J	Ceramic 1.2KV 3.3nF
C851	ECKC2H681J	Ceramic 500V 680pF
C855	ECKC3D471JB	Ceramic 2KV 470pF
F801	19181-3.15	Fuse
F851	TR5-T1250	Fuse
F852, F853	TR5-T2000	Fuse
R1260	ERDS1FJ121	Carbon 0.5W 5% 120 Ω
R2651, R2652	ERG2FJ221	Metal 2W 5% 220 Ω
R357, R358,		
R359	ERG1FJ563	Metal 1W 5% 56K Ω
R372	ERQ12AJ121	Fusible 0.5W 5% 120 Ω
R377	ERQ12HJ1R2	Metal 0.5W 5% 1R2 Ω
R464	ERW12PK1R5	Wire 0.5W 10% 1R5 Ω
R466	ERO25CKF1801	Metal 0.25W 1% 1K8 Ω
R467, R807	ERO25CKF1201	Metal 0.25W 1% 1K2 Ω
R507	ERQ14AJ3R3	Metal 0.25W 5% 3R3 Ω
R551	ERW2PKR47	Wire Wound 2W 10% 0R47 Ω
R701	ERQ12AJ101	Fusible 0.5W 5% 100 Ω
R702	ERQ12HJ330	Metal 0.5W 5% 33 Ω
R703	ERG2FJ821	Metal 2W 5% 820 Ω
R801	ERG3FJ682H	Metal 3W 5% 6K8 Ω
R802	ERG2FJ472	Metal 2W 5% 4K7 Ω
R809	ERO25CKF1302	Metal 0.25W 1% 13K Ω
R813	ERD50FJ334	Carbon 0.5W 5% 330K Ω
R814	ERF7ZK2R7	Wound 7W 20% 2R7 Ω
R817	ERG3FJ470	Metal 3W 5% 47 Ω
R818, R819	ERD50FJ564	Carbon 0.5W 5% 1K Ω
R820	ERD75TAJ825	Carbon 0.75W 5% 8M2 Ω
R855	ERG2FJ223	Metal 2W 5% 22K Ω
S801	ESB91232A	Switch
TNR001	ENV87880G3	Tuner

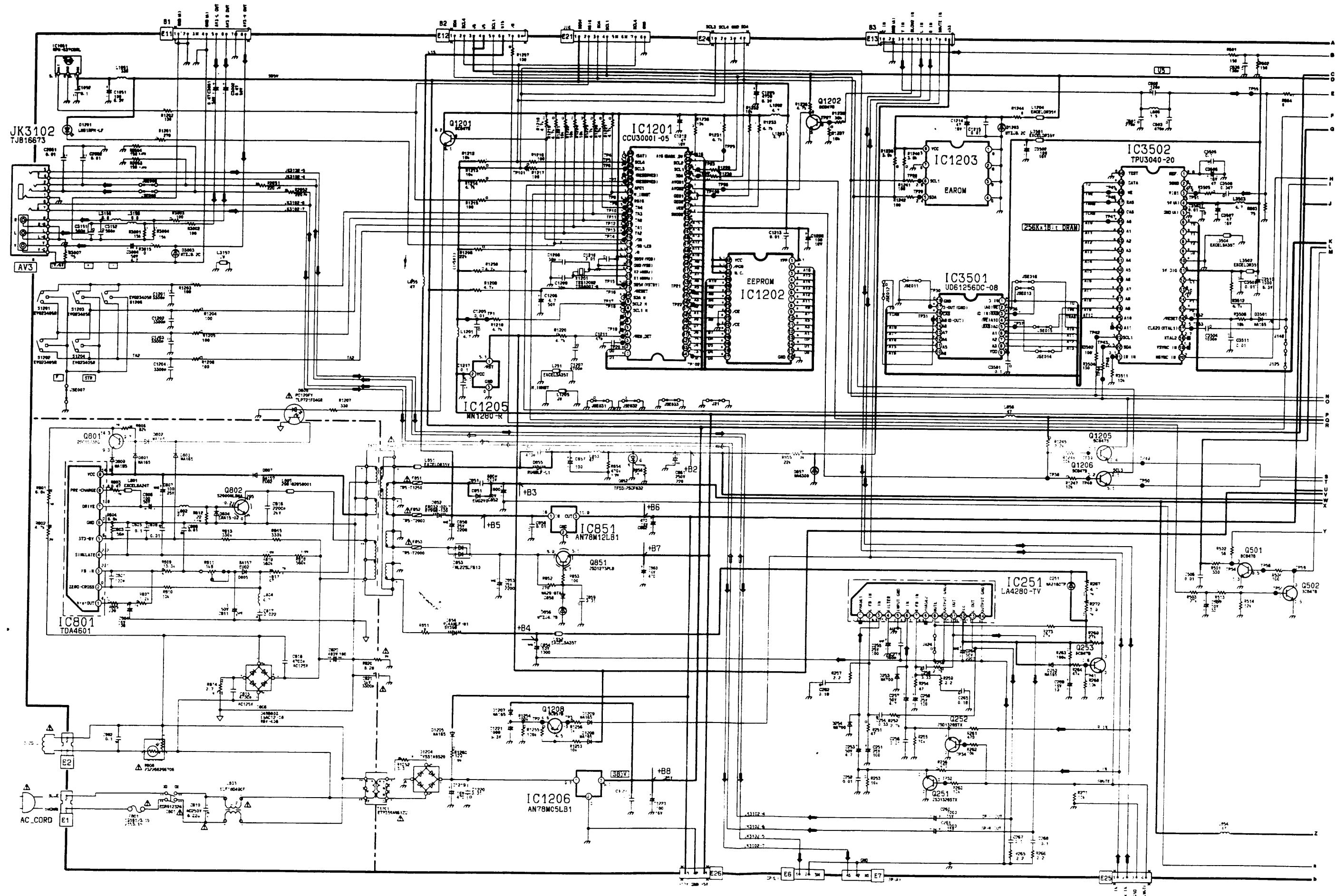
Recommended Safety Parts

Item	Part No.	Description
	TQB8E2082	Inst. Book
3	TKY8E090	Cabinet
4	A51EAL155X01	CRT
7	TKU8E00240	Back Cover
9	TNP117069AC	Y P. C. B.
10	TNP117064AA	B P. C. B.
11	TNP197091AY	E P. C. B.
18	TSX8E0017	Power Cord
C360	ECKC3D152J	Ceramic 2KV 1.5nF
C551	ECWH12H272J	Ceramic 500V 2.7nF
C552	ECWH12H102J	Ceramic 500V 1nF
C555	ECWH12H103J	Film 1250V 10nF

Alignment Settings		
Alignment Function	TX-21AD2	Settings/Special Features
1. Vertical Amplitude (V-AM)	P063	Optimum Setting
2. Vertical Symmetry (V-SYM)	002	
3. Vertical Linearity (V-LIN)	-020	
4. Vert. D.C.	000	
5. V-Pos.	005	Optimum Setting
6. Horizontal Amplitude (H-AM)	P-044	Optimum
7. Horizontal Position (H-POS)	542	Setting
8. Text Position	049	Optimum Setting
9. EW-Amplitude (E-W-AMP 1)	-059	Optimum Setting
10. EW Amplitude (E-W-AMP 2)	044	Optimum Setting
11. Trapezium-comp (Trapez-1)	000	Optimum Setting
12. Trapezium-comp (Trapez-2)	-009	Optimum Setting
13. Colour VCO	006	Press either Blue or Yellow buttons to effect automatic adjustment
14. Cut-off DC	050	No adjustment
15. Ug2 Test	094/044-020	Select Cutoff DC in Service Mode mode and confirm the value is 128. Select Ug 2 Test noting colour with largest value, adjust on FBT until a colour reaches 20 - 30. Connect an oscilloscope to the cathode of the biggest value colour, select Cutoff DC mode and adjust get Cutoff pulse voltage to 159 \pm 5V. Disconnect the oscilloscope and adjust the screen to whichever colour reaches 70 \pm 30 first.
16. Cutoff	057/064-056	Press the GREEN button to step through the settings. Adjust for optimum.
17. White	200/255/246	Press the GREEN button to step through the settings. Adjust for optimum.

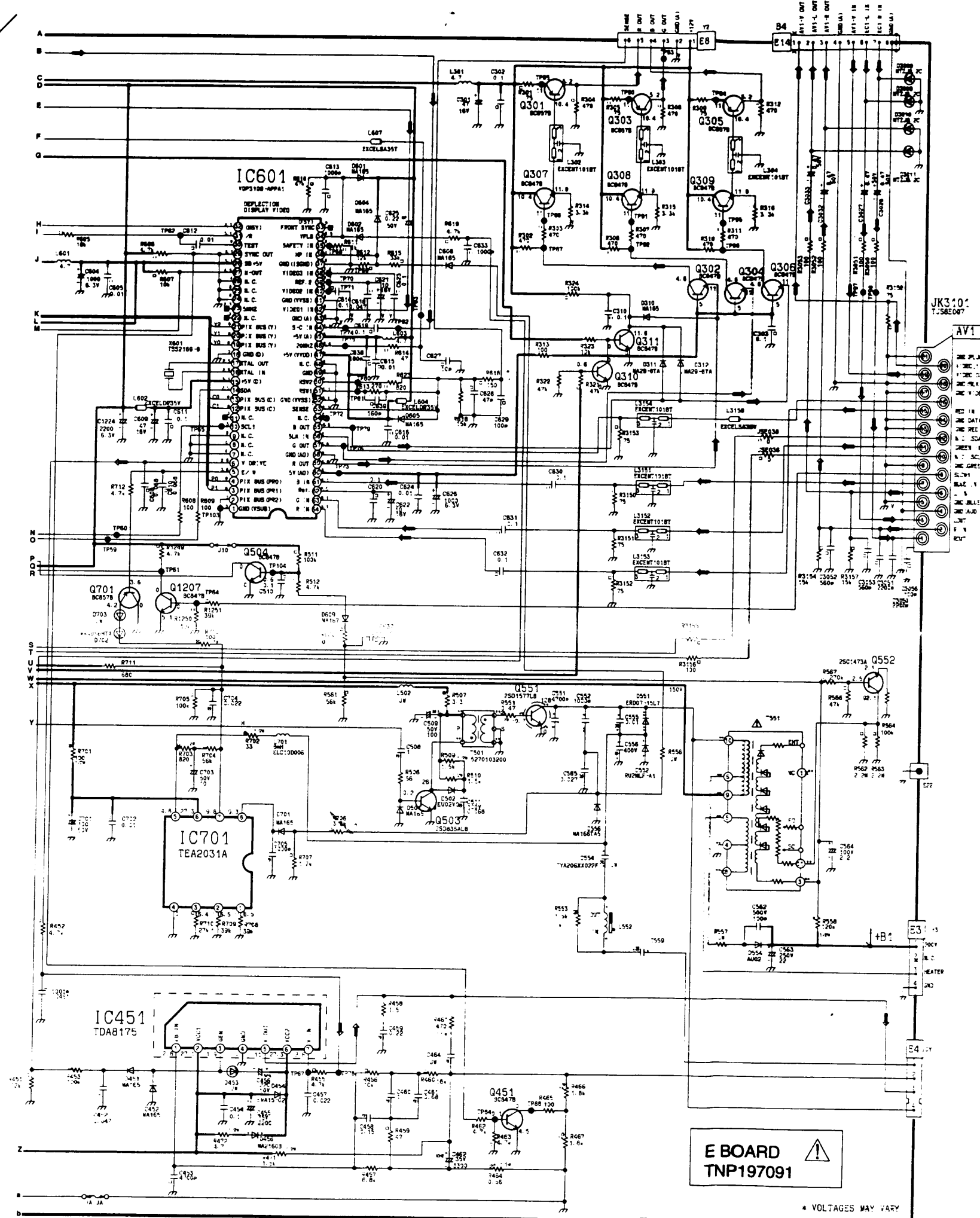
The above figures are nominal and used for representative purposes only.

Main Diagram

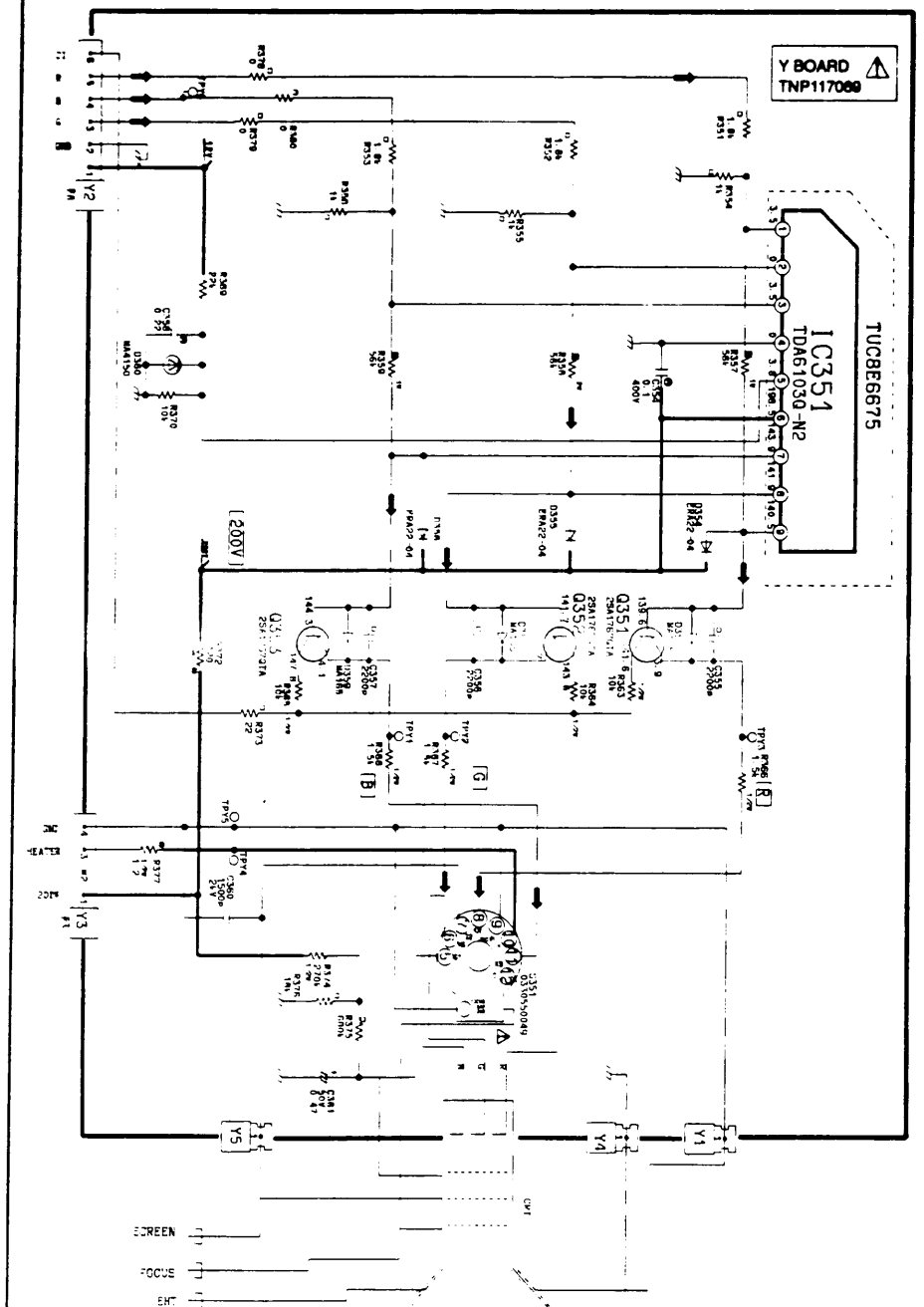


Continued at 1

Main Diagram Cont'd.



CRT Diagram



Signal Diagram

