

General Information

1994 (1995 for A90 Series)

Chassis : PC-31A

CRT's:

A51KPD12XX

A48KVK02XX

A34KPU02XX

Remote Control:

105-210B (Remote only)

105-212D (Text)

Main Power Button:

441-315B (14")

441-320B (20")

441-347A (21")

441-494A (CI-14A80 only)

441-364A (CI-20A90/90F)

Battery Cover:

303-H40A (Remote only)

303-H73A (Text)

Specifications Cont'd.

Antenna Input Impedance: VHF/UHF 75 Ω
(unbalanced)

Voice Coil Impedance: 8 ohm

OSD (On Screen Display): Menu method

Sound Output:

(at 50 kHz Deviation): 14": 1.5W typ-
3.5W max.

19" - 21": 2.0W typ-4.0W

Local Buttons: Menu, OK,

Volume up (+), Volume down (-),

Program up (+), Program down (-)

External (through Euro-Socket):

Audio in: 0.5 Vrms \pm 3dB, over 10K ohmAudio out: 0.5 Vrms \pm 3dB, below 1K ohmVideo in/out: 1 Vp-p \pm 3dB, 75 ohmRGB in: 0.7 Vp-p \pm 3dB

Function: ACMS

(Auto Channel Memory

System)+a (Alpha) Manual

program, Auto sleep, Quick view,

Teletext (FLOF/TOP/LIST)-OPTION

Child lock: (in case of choosing Lock On,

you can power on/off only with the

remote control. To cancel this mode,

select Lock Off with menu button

on remote control).

Service Adjustments

Alignment Procedures

- 1: It is safe to adjust after using insulating transformer between the power supply line and chassis input to prevent the risk of electric shock and protect the instrument.
- 2: Never disconnect leads whilst the TV receiver is on.
- 3: Don't short any portion of circuits whilst power is on.
- 4: The adjustment must be done by the correct appliances.
- 5: Unless otherwise noted, set the line voltage to 230V \pm 20%, 50/60 Hz.

Test Equipment

- 1: VIF sweep generator.
- 2: Colour bar/cross hatch pattern generator.
- 3: DC power supply (24V) x 2.
- 4: Digital multi meter.
- 5: Oscilloscope.

Regulated B+ Adjustment

Test Point: TP 1.
Adjust: VR801.

- 1: Turn the TV set to receive a broadcast signal.
- 2: Set colour, brightness and contrast to max. position.
- 3: Connect DC voltmeter to TP 1 (R437).
- 4: Adjust VR801 for:
112V \pm 0.3/-0.1 as to smaller model than 21".
118V \pm 0.3/-0.1 as to 21".

Note: This adjustment should be performed after warming the TV set up for 10 minutes.

VCO (Voltage Controlled Oscillator)

- 1: Connect measuring equipment to the TV as shown in fig 1.

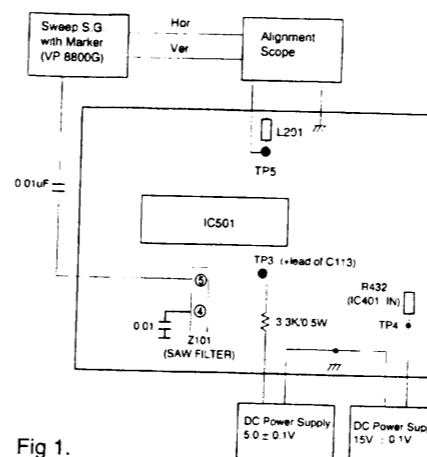


Fig 1.

- 2: Adjust VL201 so that the level of Picture carrier (Pc) marker point is at the lowest position, see fig. 2.

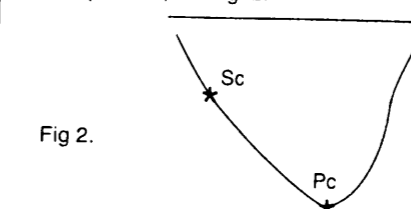


Fig 2.

Note:

- 1: In case of the model of PAL/SECAM-B/G, D/K system, Pc frequency is 38 MHz. In case of PAL-1, 39.5 MHz.
- 2: When performing this adjustment, if there are two adjusted points in VL201, select the lower core position.

RF AGC Adjustment

The RF AGC control (VR101) was aligned at the time of manufacture for optimum performance over a wide range of conditions. Re-adjustment of VR101 should not be necessary unless unusual local conditions exist, such as:

- 1: Channel interference in a CATV system.
- 2: Picture bending and/or colour beats, which are usually due to excessive RF signal input when the receiver is too close to a transmitting tower or when the receiver is connected to an antenna distribution system, where the RF signal has been amplified. In this case, the input signal should be attenuated (with a pad or filter) to a satisfactory level.
- 3: Picture noise caused by 'broadcast noise' or weak signal. If the broadcast is 'clean' and the RF signal is at least 1mV (60dBu), the picture will be noise free in any area.

Adjusting the VR101 (RF AGC) control to one end of rotation will usually cause a relatively poor signal to noise ratio. Adjusting to the other end of rotation will usually cause a degradation of overload capabilities resulting in colour beats or adjacent channel reference. For best results, adjust the VR101 control while performing on all other local channels, or the voltage at TP2 will be as in below table.

SYSTEM	Voltage	Tuner P/N
B / G	5.8 \pm 0.1	113-232B
B / G	6.0 \pm 0.1	113-232C
I	5.5 \pm 0.1	113-232E
B / H	5.8 \pm 0.1	113-232B
D / K	5.8 \pm 0.1	113-232D

Horizontal Centre Adjustment

Test Point: Observing Display.
Adjust: VR401.

- 1: Tune the TV set to receive a broadcast signal.
- 2: Adjust the H-shift control (VR401) for obtaining geometric centre of valuable display horizontally.

Vertical Size, Linearity, Centre Adjustment

Test Point: Observe Display.
Adjust: VR302 (vertical size)
VR301 (vertical linearity)
SW301 (vertical centre)

- 1: Tune the TV set to receive digital test pattern.
- 2: Re-set colour and brightness to 50% and contrast to 75%.
- 3: Adjust the vertical size control (VR302) for approximately 1/8 inch overscan at top and bottom of display.
- 4: Adjust the vertical linearity control (VR301) to obtain which upper half circle of the pattern is the same vertical length as the lower half circle.
- 5: Adjust the vertical centre control (SW301) for obtaining geometric centre of valuable display vertically.

Focus Adjustment

Test Point: Observe Display.
Adjust: Focus control of FBT.

- 1: Set colour to minimum, brightness and contrast to maximum.
- 2: Tune the TV set to an inactive channel station (snow condition).
- 3: Adjust the focus control for best overall focus.

Screen and White Balance Adjustment (Colour Temperature)

Note: The colour bias controls (VR901, VR902, VR903) affect the low (dark) area of the picture while the colour drive controls (VR904, VR905) affect the high light (white) areas.

- 1: Tune the TV to a local channel and set the colour and brightness to minimum and the contrast to maximum.
- 2: Adjust screen VR of FBT so that 100% black area of the grey scale is the same brightness as 80% black area.
- 3: By using colour analyser (white balance checker) adjust X = 281 \pm 8, Y = 288 \pm 8. It means colour temperature is 10000° K at low light (6ft. L), at high light (over 45ft. L).

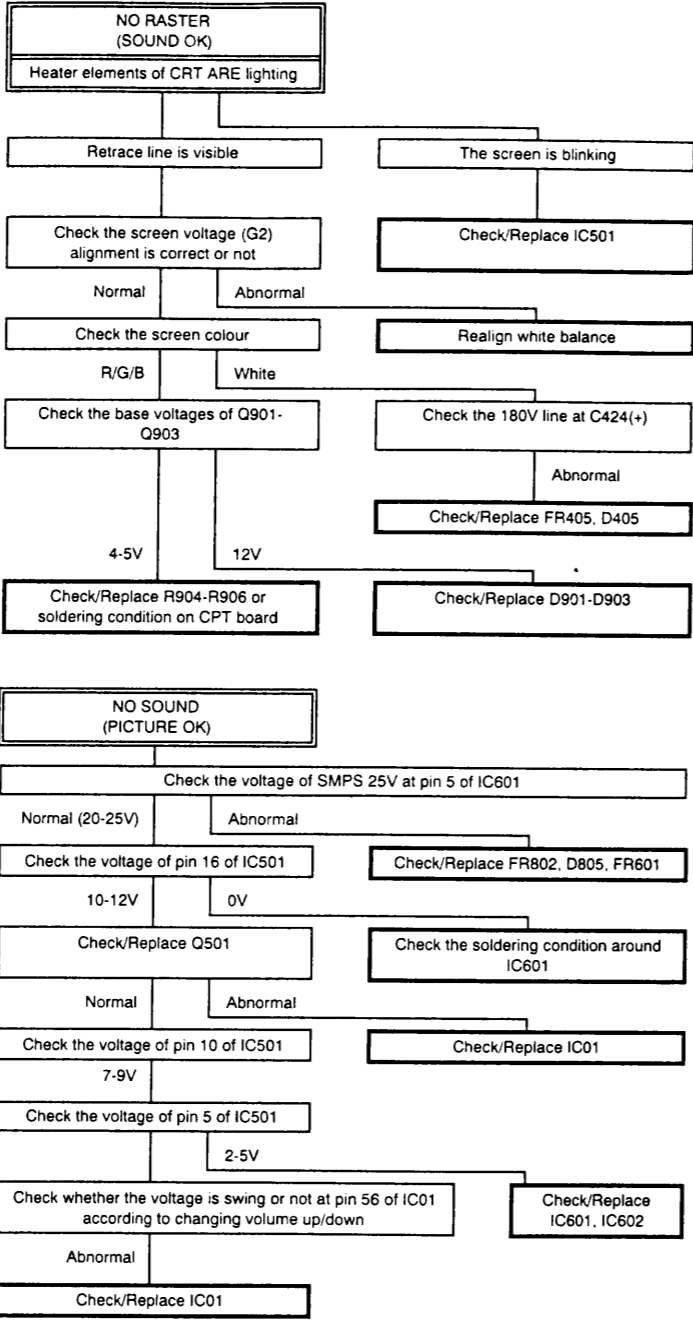
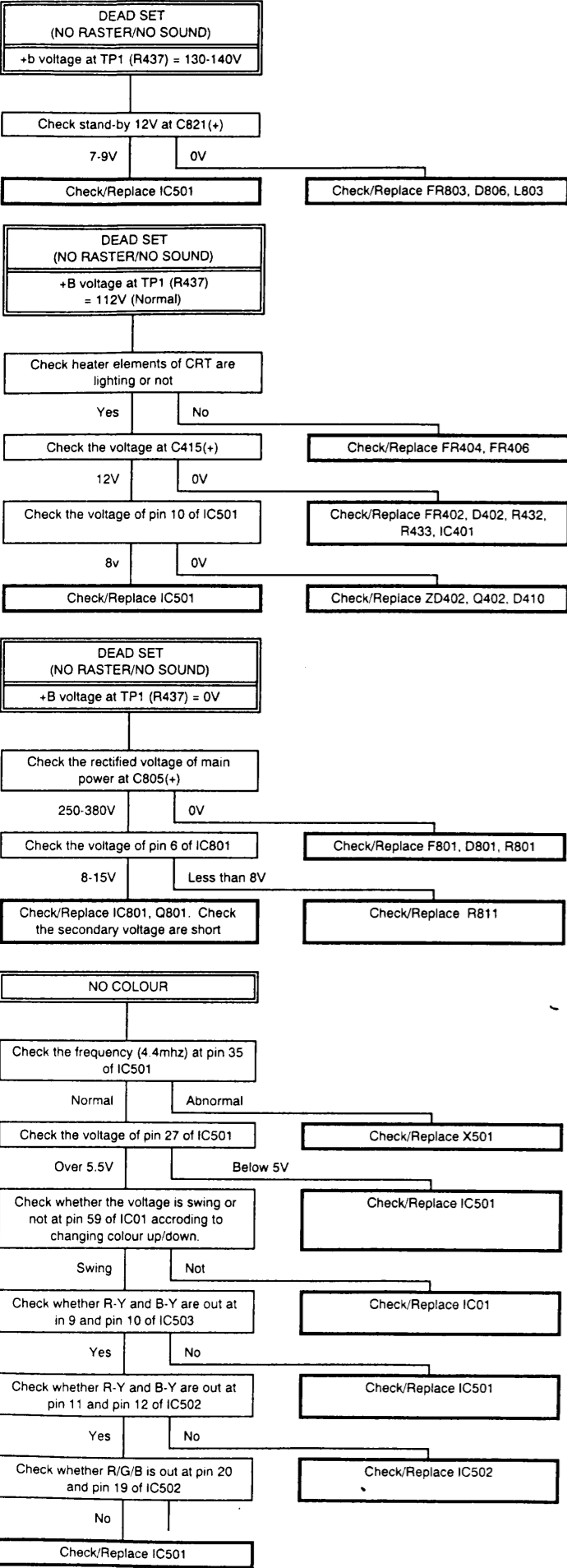
Recommended Safety Parts

Item	Part No.	Description
1	2055-V0642W	CPT (20")
1	2055-V0672D	CPT (21")
1	2055-V0744D	CPT (14")
5	150-438J	Degaussing Coil (20")
5	150-438K	Degaussing Coil (21")
5	150-276F	Degaussing Coil (14")
6	170-851B	Lead Set ASSY, CPT Earth (20", 21")
6	170-851A	Lead Set ASSY, CPT Earth (14")
22	154-106C	FBT (20")
22	154-194D	FBT (21")
22	154-064P	FBT (14")
44	140-278C	Main Switch
C805	181-474B	Capacitor CE (400V/200 μ F) SRF Lead Type
C851, C852	181-408B	Capacitor 0.15 μ F (ISKRA 1531)
C854	181-157B	Capacitor DE 2200pF M
DB801	162-045A	Diode Bridge, RB-156
F801	131-098B	Fuse 4A 250V HBC Time Delay 5 X 20
FR401	0RF0471H609	R. Fusible 4.7 1/2W 5%
FR402	0RF0470J607	R. Fusible 0.47 1W 5%
FR403	0RF0561H609	R. Fusible 5.6 1/2W 5%
FR404	0RF0102J607	R. Fusible 10 1W 5% (14")
FR404	0RF0201J607	R. Fusible 2 1W 5% (20")
FR404	0RF0391J607	Resistor Fusible 3.90 1W 5% TA62 (21")
FR405, FR803	0RF0101H609	R. Fusible 1.0 1/2W 5%
FR406	0RF0201J607	R. Fusible 2 1W 5% (20")
FR406	0RF0301J607	R. Fusible 3 1W 5% (21")
FR406	0RF0561J607	Resistor Fusible 5.60 1W 5% TA62 (14")
FR601	0RF0102J607	R. Fusible 10 1W 5%
FR802	0RF0221H609	R. Fusible 2.2 1/2W 5%
L851	150-982A	Coil Line Filter 70 QUAS H SQE
Q801	0TR900000AA	Transistor BUZ-90 (Siemens) SIP MOS
R851	180-783F	Resistor, RC 4700K 2W K
T801	151-485A	Transformer SMPS
TH801	163-012C	TDA4605-25 PC-31A Narrow
1	112-C14A	CPT
6	170-799A	Lead Set, ASSY CPT Earth
FR404, FR406	0RF0561J607	Resistor Fusible 5.6 1W 5% TA62

Recommended Safety Parts

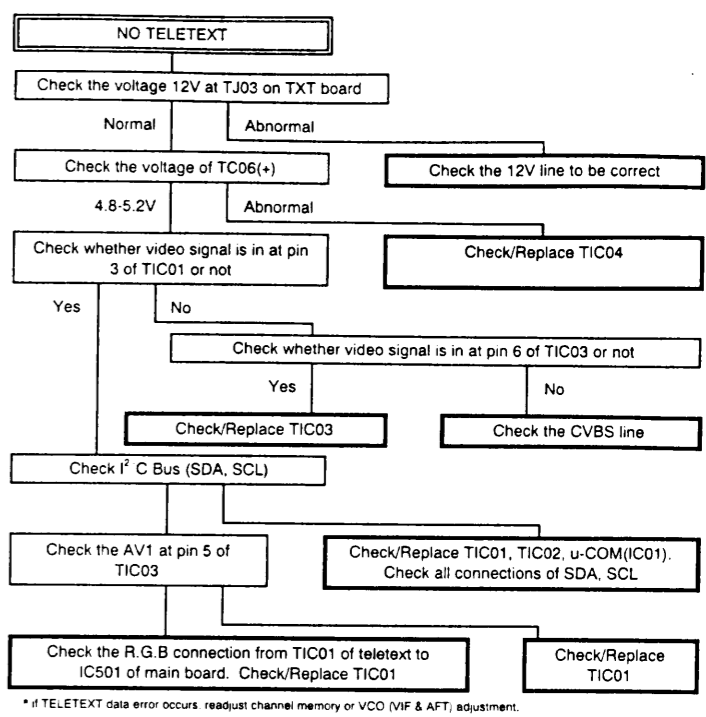
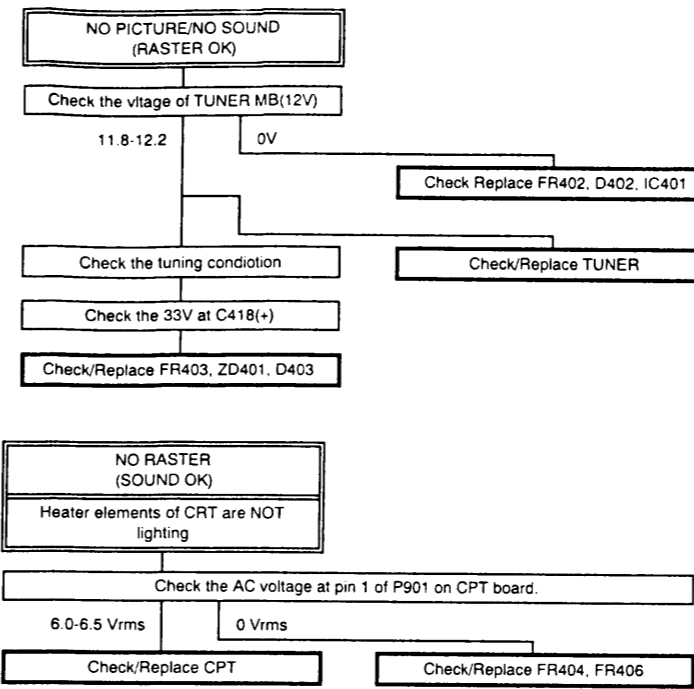
Item	Part No.	Description
1	112-C20A	CPT
5	150-438J	Degaussing Coil
6	170-704N	Lead Set ASSY, CPT Earth
22	154-106C	FBT
23	174-225C	
	(W/O. TXT)	Cord ASSY Power
23	174-225D	
	(W.TXT)	Cord ASSY Power
44	140-278C	Main Switch
C805	181-004B	Capacitor CE 400V 120 μ F M 2 Lead (85)
C851, C852	181-017B	Capacitor MPP (box) AC 250V 0.15 μ F K
C854	181-035P	Capacitor DE1410 E KD 222M
DB801	162-045A	Diode Bridge RB-156
F801	131-098B	Fuse 4A 250V HBC Time Delay 5 X 20
FR401	180-834A	Resistor FNW 1W 0.470 OHM J TP
FR402	0RF0470J607	R. Fusible 0.47 1W 5%
FR403	0RF0101H609	R. Fusible 1 1/2W 5%
FR404	0RF0201J607	R. Fusible 2 1W 5%
FR405, FR803	0RF0101H609	R. Fusible 1.0 1/2W 5%
FR406	0RF0201J607	R. Fusible 2 1W 5%
FR601	0RF0102J607	R. Fusible 10 1W 5%
FR802	0RF0221H609	R. Fusible 2.2 1/2W 5%
L851	150-F06K	Coil Line Filter SQE2930 60MH
Q801	0TR900000AA	Transistor BUZ-90 (Siemens) SIP MOS
R851	180-783F	Resistor, RC 4700K 2W K
SW801	140-278C	Main Switch ME5C (TV-5)
T801	151-485A	Transformer SMPS
TH801	163-012C	TDA4605-25 PC-31A Narrow
		Thermistor J502P54E180M220

Trouble Shooting Guides

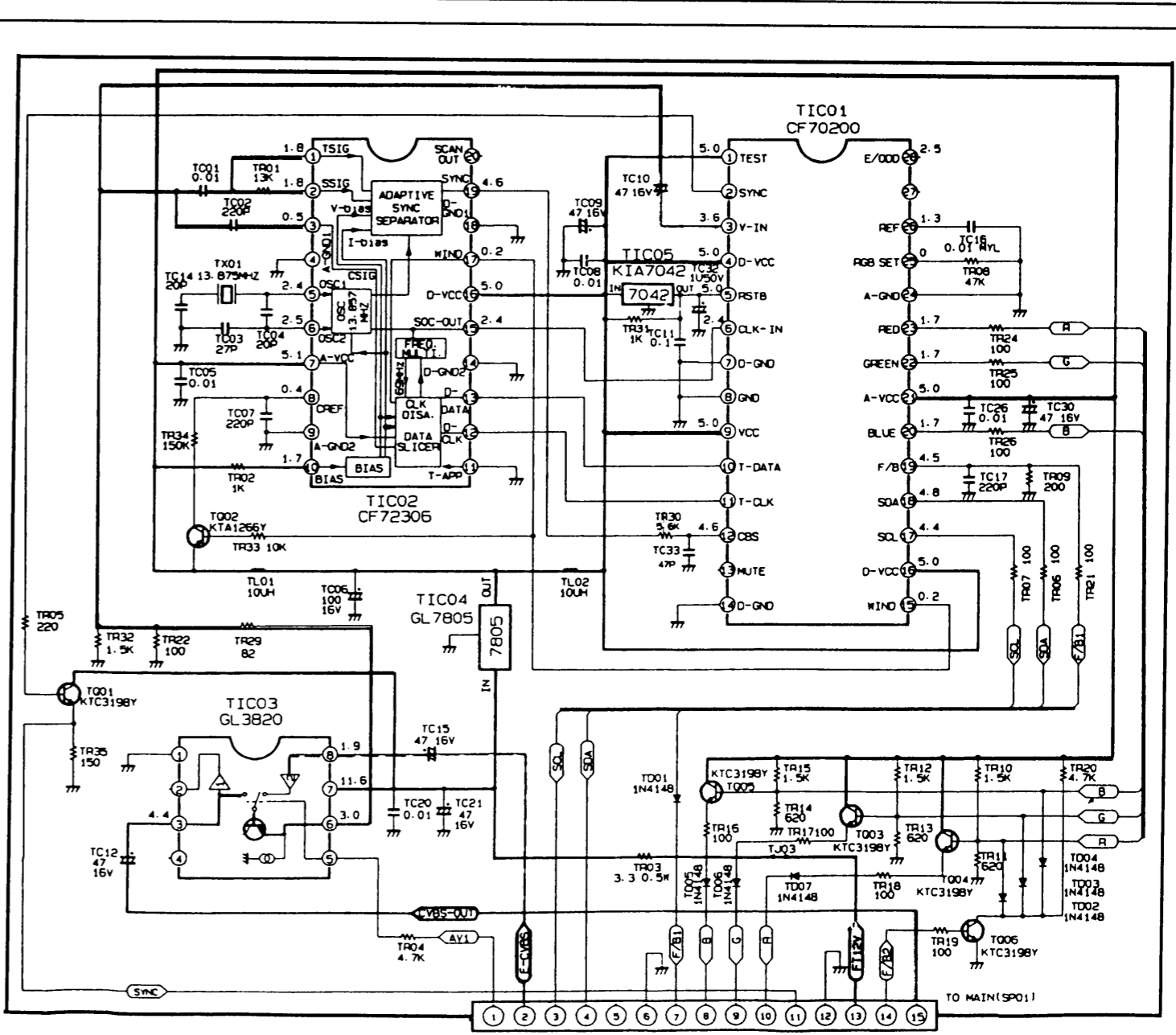


Note: Sound is muted whenever the screen is noise condition (i.e. broadcasting system is not found)

Teletext Diagram



* If TELETEXT data error occurs, readjust channel memory or VCO (VIF & AFT) adjustment.



Main Diagram

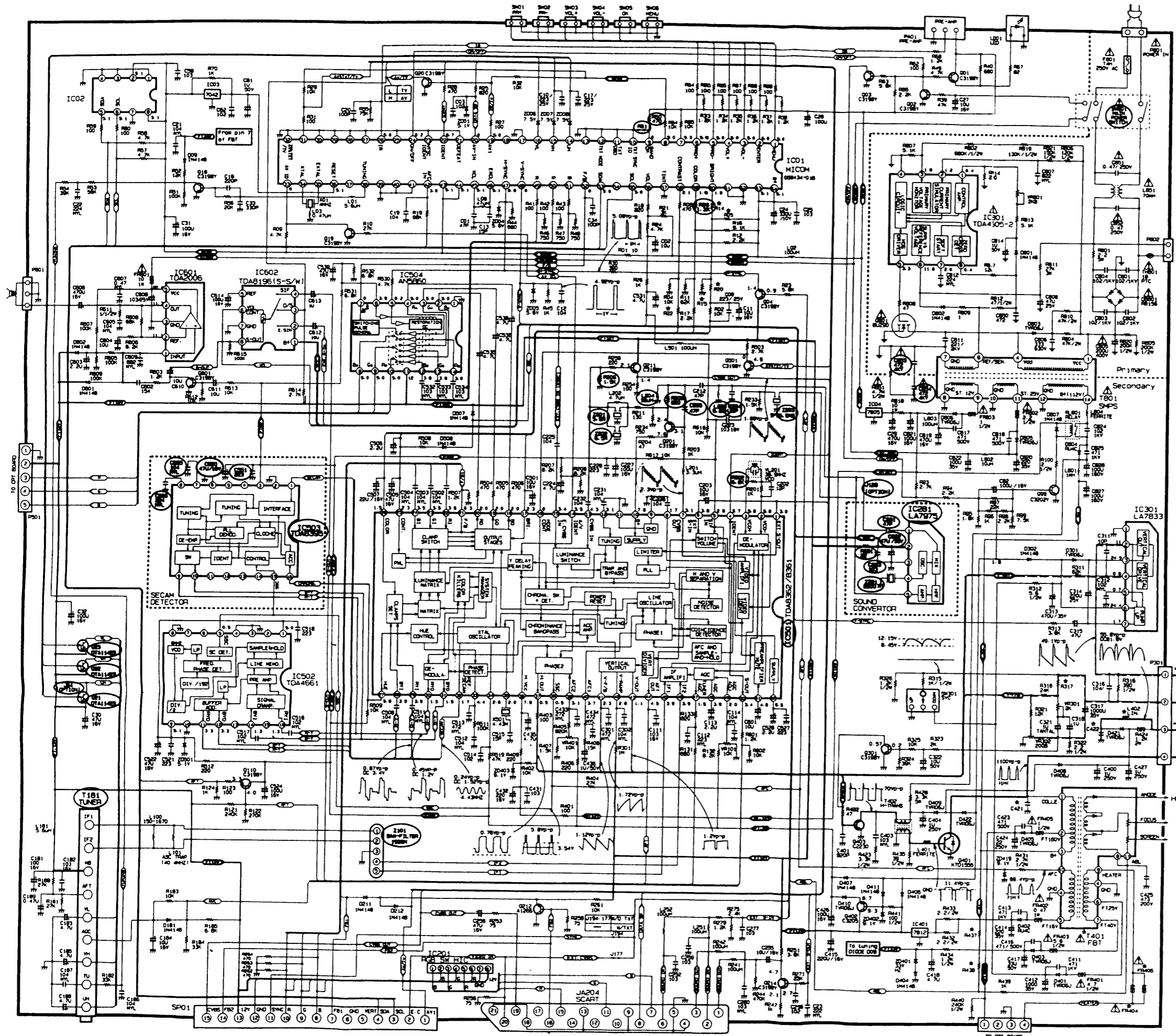


Table of receiving system

Circuit No.	B / H	B / G	D / K	I	Remarks
R06	1.5K	1.3K	1.8K	1.5K	CARBON FILM RESISTOR
R261	-	-	22	-	
R206	-	-	1.5K	-	
R202	6.8K	6.8K	10K	6.8K	
L203	6.8uH	6.8uH	10uH	6.8uH	
L204	33uH	15uH	2.2uH	8.2uH	INDUCTOR
C281	TIN WIRE	TIN WIRE	47pF	TIN WIRE	CAP. TUBULAR
C282	-	-	47u/16V	-	CAP. CE
C283	-	-	103p	-	CAP. TUBULAR
C284	-	-	18p	-	CAP. TUBULAR
C285	-	-	47p	-	CAP. TUBULAR
C525	-	-	104J 50V	-	CAP. MYLAR
C526	-	-	224J 50V	-	CAP. MYLAR
C550	-	-	47u/16V	-	CAP. CE
C551	-	-	0.022u/50V	-	CAP. CERAMIC
C851	474 250V	474 250V	154 250V	-	X-CAPACITOR
C853	TIN WIRE	4700/4KV	4700/4KV	TIN WIRE	Y-CAPACITOR
C854	2200/2KV	4700/4KV	4700/4KV	2200p/4KV	Y-CAPACITOR
G21	DIA114ES	DIA114ES	DIA114ES	-	TRANSISTOR
G22	DIA114ES	DIA114ES	DIA114ES	-	TRANSISTOR
G23	DIA114ES	DIA114ES	DIA114ES	-	TRANSISTOR
IC281	-	-	LA7975	-	S-CONVERTOR
IC501	TD48361	TD48361	TD48362	TD48361	JUNGLE
IC503	-	-	TD48395/Ni	-	SECAM
Z101	G1966M	G1966M	K1950	J1953M	SAM FILTER
Z201	TPS5.5M	TPS5.5M	TPS5.5M	TPS5.0M	FILTER TRAP
Z202	TPS6.5M	TPS6.5M	TPS6.5M	TPS6.5M	FILTER TRAP
Z203	5.5M	5.5M	6.0M	6.0M	FILTER BPF
Z281	-	-	C58500	-	RESONATOR
		238B	238D	238E	TUNER
T181	238B	238C	238F	-	TUNER (HYPER BAND)
J94	-	-	-	TIN WIRE	
J128	TIN WIRE	TIN WIRE	-	TIN WIRE	
R50	-	-	-	470	
R61	TIN WIRE	TIN WIRE	TIN WIRE	-	
R205	820	820	-	820	

Text language and mode option for U-Com IC (IC101)

PIN NO.	FUNCTION				REMARKS
	LANGUAGE		MODE		
	WEST	EAST	TOP/FLOF	FLOF	
11	LOW (0)	HIGH (1)	-	-	LOW (0) : GND
12	-	-	HIGH (1)	LOW (0)	HIGH (1) : 5V

Inch conversion table

Circuit No	14"	20"	21"	Remark
C.P.T	A34KP020XX	A48KVK020XX	A51KP012XX	CPT
D Y	113V	151D	110F	153-
T401	064P	106C	194D	FBT (154-)
C421	602H	862H	822H	MPP 1.6KV
C422	394	474	474	MOIP 200V
L402	224L	224C	224C	COIL (150-)
L901	10uH	10uH	100uH	COIL
FR404	10	2	3	RES FUSIBLE 1W
FR406	5.6	2	3	RES FUSIBLE 1W
R05	1.5K	1.8K	1.8K	RES. FIXED 1/6W
R14	820	330	330	RES. FIXED 1/6W
R15	12K	6.8K	6.8K	RES. FIXED 1/6W
R20	2.7K	4.7K	4.7K	RES. FIXED 1/6W
R22	6.8K	4.7K	5.6K	RES. FIXED 1/6W
R317	22K	22K	27K	RES. FIXED 1/6W
R437	68K	56K	56K	RES. FIXED 1/2W
R438	82K	68K	68K	RES. FIXED 1/2W