

General Information

1994 (1993 25C20F)
Covers Models:
Goldstar CF-25C22F
Goldstar CF-28C22F
Chassis: PC-33J
CRT's: 25" and 28"
Remote Control: 105-212C
Door Flap:
315-402A (25C20F)
315-316B (28C22F)
315-614B (25C22F)
Main Power Button:
441-363C (25C20F)
441-330A (28C22F)
4410-386A (25C22F)
Battery Cover: 303-H73A

Matrix

Item	See Model
Safety Notes	Goldstar CI-14A50
CRT Adjustments	Goldstar CI-14A80F

Specifications

Video Input System:	PAL-B/G/D/K/I SECAM-B/G/D/K NTSC-3.58/4.43 (only A/V)
Power Requirements:	AC 240VAC, 50 Hz
Power Consumption:	25": 150W, 29": 160W
Intermediate Frequency:	
Vision (Vc):	PAL-B/G: 38.9 MHz PAL-D/K: 38 MHz PAL-1: 39.5 MHz SECAM-B/G: 38.9 MHz SECAM-D/K: 38 MHz NTSC: only A/V
Sound (Sc):	PAL-B/G: 33.4 MHz PAL-D/K: 32 MHz PAL-1: 33.5 MHz SECAM-B/G: 33.4 MHz SECAM-D/K: 32 MHz NTSC: only A/V
Colour (Cc):	PAL-B/G: 34.47 MHz PAL-D/K: 33.57 MHz PAL-1: 35.07 MHz SECAM-B/G: Vc-4.25 MHz, Vc-4.40625 MHz SECAM-D/K: Vc-4.25000 MHz, Vc-4.40625 MHz NTSC: 3.58 MHz, 4.43 MHz
Tuning System:	FS (Frequency Synthesiser): 60 program memory
Tuning Range:	
VHF-LOW:	TV: Ch. 2 - 4 CATV: S1' - S3', S1
VHF-HIGH:	TV: Ch. 5 - 12 CATV: S2 - S10, S11 - S20
HYPER:	CATV: S21 - S41
UHF:	TV: Ch. 21 - 69

Specifications Cont'd.

Antenna Input Impedance:	VHF/UHF 75 Ω (unbalanced)
Voice Coil Impedance:	8 ohm
OSD (On Screen Display):	Menu method
Sound Output:	12W max x 2 way
Sound:	Option, Dual/Stereo (2 carrier)/Stereo (NICAM)
Local Buttons:	Menu/OK, Volume up (+), Volume down (-), Program up (+), Program down (-)
External Connection:	S-VHS in JACK for external speaker (P653, P654) SCART (EURO socket, SK101) JACK A/V
Video in/out:	Scart/Jack A/V: 1Vp-p \pm 3dB, 75 ohm
Audio in:	Scart (2 way)/ Jack A/V: 0.5Vrms \pm 3dB, over 10K ohm
Audio out:	Scart (2 way)/ Jack: 0.5Vrms \pm 3dB, below 1K ohm
RGB. in:	Scart: 0.7Vp-p \pm 3dB, 75 ohm
Teletext:	Scart/Jack A/V: Option FLOF/TOP/LIST
Function:	Auto Program, Manual program, Auto sleep, Quick view,
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

Safety Precautions

Warning: Before servicing this chassis, read the X-Ray Radiation precautions, Safety instructions and the Product safety notice.

X-Ray Radiation

- Excessive high voltage can produce potentially hazardous X-Ray radiation. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 29KV at zero beam current (minimum brightness) under specified power source. The high voltage must not, under any circumstances, exceed 30KV. Each time a receiver requires servicing, the high voltage should be checked. It is recommended the reading of the high voltage be recorded as part of the service record. It is important to use an accurate and reliable high voltage meter.
- The only source of X-Ray radiation in this TV receiver is the picture tube. For continued X-Ray radiation protection, the replacement tube must be exactly the same type tube as specified in the parts list.

- Some parts of this receiver have special safety related characteristics for X-Ray radiation protection. For continued safety, parts replacement should be undertaken only after referring to the Product Safety Notice.

Alignment Procedures

- 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.
- Never disconnect leads whilst the TV receiver is on.
- Don't short any portion of circuits whilst power is on.
- The adjustment must be done by the correct appliances. But this is changeable in view of productivity. Unless otherwise noted, set the line voltage to 230V \pm 10%, 50 Hz.
- Oscilloscope.

Test Equipment

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

Preparation for VIF and AFT Adjustment

- Connect the measuring equipment to the TV as shown in fig. 1.
- Connect BP capacitor (4.7mF/50V) to the pin 24 of IC101.
- Set RF output level of sweep S. G (signal generator) TP 100dBm.

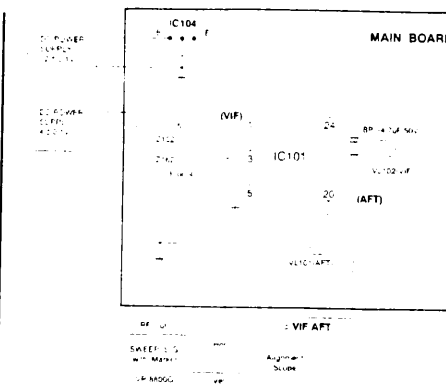


Fig 1.

- Set Alignment Scope, Volts/Div to 100mV or 1V (AFT), AC/DC switch to AC, Line/Ext switch to Ext.

VIF (Video Intermediate Frequency) Adjustment

Test Point: Pin 1 of IC101
 Adjust: VL102

- Turn on DC power supplies.
- Adjust Video Detector Coil (VL102) so that a waveform on alignment scope is as fig. 2.

A: 319 MHz
 B: 33.4 MHz
 C: 33.97 MHz
 D: 34.47 MHz
 E: 35.22 MHz
 F: 38.15 MHz
 G: 38.9 MHz
 H: 40.4 MHz

Fig 2.
VIF waveform on alignment scope

AFT (Auto Fine Tuning) Adjustment

Note: This adjustment should be performed after adjusting IF AGC voltage exactly (4.0 \pm 0.1V).

Test Point: Pin 20 of IC101.
 Adjust: VL101

- Turn on DC power supplies.
- Adjust IF AFT coil (VL101) so that 38.9 MHz (Vc) point will be centre as in fig. 3

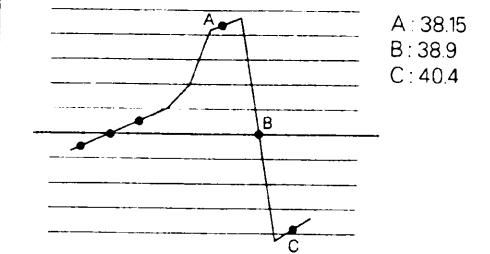


Fig 3.

Regulated B+ Adjustment

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

Test Point: J701.
 Adjust: VR801.

- Turn the TV set to receive a broadcast signal.
- Set contrast to 47%, brightness and colour to 31% position.
- Connect DC voltmeter to J701.
- Adjust VR801 for 130V \pm 0.2VDC.

RF AGC (Auto Gain Control) Adjustment

Test Point: J138 or observing display.
 Adjust: VR101.

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:

- Channel interference in a CATV system.
- 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.
- 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 J138 will be 6.0 \pm 0.1VDC.

Pilot Carrier Detection Adjustment

Test Point: Pin 5 of IC601

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
		TDA4605-25 PC-31A Narrow
		Thermistor J502P54E180M220
TH801	163-012C	
CF-25C20F		
1	2055-V1011E	CPT
1	112-243C	CPT
4	150-822A	Degaussing Coil 29"
5	170-844B	Lead Set, CPT Earth

Recommended Safety Parts

Item	Part No.	Description
19	154-374A	FBT
52	140-278C	Main switch
C405	181-059L	Capacitor 200V 0.22MFM (28")
C405	181-128K	C.Metal Polypropylene 0.62MF 200V
C801	181-408C	Capacitor 250V 0.47 μ F (ISKRA)
C802	181-408B	Capacitor 0.15 μ F (ISKRA 1531)
C809, C810	181-124B	C. Electrolytic 200MF 400V
C841	181-157B	Capacitor DE 1410E222M ACT4K-KD
D801	0DD560000AA	Diode D5SB60 Bridge (5A/600V) S. D. G.
D802	0DD414809ED	Diode (DS4148) TA
FR301	0RF0221H609	Resistor Fusible 2.2 1/2W 5% TA52
FR651, FR702,		
FR703	0RF0470J607	R. Fusible 0.47 1W 5% TA62
FR701, FR704	0RF0470H609	R. Fusible 0.47 1/2W 5% TA52
FR705, FR803	0RF0101K607	Resistor Fusible 1 2W 5% TA62
FR802	131-069E	Fuse Micro 125V 4.0A
FR901, FR801	0RF0470K607	Resistor Fusible 0.47 2W 5% TA62
IC301	0IPH835020A	IC Philips TDA8350Q/V2
		13SIP V/AMP+E/W
IC801	0ISM460520A	IC Siemens TDA5604-2 8DiP
		SMPS Controller
L801, L802	150-897B	Coil L/F 20MH 0.20 ohm 3.5A (AC)
R405	0RS1201J607	Resistor. Fix Metal Film Oxide
		1.20K 1W 5% TA62
R801	180-042K	Resistor 470K ohm 1/2W K
R802	180-344H	R. Cement RWR 1 ohm 10W J
R840	180-783G	Resistor RC 1/2W 825 K Taping
T401	151-386A	Transformer H. Drive 19Y4BY
T801	151-587B	Transformer SMPS (TDA4605-2) Wide
TH802	163-051A	Thermistor J5 03 P5 3D 140M 290S

Service Adjustments Cont'd.

- 1: Tune the TV set to receive a broadcast signal with stereo sound signal.
- 2: Connect probe of oscilloscope to Pin 5 of IC601.
- 3: Adjust pilot carrier detector coil (VL601) for maximum amplitude.

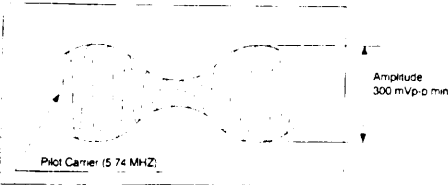


Fig 4.

Stereo Separation Adjustment

Test Point: Pin 16 of IC601.
Adjust: VR141.

- 1: Tune the TV set to receive a broadcast signal with stereo sound signal.
- 2: Set sound volume control to 35% position.
- 3: Connect probe of oscilloscope to Pin 16 of IC601.
- 4: Adjust Variable Resistor VR141 for flat amplitude.

a) Before Adjust b) After Adjust



Fig 5.

Vertical/Horizontal/E-W (East-West) Adjustment

Note: These adjustments are aligned at the time of manufacture for optimum performance. Re-adjustment of them should not be necessary unless IC02 (EEPROM) is defective. Because all the information of these adjustments are memorised in that IC.

Adjustment Procedures

Table 1: Corresponding buttons for each adjustment			
Button	OSD	Adjustment	Reference
6	VL --	Vertical Linearity	
9	VS --	Vertical Shift	
7	VH --	Vertical Height	
8	SC --	Vertical "S" compensation	Receive cross hatch pattern
1	HS --	Horizontal Shift	
2	EW --	Horizontal Width	
3	EP --	East-West parabola	Receive cross hatch pattern
4	EC --	East-West corner	Receive cross hatch pattern
5	ET --	East-West Trapezium	Receive cross hatch pattern
TXT/M	PL --	Peak Limit	PL45, set to
SIZE	GG --		GG31, set to
Reveal	RG --	White Balance	
UPDATE	BG --		
Ref) -- of OSD column means variable number, for example 35, from 00 to 63.			
NOTE: These adjustments are possible only with serviceable remote controller installed SVC button.			

- 1: Tune the TV set to receive a digital pattern unless otherwise noted.
- 2: Press the SVC button on the remote control for about 3 seconds.
- 3: Press corresponding button (refer to table 1) on remote control, then you can find individual on-screen display (OSD) around middle-left of screen.
- 4: Adjust volume up or down button for correct picture.
- 5: Press OK button to memorise all the adjusted data, then press TV button.

Adjustment

Refer to table 1.

VL- -(Vertical Linearity)

Note: When you press volume +/- button, the colour will disappear at lower half of the display.

Adjust so that the boundary line between the upper and lower half is in accord with geometric horizontal centre of the picture tube.

VS- -(Vertical Shift)

Adjust so that the horizontal centre line of digital circle pattern is in accord with geometric horizontal centre of the picture tube.

VH- -(Vertical Height)

Adjust for 1/8" overscan at top and bottom display.

SC- -(Vertical "S" Compensation)

Adjust so that all distance between each horizontal line is the same.

HS- -(Horizontal Shift)

Adjust so that the vertical centre line of the digital pattern is in accord with geometric vertical centre of the picture tube.

EW- -(Horizontal Width)

Adjust so that digital circle pattern looks like exact circle.

EP- -(East-West Parabola)

Adjust so that the middle portion of the outermost left and right vertical line looks like parallel with vertical lines of the picture tube.

EC- -(East-West Corner)

Adjust so that the vertical line at every 4 corners of the screen looks like parallel with the vertical lines of the picture tube.

ET- -(East-West Trapezium)

Adjust to make the length of top horizontal line the same as the bottom horizontal line.

Screen Voltage Adjustment

Test Point: RK (Red Cathode of CPT Board).
Adjust: Screen control of FBT.

- 1: Tune the TV set to receive digital pattern.
- 2: Set contrast to 47%, brightness and

- 3: colour to 31% individually.
- 4: Connect the probe of oscilloscope to the RK (red cathode of CPT board).
- 5: Adjust screen volume of FBT so that the waveform is the same as in fig. 6.

Peak Limit Adjustment (Refer to table 1)

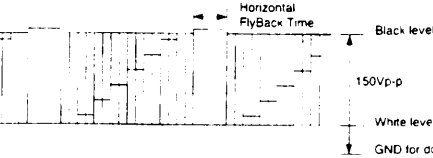


Fig 6.

- 1: Press TXT/M (Ⓜ) button on the remote control then you can find "PL- -" OSD around the middle-left of the screen.
- 2: Adjust volume up or down button for PL45.

White Balance Adjustment

Note: This adjustment should be performed after screen voltage adjustment.

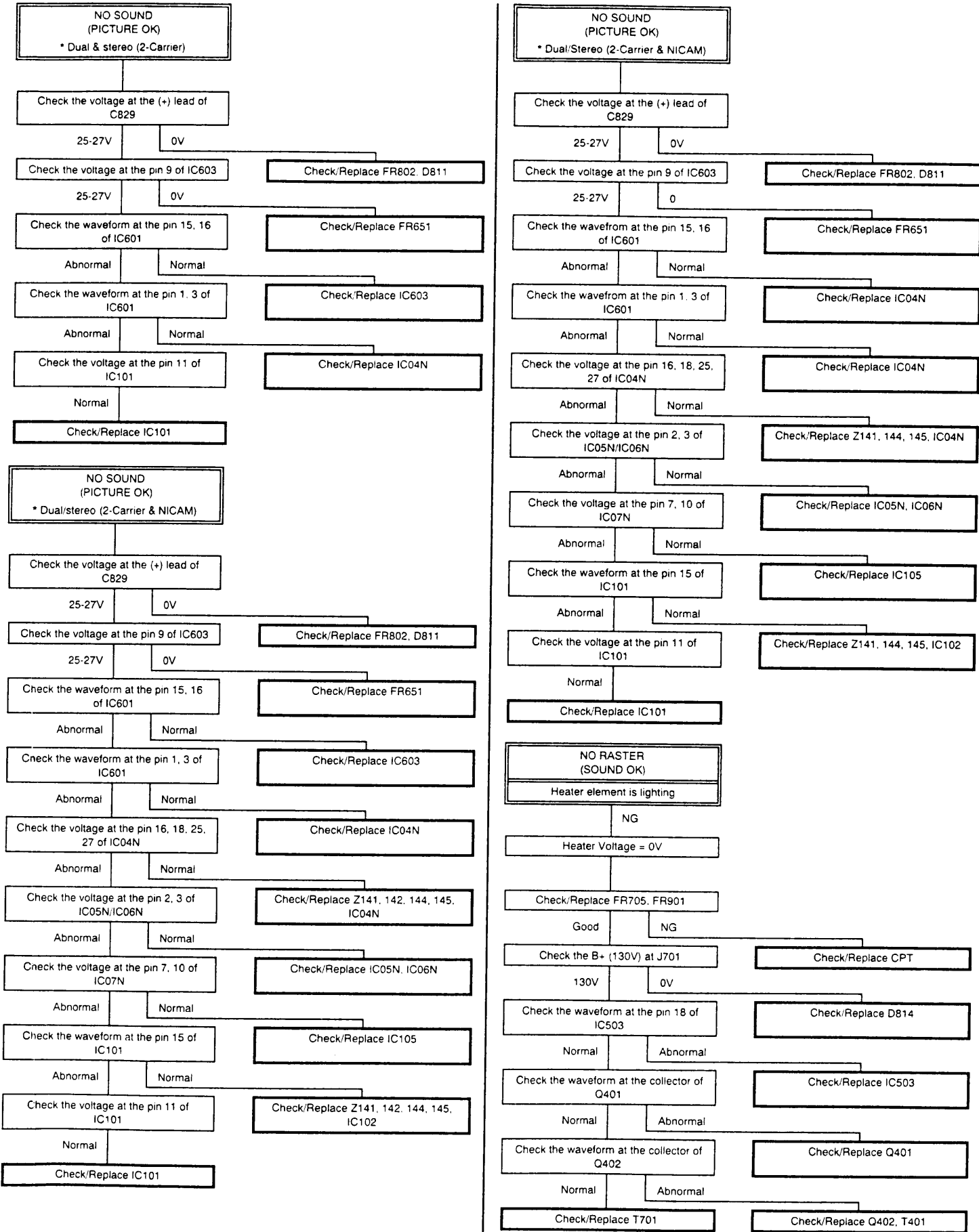
- 1: Tune the TV set to 87.5% white pattern.
- 2: Adjust contrast and brightness for 30 ± 1 ft-L at the centre area of the screen.
- 3: Press SIZE (Ⓢ) button on the remote control then you can find "GG- -" OSD around middle-left of screen.
- 4: Adjust volume up or down button for GG31.
- 5: Press REVEAL (Ⓡ) / UP DATE (Ⓡ) button you find "RG- -" / "BG- -" OSD around middle-left of screen.
- 6: Adjust volume up or down button in each status of "RG- -" / "BG- -" for X = 281 ± 10, Y = 287 ± 10 with colour analyser.

Focus Adjustment

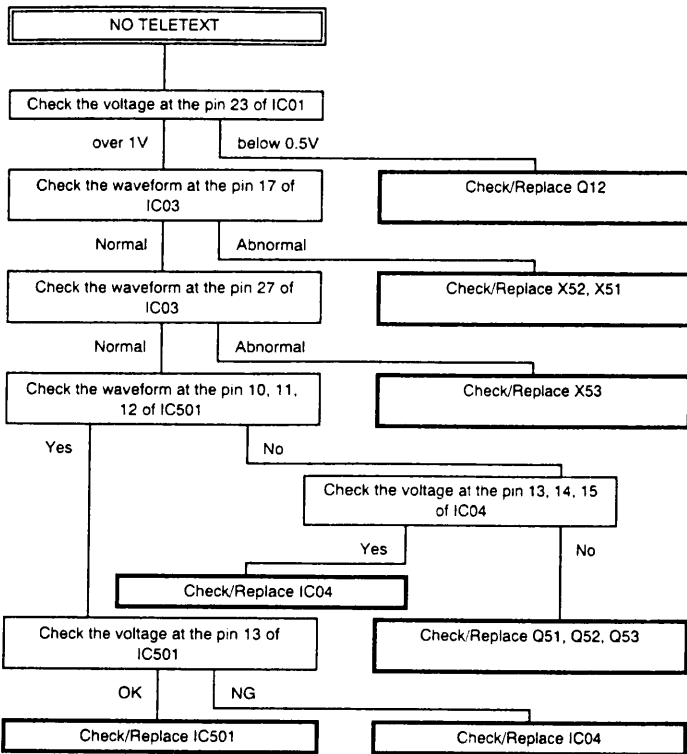
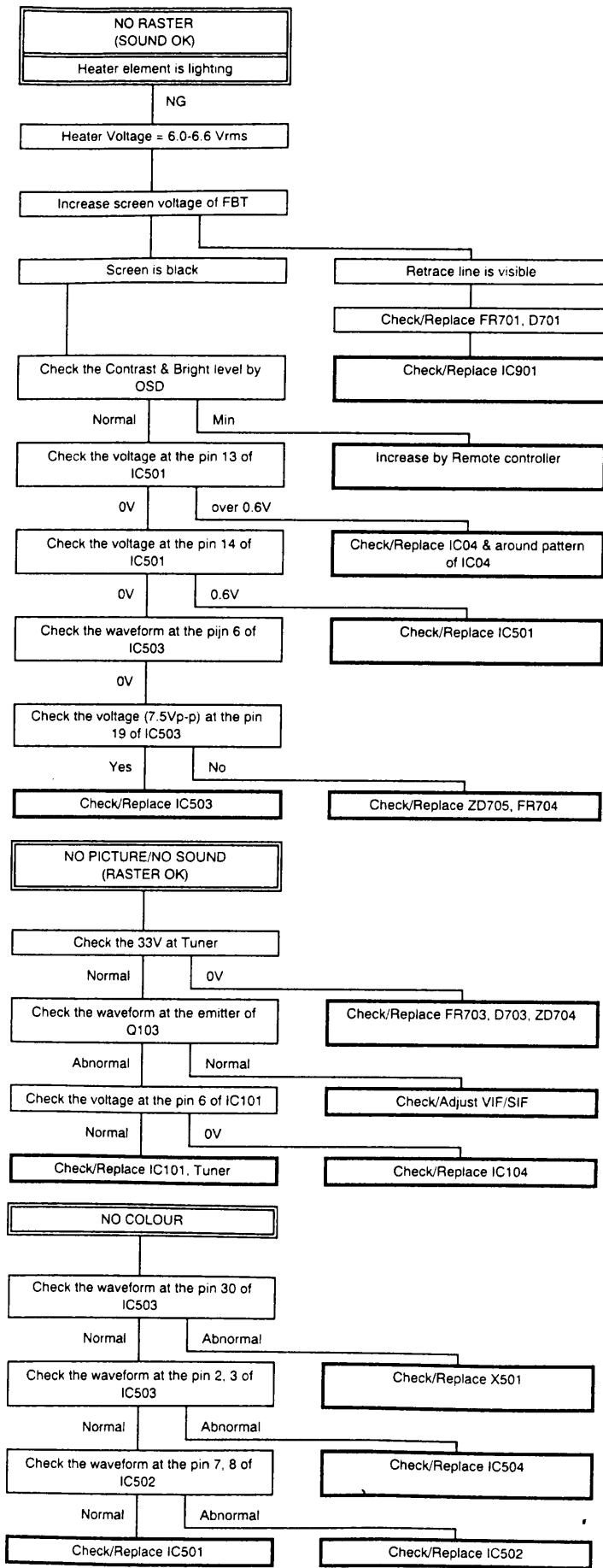
Test Point: Observe Display.
Adjust: Focus control of FBT.

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

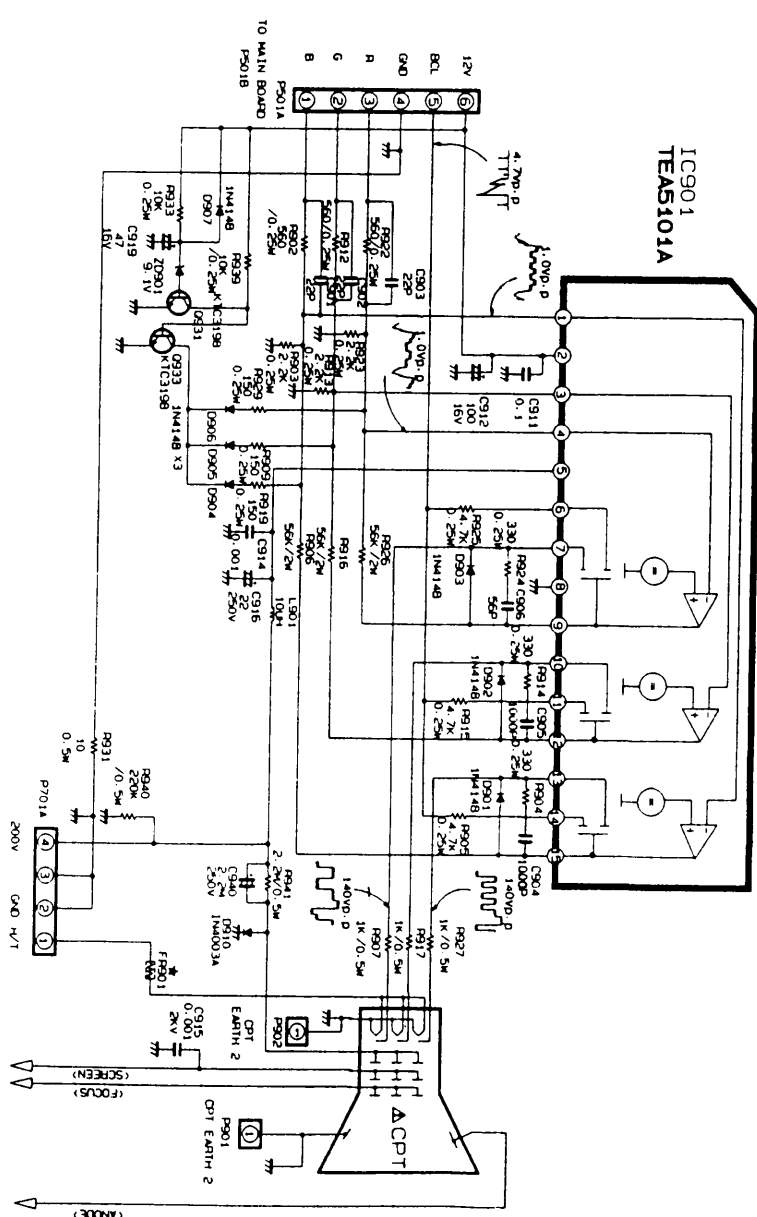
Trouble Shooting Guides



Trouble Shooting Guide
Cont'd.



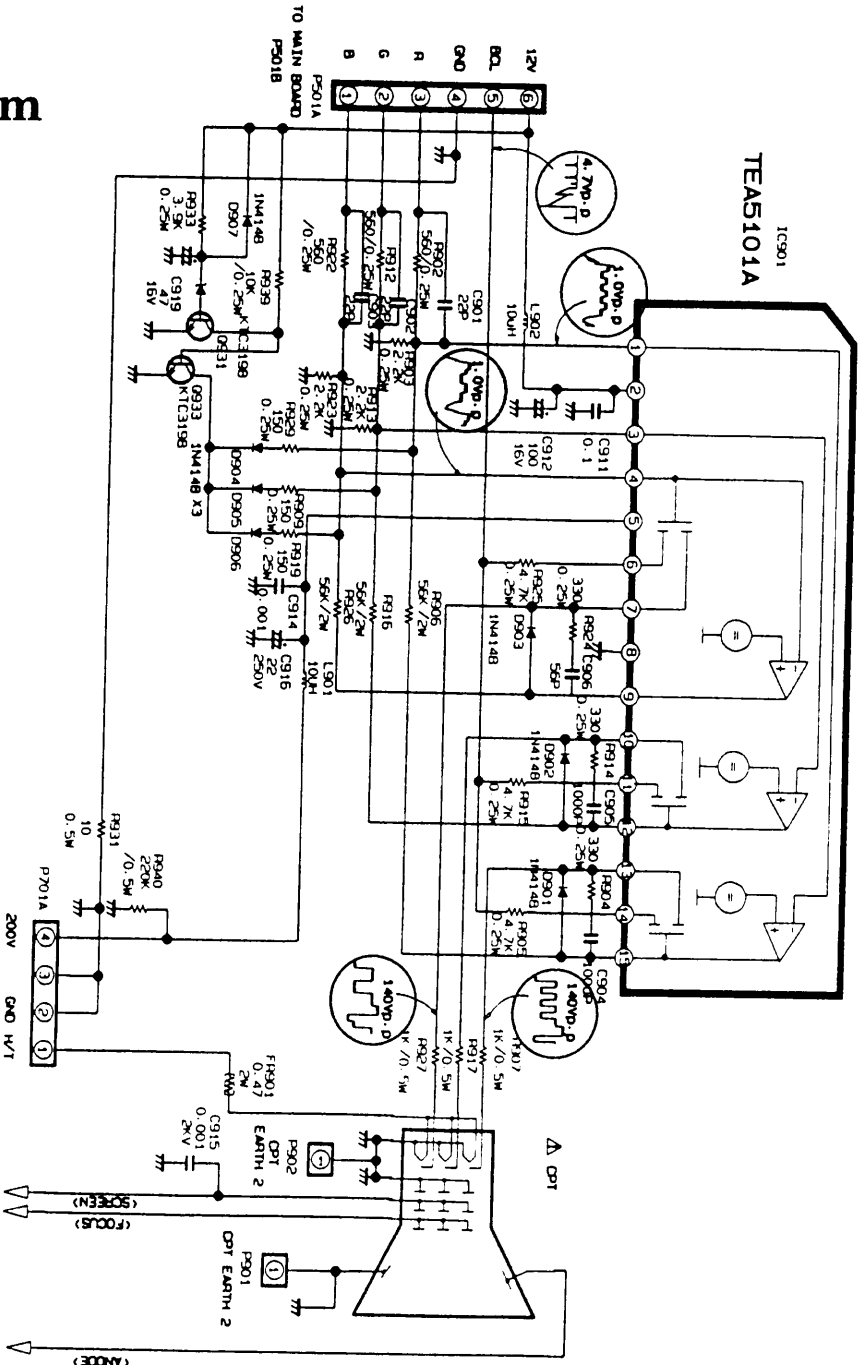
CRT
Diagram
"A"



Inch conversion table

Circuit No.	25 Inch (GS-CPT)	29 Inch (RCA CPT)	25 Inch (Philips CPT)	28 Inch (Philips CPT)
C405	CAP. MPP 200V 0.62uF	CAP. MPP 200V 0.5uF	CAP. MPP 400V 0.27uF	CAP. MPP 400V 0.22uF
C409	CAP. PE 400V 0.022uF	CAP. PE 400V 0.033uF	CAP. PE 400V 0.022uF	CAP. PE 400V 0.033uF
C407	CAP. PP 1.6kV 0.0022uF	CAP. PP 1.6kV 0.001uF	CAP. PP 1.6kV 0.0022uF	CAP. PP 1.6kV 0.001
C408	CAP. MPP 1.6kV 0.0095uF	CAP. MPP 1.6kV 0.0086uF	CAP. MPP 1.6kV 0.0022uF	CAP. MPP 1.6kV 0.001
C412	CAP. MPP 1.6kV 0.0095uF	CAP. MPP 1.6kV 0.0082uF	CAP. MPP 1.6kV 0.0091uF	CAP. MPP 1.6kV 0.001
C836/C837	CAP. ELECT. 100uF/ 150V	CAP. ELECT. 100uF/ 160V	CAP. ELECT. 100uF/ 200V	CAP. ELECT. 100uF/ 200V
C710	CAP. CERAMIC 560pF/ 500V	CAP. CERAMIC 560pF/ 500V	CAP. CQ 0.0068uF	CAP. CQ 0.0068uF
FR705	FUSIBLE 0.47 2W	FUSIBLE 1 2W	FUSIBLE 1.8 2W	FUSIBLE 4.7 2W
L403	150-715P	150-716N	150-716M	150-159G
T701	154-374A	154-374A	154-374B	154-374B
T801	151-587B	151-587B	151-590A	151-590A
FR901	FUSIBLE 0.47/2W	FUSIBLE 0.47/2W	FUSIBLE 4.7/2W	FUSIBLE 0.68/2W
FR704	FUSIBLE 0.47/0.5W	FUSIBLE 0.47/0.5W		
VR801	VR. 5.0K	VR. 5.0K	VR. 2.0K	VR. 2.0K
R302	RN. 1 1W	RN. 1 1W	RN. 0.82 1/2W	RN. 0.68 1/2W
R707	RS. 5.6k 1W	RS 5.6k 1W	RS 3.3k 1W	RS. 3.3k 1W
R711	RD. 4.7k 0.5W	RD. 4.7k 0.5W	TIN WIRE	TIN WIRE
R806	RD. 3.0k 1/4W	RD. 3.0k 1/4W	RD. 5.6k 1/4W	RD. 5.6k 1/4W
R407	RS 4.7k 3W	RS 4.7k 3W	RS 10k 3W	RS 15k 3W
R308	RS 33 3W	RS 33 3W	RS 33 3W	RS 10 3W
R301	RN. 3.3k 1/6W	RN. 3k 1/6W	RN. 3.9k 1/6W	RN. 3k 1/6W
R702	RD. 5.1k 1/6W	RD. 8.2k 1/6W	RD. 5.6k 1/6W	RD. 8.2k 1/6W
R704	RD. 4.7k 1/6W	RD. 3k 1/6W	RD. 2k 1/6W	RD. 4.7k 1/6W

CRT
Diagram
"B"

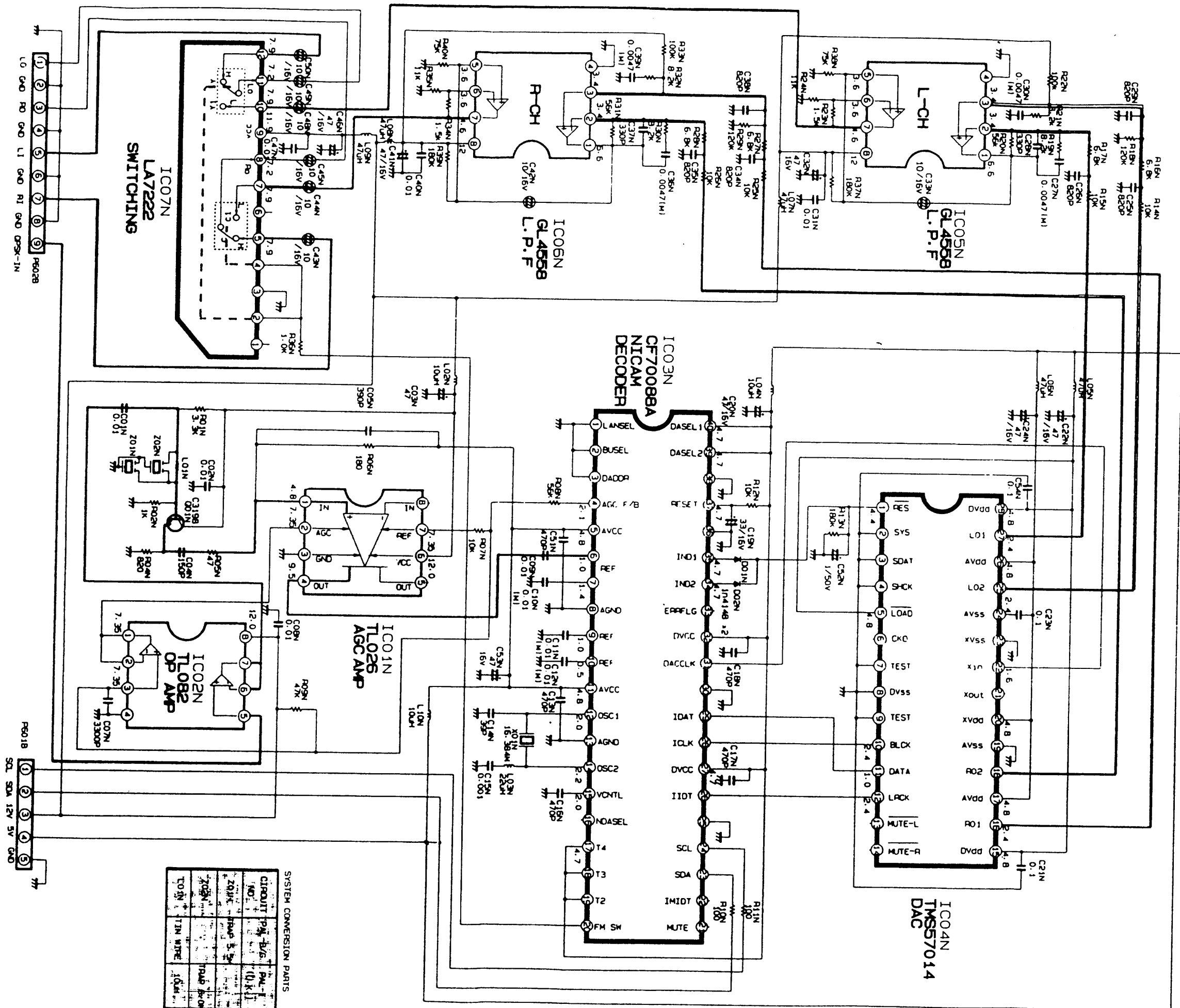


<CONTROL PARTS>
CF-25020 MODEL ONLY

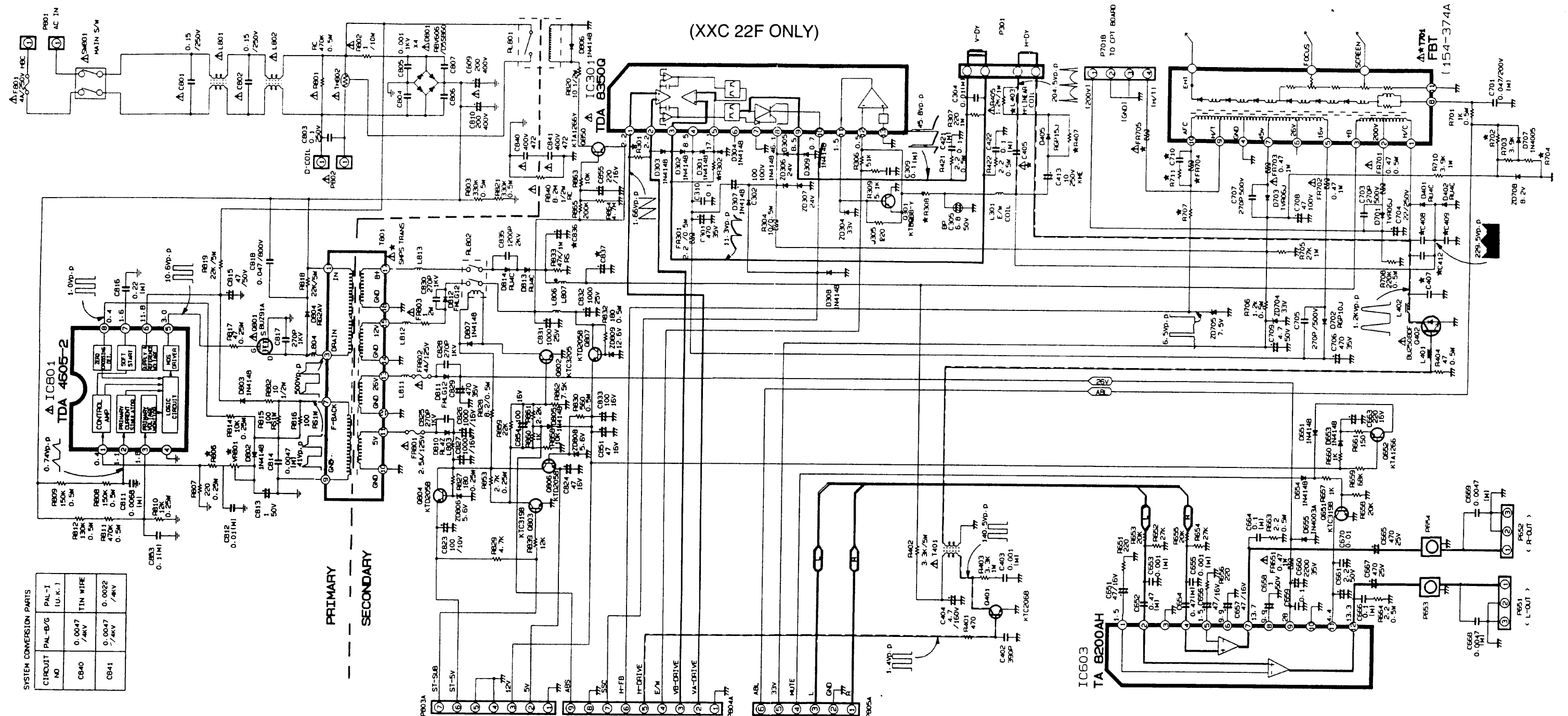
TELETEXT PARTS

SCART 1	IFULL	SCART	W/PAGE
2	191		

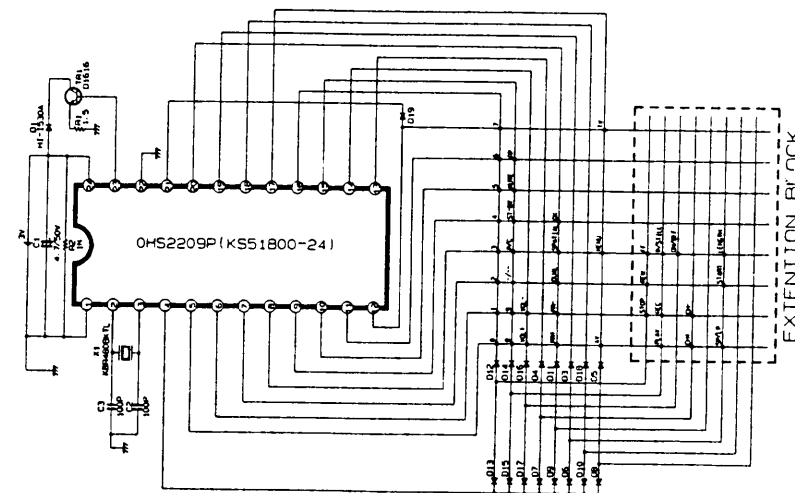
NICAM Diagram



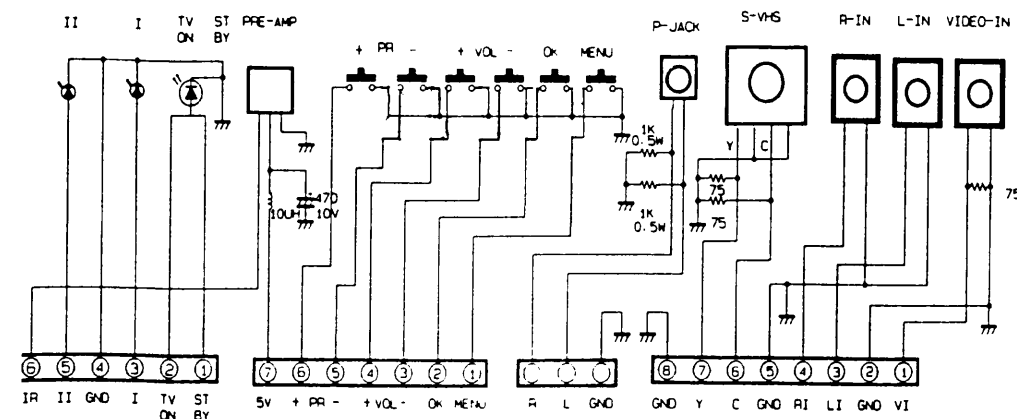
Power Def Sound Diagram "A"

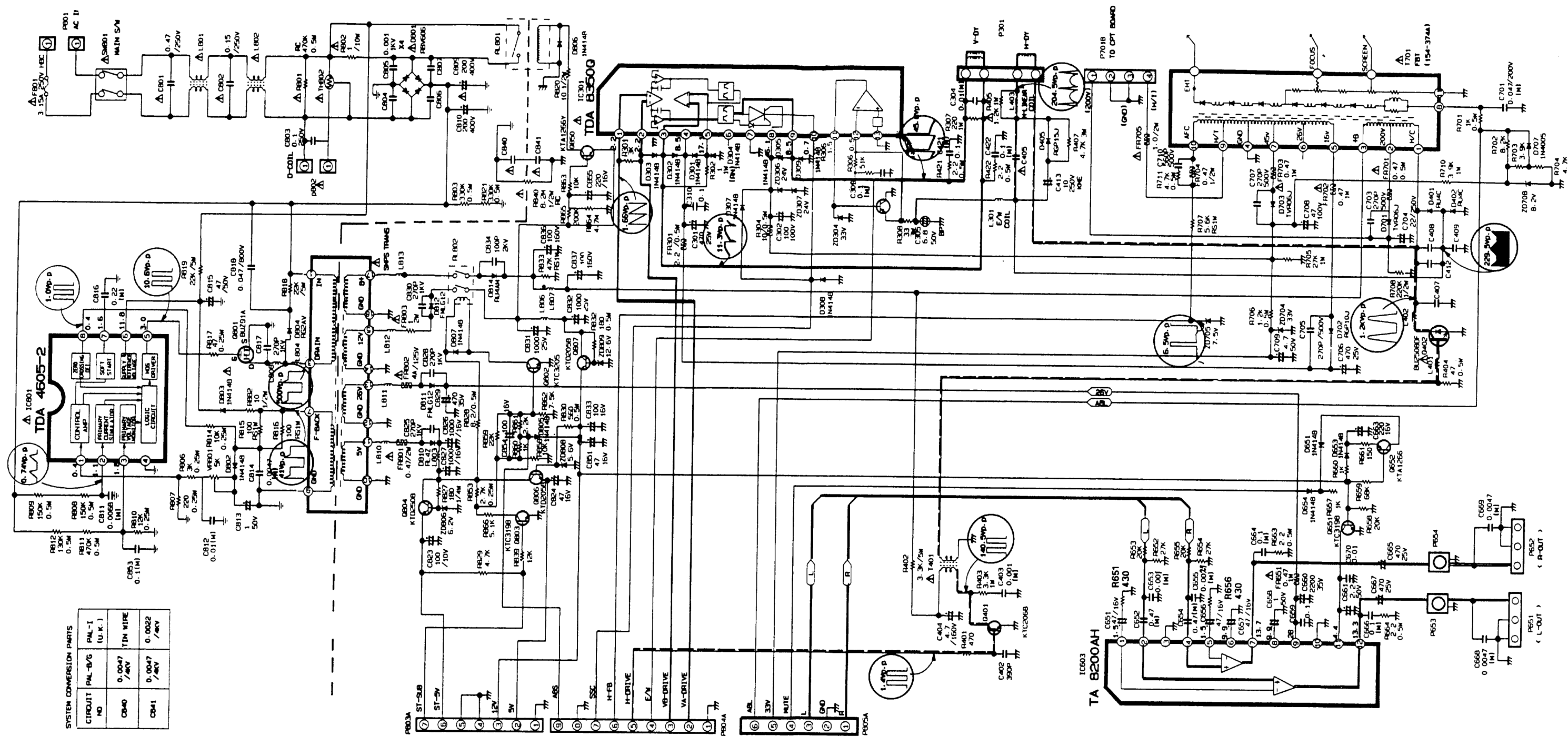


Remote Control Diagram "A"



Control Board Diagram





Power Def
Sound Diagram
"B"

Remote
Control
Diagram "B"

