

## General Information

1994

Covers Model:

Goldstar CI-21C22F

Chassis: PC-42B

CRT: 20" and 21"

Remote Control: 105-214C

Door Flap:

315-629A (20")

315-629B (21")

Main Power Button:

441-403A

Battery Cover: 303-H73B

## Matrix

Item	See Model
Safety Notes	Goldstar CI-14A50
CRT Adjustments	Goldstar CI-14A80F
Remote Control Diagram	Goldstar CF-25C20F

## Specifications

Receiving System:	PAL-I
Intermediate Frequency:	
Vision (Vc):	PAL-B/G: 38.9 MHz PAL-I: 39.5 MHz
Sound (Sc):	PAL-B/G: 33.4 MHz PAL-I: 33.5 MHz
Colour (Cc):	PAL-B/G: 34.47 MHz PAL-I: 35.07 MHz
Tuning Range:	
VHF-Low:	TV: Ch. 2 - 4 CATV: S1' - S3', S1 System: B/G
VHF-High:	TV: Ch. 5 - 12 CATV: S2 - S10, S11 - S20 System: B/G
Hyper:	CATV: S21 - S41 System: B/G
UHF:	TV: Ch. 21 - 69 System: B/G, I
Tuning System:	VS (voltage synthesiser), 60 program memory (80 program option)
Antenna Input Impedance:	VHF/UHF 75 ohm unbalanced
External In/Out:	Phone Jack 1 (A/V input, P253) Phone Jack 2 (Audio output, P251 25" only) Scart 1 (Full Scart, JA201) Scart 2 (Half Scart, JA202) Headphone Jack (P603 20" only)
Video In:	Phone jack 1, Scart 1, Scart 2: 1Vp-p ± 3dB, 75 Ω
Video Out:	Scart 1, Scart 2: 1Vp-p ± 3dB, 75 Ω
Audio In (2 way):	Phone jack 1, Scart 1, Scart 2: 0.5Vrms ± 3dB, over 10k Ω
Audio Out (2 way):	Phone jack 2, Scart 1, Scart 2: 0.5Vrms ± 3dB, below 1k Ω
RGB In:	Scart 1: 0.7Vp-p ± 3dB, 75 Ω
Audio Out (H/P):	H/P jack: 10mW (at load impedance: 16 Ω)
Power Requirements:	240V AC, 50 Hz
Power Consumption:	110w max.

## Specifications Cont'd.

Sound Output: 10W (12W 20") max x 2 way at 50K Hz deviation Dual/Stereo (Nicam/2 carrier)	
OSD (On Screen Display):	Menu method
Voice Coil Impedance:	8 ohm
Functions:	Auto program Fine tuning Auto sleep Sleep timer On time Clock (ACSS: auto clock setting system) Program editing Teletext (TOP/FLOP/LIST) Multi language OSD (English, Dutch, French (20" only)
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 only.

Service  
Adjustments

## Safety Precautions

**Warning:** Before servicing this chassis, read the X-Ray Radiation Precautions, Safety Instructions and Product Safety Notice.

## X-Ray Radiation

- Excessive high voltage can produce potentially high 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 25.5KV (20"), 27.5KV (21"), at zero beam current (minimum brightness) under specified power source. The high voltage must not, under any circumstances, exceed 27.5KV (20"),

## Recommended Safety Parts

Item	Part No.	Description
<b>CI-20C22F</b>		
1	112-C20A	CPT
4	170-851B	Lead Set ASSY, CPT Earth
5	150-438J	Degaussing Coil
S-3	154-106C	FBT
S-8	140-340A	Main Switch
S-17	174-225C	Cord ASSY, Power
C401	181-128H	Capacitor MPP 0.43MF
C402	OCE475BP618	C, Electrolytic 4.7U KME(RG) 160V
C406	181-452M	Capacitor MPP 1.6KV 952H
C851, C852	181-408B	Capacitor 0.15µF (ISKRA 1531)
C861	181-157B	Capacitor D E 2200pF M
IC802	OITO721400A	IC, Toshiba TLP721 (D4-GR) 4D Photo (SEMKO)
L401	150-159F	Coil Linearity
L851	150-F09B	Coil Line Filter (60 - 80MH SQE)
FR701, FR813	ORF0470H609	R, Fusible 0.47 1/2W 5%
FR702	ORF0470J607	R, Fusible 0.47 1W 5%
FR705, FR812	ORF0101H609	R, Fusible 1.0 1/2W 5%
FR811	ORN0270J607	R, Metal Film 0.27 1W 5%
R401	ORS2001K607	R, Metal Film Oxide 2K 2W 5% TA62
R702	ORD5602H609	R, Carbon Film 56K 1/2W 5% M15
R703	ORD6802H609	R, Carbon Film 68K 1/2W 5% TA52
SW851	140-340A	Main Switch S - 40 (310.03.518.13)
TH851	163-012C	Thermistor J502P54E180M220
<b>CI-21C22F</b>		
1	112-A86B	CPT
4	170-851B	Lead Set ASSY, CPT Earth
5	150-438J	Degaussing Coil
9	154-194D	FBT
13	140-340A	Main Switch
C401	181-128C	Capacitor MPP 0.39MF 200V J
C402	OCE475BP618	C, Electrolytic 4.7U KME(RG) 160V
C406	181-131C	Capacitor MPP 1.6KV 862J
C851	181-408B	Capacitor 0.15µF (ISKRA 1531)
C861	181-157B	Capacitor D E 2200pF M
IC802	OITO721400A	IC, Toshiba TLP721 (D4 - GR) 4D Photo (SEMKO)
L401	150-224C	Coil Linearity
L851	150-F09B	Coil Line Filter (60 - 85MH SQE)
FR701, FR813,	ORF0470H609	R, Fusible 0.47 1/2W 5%
FR813	ORF0470J607	R, Fusible 0.47 1W 5%
FR702	ORF0561H609	R, Fusible 5.6 1/2W 5%
FR703	ORF0391J607	Resistor Fusible 3.90 1W 5% TA62

28.5KV (21"). 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 ± 10%, 50 Hz.

## Test Equipment

- DC power supply (24V) x 2.
- VIF sweep generator.
- Alignment scope.
- FM - AM signal generator.
- Pattern generator (PM5518: Philips).

## VCO (Voltage Controlled Oscillator) Adjustment

Test Point: Pin 6 of ZD201.  
Adjust: L201.

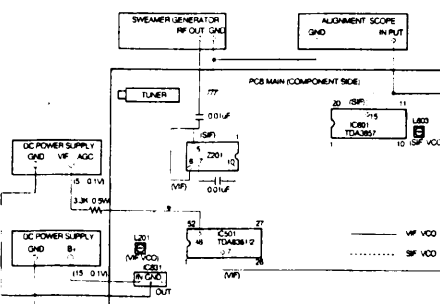
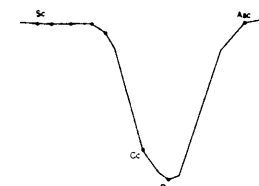


Fig 1.

- Connect the measuring equipment to the TV as shown in fig. 1.
- Adjust L201 so that the level of the picture carrier (PC) marker point may be the lowest position as shown in fig. 2.



	PAL - B/G	PAL - I
SC	33.4	33.5
CC	38.15	38.6
PC	38.9	39.5
ASC	40.4	41.5

PC: Picture Carrier  
SC: Sound Carrier

Fig 2.

**Note:** When performing this adjustment, if there are two adjusted points in L201, select the lower core position.

- Adjust L603 so that the level of picture carrier (PC) marker point may be at the centre position as shown in fig. 3.

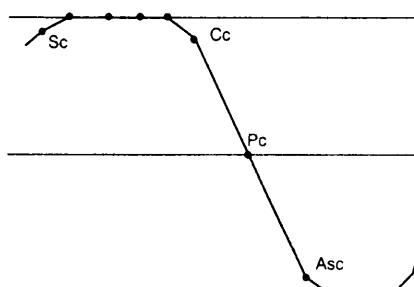


Fig 3.

**Note:** When performing this adjustment, if there are two adjusted points in L603, select the lower core position.

## RF AGC (Auto Gain Control) Adjustment

Test Point: J36 or observing display.  
Adjust: VR201.

The RF AGC control (VR201) was aligned at the time of manufacture for optimum performance over a wide range of conditions. Re-adjustment of VR201 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.

## Procedure

- Connect a DC volt meter to J36.
- Adjust VR201 so that the DC volt meter may indicate 6.0 ± 0.1V DC.

TUNER P/N	AGC Voltage
113-238B	5.8V ± 0.1
113-238C	6.0V ± 0.1
113-238E	6.0V ± 0.1

## Horizontal Centre Adjustment

Test Point: Observing Display.  
Adjust: VR401.

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

## Vertical Size, Centre Adjustment

Test Point: Observing Display.  
Adjust: VR301 (vertical size),  
SW301 (vertical centre).

- Tune the TV set to receive digital test pattern.
- Set colour and brightness to 50% and contrast to 75%.
- Adjust the vertical size control (VR301) for approx. 1/8 inch overscan at top and bottom of display.
- Adjust the vertical centre control (SW301) for obtaining geometric centre of valuable display vertically.

## Focus Adjustment

Test Point: Observing display.  
Adjust: Focus control of FBT.

- Set the colour to minimum and brightness and contrast to maximum.
- Tune the TV set into an inactive channel (snow condition).
- Adjust the focus for best overall focus.

## Screen and White Balance (Colour Temperature) Adjustment

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

- Tune the TV to a local TV channel and set the colour, bright control to minimum and the contrast to maximum.
- Adjust screen VR of FBT that 100% black area of the grey scale is the same brightness as 80% black area.
- By using colour analyser (white balance checker) adjust X = 281 ± 8, Y = 288 ± 8, it means colour temperature is 10000° K at low light (4.5ft. L) at high light (over 45ft. L).

## Recommended Safety Parts Cont'd.

Item	Part No.	Description
FR705, FR812	ORF0101H609	R, Fusible 1.0 1/2W 5%
FR811	ORN0270J607	Resistor Fix Metal Film 0.27 1W 5% TA62
FR814	131-096G	Fuse Micro 125V 0.7
F851	131-098B	Fuse 4A 250V HBC Time Delay 5 X 20
R401	ORS2001K607	Resistor Fix Metal Film Oxide 2K 2W 5% TA62
R702	ORD5602H609	Resistor Fixed Carbon Film 56K 1/2W 5% M15
R703	ORD6802H609	Resistor Fixed Carbon Film 68K 1/2W 5% TA52
TH851	163-012C	Thermistor J502P54E180M220

Service Adjustments Cont'd.

SIF (6.0 MHz) Detection Adjustment (PAL-I model only)

Test Point: Pin 15 of IC601.  
Adjust: L601.

1: Connect the measuring equipment to the TV as shown in fig. 4.

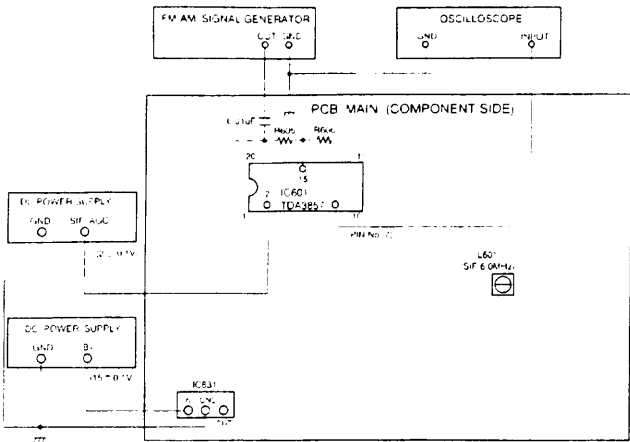


Fig 4.

Note:

- 1: Set the output level of FM - AM signal generator to carrier frequency 6 MHz, deviation frequency 27KHz at AF 1KHz and 100dBmV.
- 2: Set the SEC/DIV on oscilloscope to 0.5ms/DIV and the Volt/DIV to 0.2V/DIV.
- 2: Adjust L601 for the level of sine-waveform to be maximum as shown in fig. 5.

Note: When performing this adjustment, if there are 2 adjusted points in L601, select the lower core position.

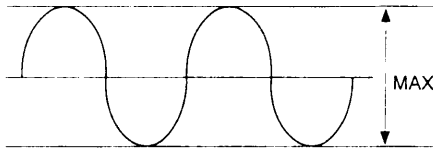
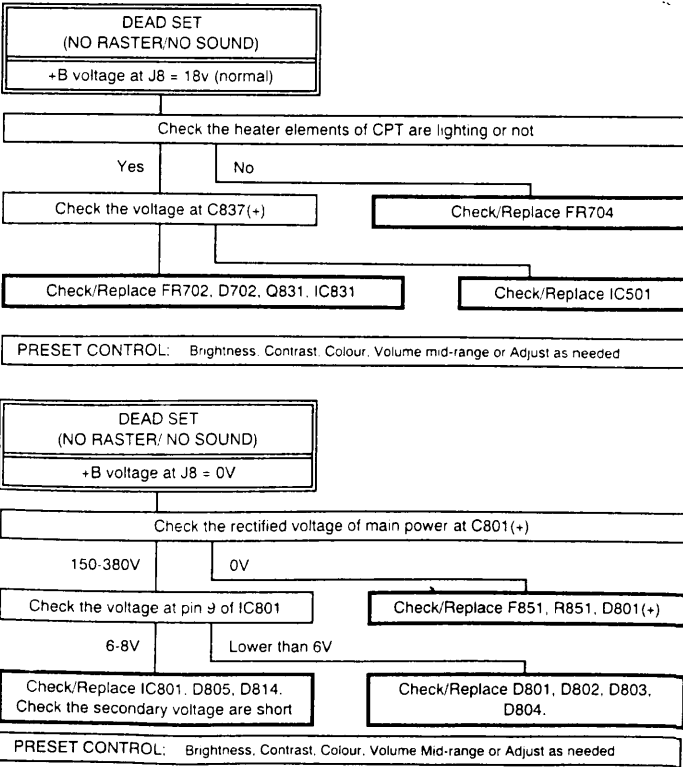
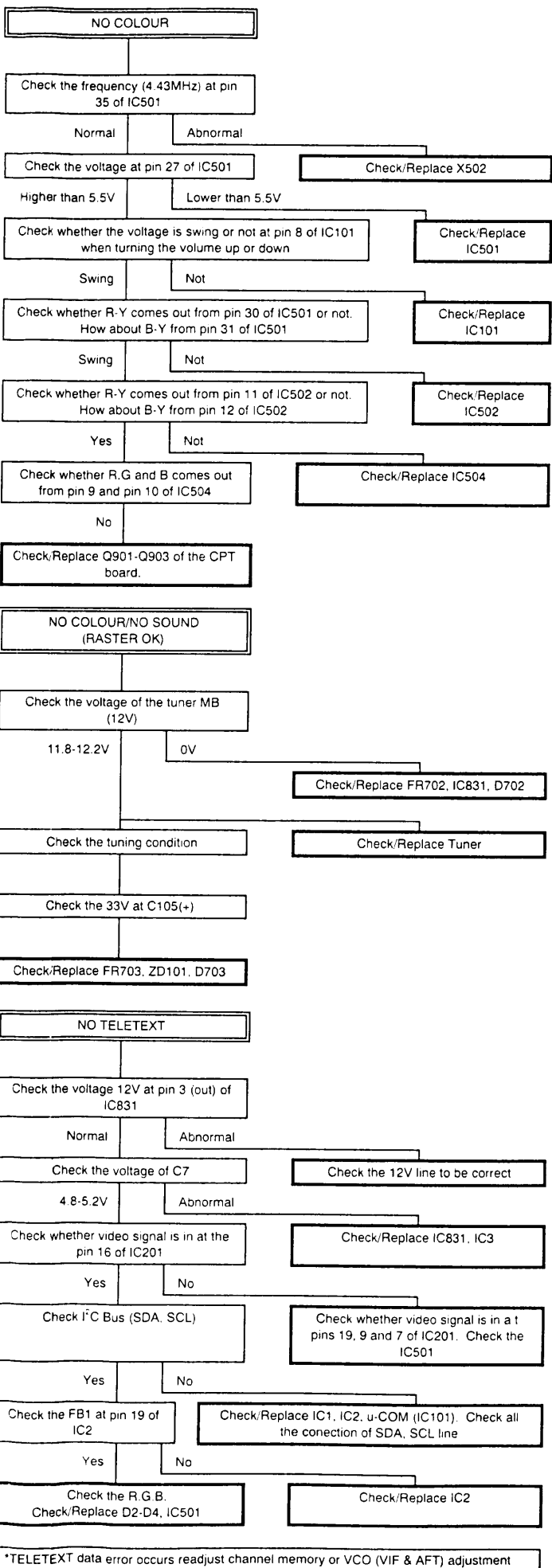
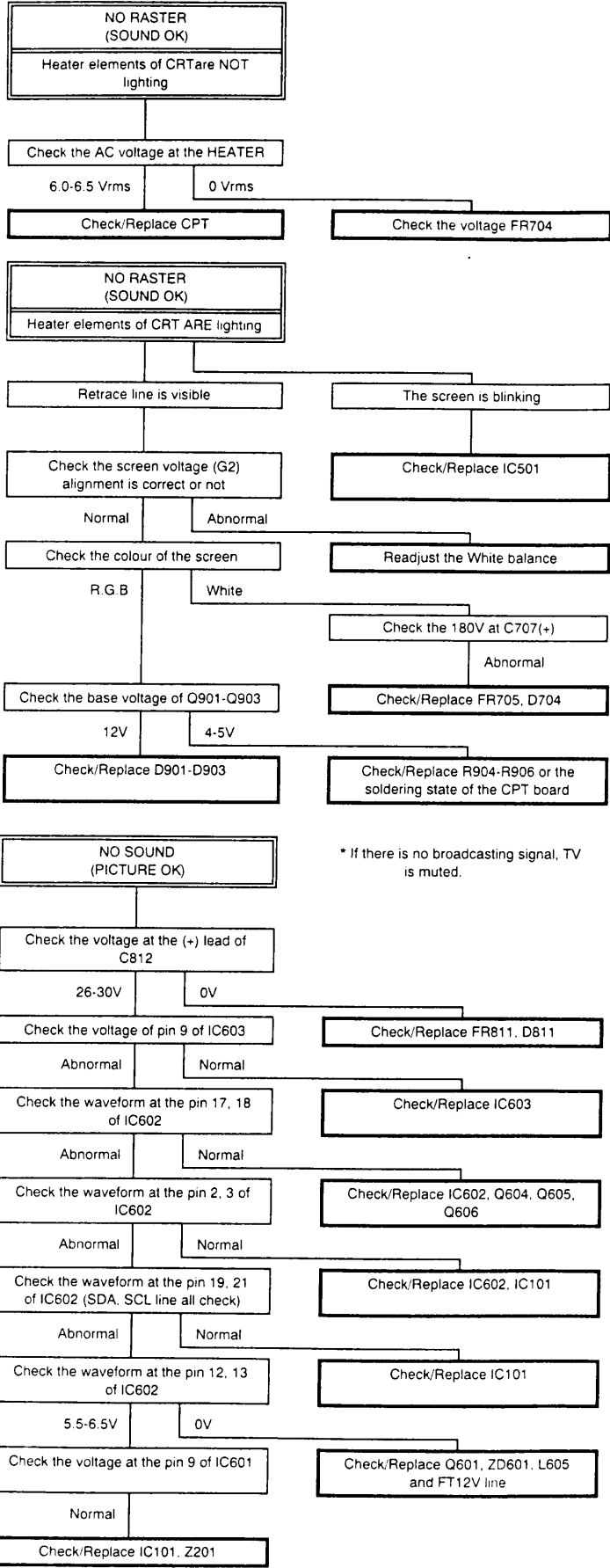


Fig 5.



Trouble Shooting Guides



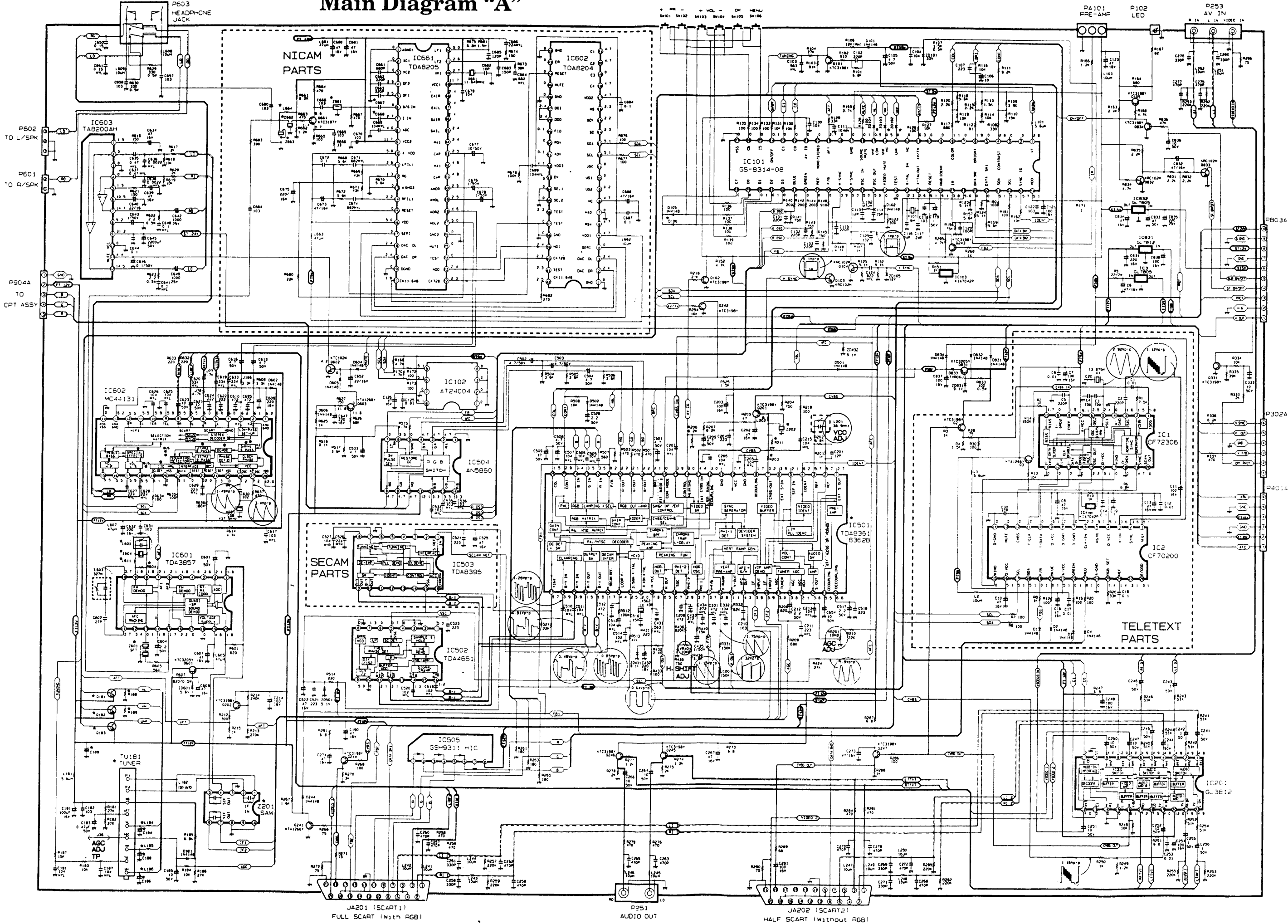
System Conversion parts

Circuit No.	PAL - I	PAL - B/G	Circuit No.	PAL - I	PAL - B/G
R188 - 189	RD 1/6W	C657	TIN WIRE	CAP AXIAL 102	TIN WIRE
C189	CE 16V 47uF	C668	CAP AXIAL 102	TIN WIRE	TIN WIRE
C184 - 186 - 188	CE 50V 4.7uF	Z601	SFT 6.0M	SFT 5.5M	SFT 5.5M
L184 - 185 - 186	COIL 100uH	Z661	B.P.F. - 6.552M	B.P.F. 5.85M	B.P.F. 5.85M
ZD102 - 103 - 104	ZENER 7.5V	Z662	TRAP 6.0MHz	TRAP 5.5MHz	TRAP 5.5MHz
C181 - 182 - 183	TR. DTA114ES	Z663	COIL 15uH	TIN WIRE	TIN WIRE
D106	DIODE IN4148	L654	COIL 15uH	TIN WIRE	TIN WIRE
TU181	113 - 238E	J173	4KV 0.0022	4KV 0.0047	4KV 0.0047
Z201	SAW FILTER DFW3252	C861	4KV 0.0022	4KV 0.0047	4KV 0.0047
Z202	SAW FILTER DFW3252	C862	TIN WIRE	INDUCTOR 18uH	INDUCTOR 18uH
L202	COIL 3.3uH	C680	6.0M ADJ. COIL	INDUCTOR 18uH	INDUCTOR 18uH
R203	RD 1/6W 1K	L601	6.0M ADJ. COIL	INDUCTOR 18uH	INDUCTOR 18uH
R604	RD 1/6W 470	L611	6.0M ADJ. COIL	INDUCTOR 18uH	INDUCTOR 18uH
J200	RD 1/6W 10K	Z604	TIN WIRE	INDUCTOR 18uH	INDUCTOR 18uH
R211	RD 1/6W 3.3K	J22 23	TIN WIRE	INDUCTOR 18uH	INDUCTOR 18uH
L853	FERRITE CORE	L852	TIN WIRE	INDUCTOR 18uH	INDUCTOR 18uH
J18	TIN WIRE		LINE FILTER	INDUCTOR 18uH	INDUCTOR 18uH

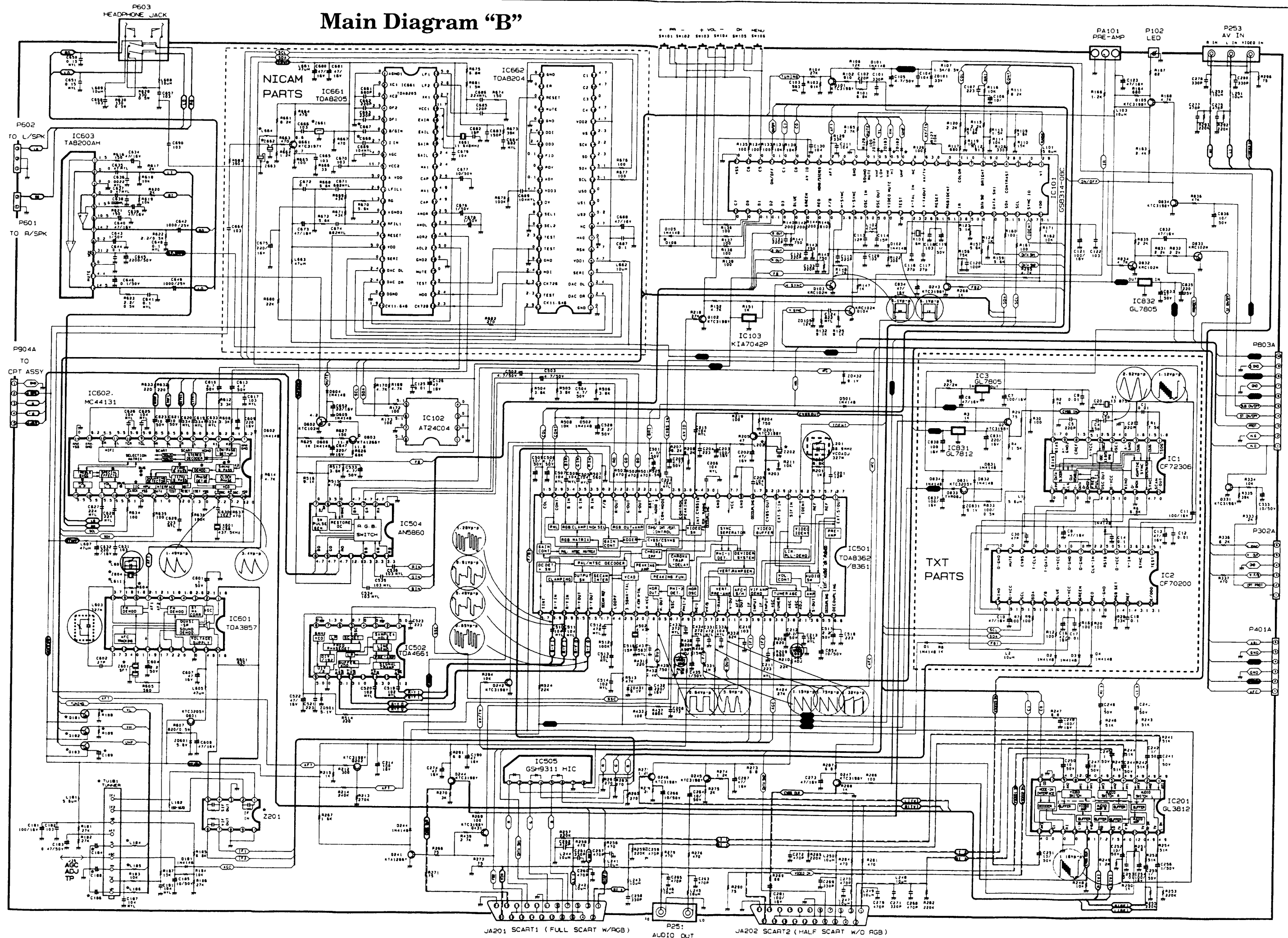
CPT Conversion table

Circuit No.	Philips CPT (21 inch)	Goldstar CPT (21 inch)
C401	CAP. MPP 200V 0.39uF	CAP. MPP 200V 0.43uF
FR704	FUSING 2W 3.9	FUSING 2W 1.6
R703	RD 1/2W 56K	RD 1/2W 47K
R305	RD 1/6W 470	RD 1/6W 470
R814	RD 1/6W 3.3K	RD 1/6W 3.3K
L401	150-224C	150-224C
T701	154-1940	154-1940
C405	CAP. MPP 1.6kV 0.0086	CAP. MPP 1.6kV 0.0086
C821	CAP. MYR 50V 0.1uF	CAP. MYR 50V 0.1uF
	Philips CPT (20 inch)	Goldstar CPT (20 inch)
C401	CAP. MPP 200V 0.43uF	CAP. MPP 200V 0.36uF
FR704	FUSING 2W 1.0	FUSING 2W 0.68
R703	RD 1/2W 56K	RD 1/2W 47K
R305	RD 1/6W 750	RD 1/6W 750
R814	RD 1/6W 1K	RD 1/6W 1K
L401	150-159A	150-224C
T701	154-106C	154-106C
C405	CAP. MPP 1.6kV 0.01uF	CAP. MPP 1.6kV 0.0082uF
C821		

Main Diagram "A"

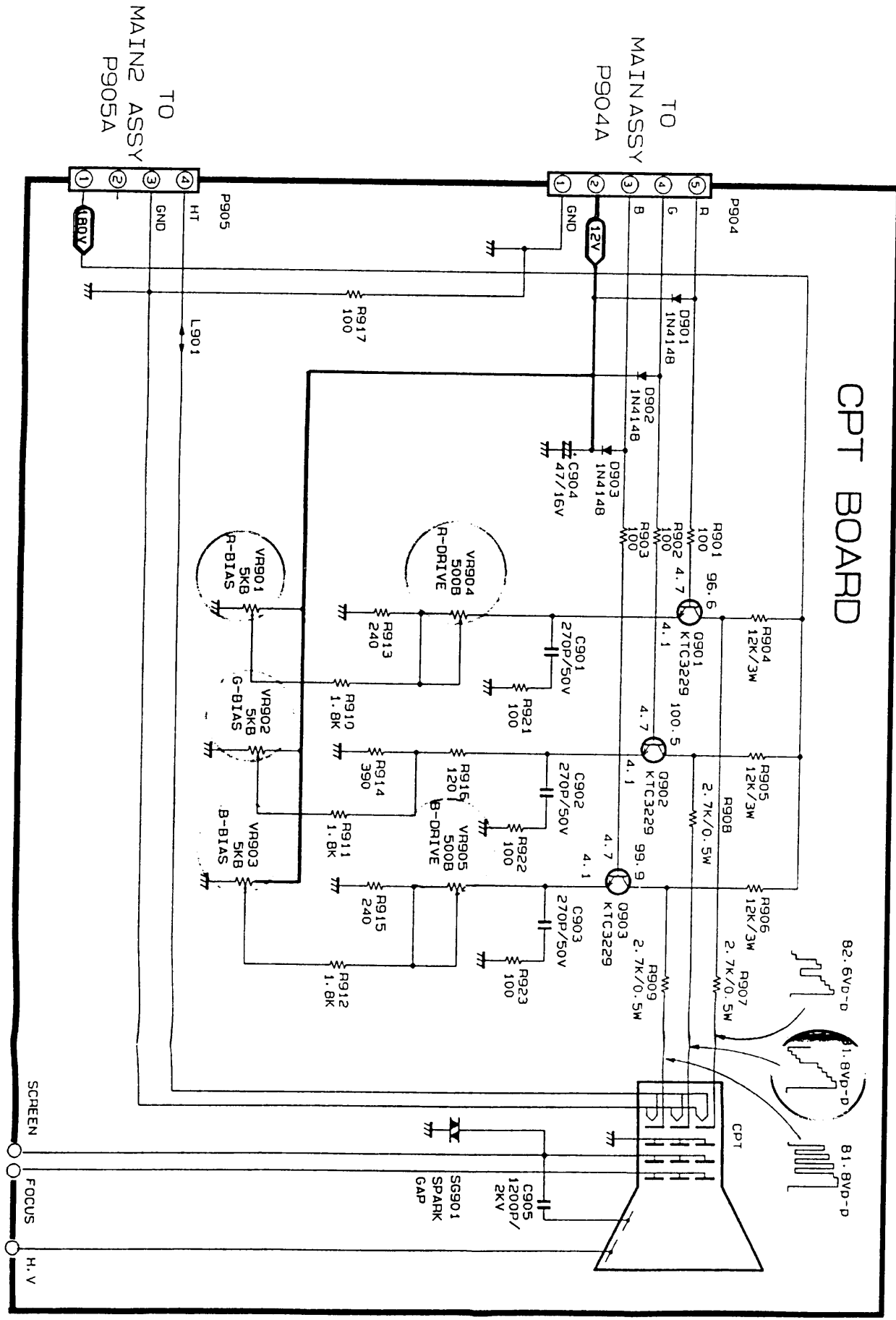


## Main Diagram "B"





CRT Diagram



Main 2 Diagram

