GOLDSTAR PC-53A Chassis

General Information

1995 (1996 A86 Models)
Chassis: PC-53A
CRT's:
A34EAC01X06
A48ECR11X63
A51EAL55*02
Remote Control:
105-210M (Remote)
105-224V (Text)
Main Power Button:
441-365B (20A96)
441-494A (14A96)
441-320B (20A86)
441-347A (21A86)
441-542A (14E20)
441-540A (20E20)
441-544A (21E20)
Battery Cover:
303-H40A (Remote)
303-H73A (Text)

Matrix

Item	See Model
Safety Notes	Goldstar 14A50
X-Ray Precautions	Goldstar 29C42F
CRT Adjustments	Goldstar 14A80F
Remote Control Diagram	Goldstar 14A80F

Specifications

Video Input System:	PAL-I
Power Requirements:	240V AC, 50 Hz
Power Consumption:	14" (70W), 21" (85W), at stand-by: 1w (3.0W max)
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 System:	VS (voltage synthesiser), 80 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
Antenna Input Impedance: unbalanced	VHF/UHF 75 ohm
Voice Coil Impedance:	8 ohm
OSD (On Screen Display):	Menu method
Sound Output:	(at 50K Hz deviation) 14" - 21": 2.0W typ - 4W max
External (through Euro-Socket):	
Audio In:	0.5Vrms ± 3dB, over 10K ohm

Specifications Cont'd.

Audio Out:	0.5Vrms ± 3dB, below 1K ohm
Video In/out:	1 Vp-p ± 3dB, 75 ohm
RGB In:	0.7 Vp-p ± 3dB 10mW (at load impedance: 16 Ω
Local Buttons:	Menu/OK/ Volume up (+)/Volume down (-)/ Program up (+)/Program down (-)
Functions:	Auto program Manual program Sleep timer ACMS (auto channel memory system) + *a*(Alpha) Channel labelling and PR list Teletext (TOP/FLOP/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 only.

Recommended Safety Parts

Item	Part No.	Description
200-01 (14")	112-C14F	CPT A34EAC01X06 (Philips)
200-01 (20")	112-C20A	CPT A48ECR11X63 (S/S)
200-01 (21"	112-C21C	CPT A51EAL55*02 (Philips)
200-05 (14 A86/X)	170-A01A	Lead Set CPT Earth
200-05 (20 A86/X)	170-A01D	Lead Set CPT Earth
200-05 (21 A86/X)	170-A01C	Lead Set CPT Earth
200-05 (14 E20/F)	170-799A	Lead Set CPT Earth (14")
200-05 (20 E20/F)	170-799C	Lead Set CPT Earth (19")
200-05 (21 E20/F	170-799C	Lead Set CPT Earth (19")
(20 A96	170-799C	Lead Set CPT Earth (19")
200-06 (14")	150-D02B	Degaussing Coil, CU
200-06 (20")	150-D02M	Degaussing Coil, CU
200-06 (21")	150-D02N	Degaussing Coil, CU
300-01	140-343B	Switch 70063-221 (TV5/120A/250V)
300-09 (14")	154-064P	FBT FCB2-14SP3
300-09 (20")	154-106C	FBT FCR1-19SP3
300-09 (21"_	154-194D	FBT FCJ1-21SP4
300-15 (14")	381-100C	Socket CPT PCS-625 (mini)
300-15 (20")	381-226D	Socket CPT PCS628-01S/less bulk (N05)
300-15 (21")	381-226D	Socket CPT PCS628-01S/less bulk (N05)
301	174-225J	Cord ASSY, Power for UK (LGENE)
301 (20 A96 & 20 E20 only)	174-225C	Cord ASSY, Power UK22
C811, C812	181-120E	Capacitor ACT 4KV E 222M FL10
C852, C853	181-017C	Capacitor MPP (Box) AC 250V 0.47μF K
DB801	0DD260000BD	Diode Bridge D2SBA60 Shindenken
F823	131-096A	Fuse Micro 125V 1.0A
(F881)	131-098B	Fuse 4A 250V HBC Time Delay 5 X 20
FR401	180-834A	Resistor FNW 1W 0.47 ohm J TP
FR402	0RF0470J607	R, Fusible 0.47 1W 5%
FR403	0RF0102H609	R, Fusible 10 1/2W 5%
FR404 (14")	180-D02Q	R, RNF RND(S) CR 2W 10 J
FR404 (20")	180-D02J	R, RNF RND(S) CR 2W 1.6 J
FR404 (21")	0RF0561J607	R, RNF RND(S) CR 5.6 1W 5%
FR405	0RF0101H609	R, Fusible 1.0 1/2W 5%
FR406 (14A86/X)	0RF0681K666	R, Fusible 6.8 2W 5%
FR406 (14E20/F)	0RF0561K607	R, Fusible 5.6 2W 5% TA62

Recommended Safety Parts Cont'd.

Item	Part No.	Description
FR406 (20")	180-D02J	R, RNF RND(S) CR 2W 1.6 J
FR406 (21")	0RF0911J607	R, RNF RND(S) CR 9.1 1W 5%
FR601	0RF0561K607	Resistor, Fusible 5.60 2W 5% TA62
IC801	0ISK570700A	IC Sanken STR/S5707 (LF. 953) 9P SMPS-CNTR
IC802	01TO721400A	IC Toshiba TLP721 (D4-GR) 4D Photo (SEMKO)
L402 (14")	150-L02B	Coil H-Linearity 165UH
L402 (20")	150-L01Z	Coil H-Linearity 97UH
L402 (21")	150-L02C	Coil H-Linearity 170UH
L851	150-F06J	Coil Line Filter SQE2930 18MH
Q402	0TR249900AA	Transistor KTD2499 TO-3P(H)IS Toshiba
R809	180-C01C	Resistor RC 1/2W 8.2M K TA52
SG901	185-004A	Spark Gap AG20PT 152F-L3N/S-23
T401	154-106C	FBT ECR1-19SP3
T402	151-C02B	Transformer H-Drive, EI-19, Bulk
T801 (14")	151-B06J	Transformer SMPS Foil EER4215 STR-S5707 N
T801 (20")	151-B06J	Transformer SMPS Foil EER4215 STR-S5707 N
T801 (21")	151-B06M	Transformer SMPS Foil EER4215 STR-5707
TH851 (20A96)	163-012C	Thermistor J502P54E180M290
TH851 (14")	163-054A	Thermistor J502P53D140M290S
TH851 (20")	163-054A	Thermistor J502P53D140M290S
TH851 (21")	163-012C	Thermistor J502P54E180M290

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. But this is changeable in view of productivity.
5: Unless otherwise noted, set the line voltage to 230V ± 20%, 50/60 Hz.

Test Equipment

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

VCO (Voltage Controlled Oscillator) Adjustment

Preparation

1: Connect the measuring equipment to the TV as shown in fig. 1.
2: Set RF output level of sweep S. G. (signal generator) to 90dBmV.
3: Set alignment scope, volts/DIV to 100mV, AC/DC switch AC, Line/EXT switch to EXT.

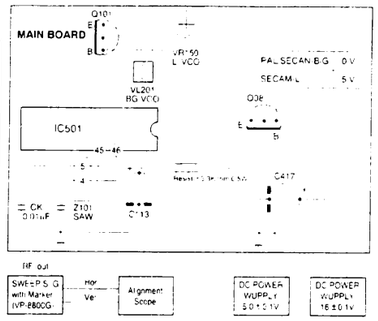

Fig 1.

VCO Adjustment for B/G System

Test Point: Base of Q101.
Adjust: VL201.

1: Turn on DC power supplies.
2: Adjust VCO adjust coil (VL201) so that the level of the picture carrier (PC) may be at the lowest position as shown in fig. 2.

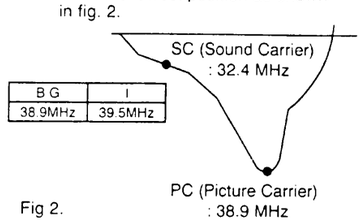

Fig 2.

Note: When performing this adjustment, if there are 2 adjusted points in VL201, select the lower core position.

VCO Adjustment for Secam-L' System

Test Point: Base of Q101.
Adjust: VR150.

1: Turn on Dc power supplies.
2: Apply 5V DC to base of Q08.
3: Adjust VCO adjust volume (VR150) so that the level of picture carrier may be at the highest position as shown in fig. 3.

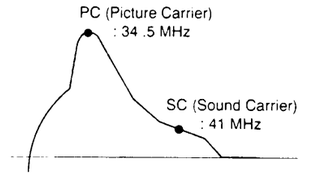

Fig 3.

RF AGC (Auto Gain Control) Adjustment

Test Point: Cathode of D181(J56) 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:

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 over load capabilities resulting in colour beats or adjacent channel reference.
For best results, adjust VR101 control while performing on all other local channels, or the voltage of J56 will be 6.5 ± 0.1V DC in RF level of 60 μ 1dBμV.

System:	PAL/Secam-B, G
AGC Voltage:	6.5 ± 0.1VDC
Band & Channel:	VHF-H-(05 Ch)
Remark:	RF 60 ± 1dBμV
System:	PAL-I
AGC Voltage:	6.0 ± 0.1VDC
Band & Channel:	UHF (41 Ch)
Remark:	RF 60 ± 1dBμV

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, Centre Adjustment

Test Point: Observing Display.
Adjust: VR302 (vertical size), SW301 (vertical centre).

1: Tune the TV set to receive digital test pattern.
2: Set colour and brightness to 50% and contrast to 75% (or PP condition).
3: Adjust the vertical size control (VR302) so that the circle of a digital test pattern may be located within the effective screen of the CPT.
4: Adjust the vertical centre control (SW301) for obtaining geometric centre of valuable display vertically.

Focus Adjustment

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

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

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

Trouble Shooting Guides

DEAD SET
(NO RASTER/NO SOUND)
+B voltage at J105 = 112V (normal)

Check heater elements of CRT are lighting or not
- Yes → Check the voltage at C415(+)
  - 12V → Check the voltage of pin 10 of IC501
    - 8V → Check/Replace IC501
    - 0V → Check/Replace IC402
  - 0V → Check/Replace FR402, D402, R432, IC401
- No → Check/Replace FR404/FR406

PRESET CONTROL: Brightness - Fully up, Contrast - Fully up, Colour - Fully up, Volume - Mid-range or adjust as needed.

DEAD SET
(NO RASTER/NO SOUND)
+B voltage at J105 = 0V

Check the rectified voltage of main power at C805(+)
- 250~380V → Check the voltage of pin 9 of IC801
  - Less than 6V → Check/Replace Q801, D801, 802, 804, D805, ZD801
  - 6-8V → Check/Replace IC01, D803
- 0V → Check/Replace F881, D8801, R851

PRESET CONTROL: Brightness - Fully up, Contrast - Fully up, Colour - Fully up, Volume - Mid-range or adjust as needed.

NO RASTER
(SOUND OK)
Heater elements of CRT are NOT lighting

Check the AC voltage at the Heater on CPT Board
- 6.0~6.5 Vrms → Check/Replace FR404, FR406
- 0 Vrms → Check/Replace CPT → Check/Replace FR404, FR406

NO RASTER
(SOUND OK)
Heater elements of CRT ARE lighting

Retrace line is visible
- Normal → Check the screen colour
  - R/G/B → Check the base voltages of Q901-Q903
    - 12V → Check/Replace D901-D903
    - 4-5V → Check/Replace R904-R906 or soldering condition on CPT board
  - White → Check the 180V line at C424 (+)
    - Abnormal → Check/Replace FR405, D405
- Abnormal → Realign White balance

The screen is blinking → Check/Replace IC501

Check the screen voltage (G2) alignment (+) is correct or not.
- Normal → Check the screen colour
- Abnormal → Realign White balance

NO SOUND
(PICTURE OK)

Check the voltage of SMPS 25V at pin 5 of IC601 (AM SOUND: FRANCE SOUND)
- Normal (20-25V) → Check the voltage of pin 16 of IC501
  - 7-8V → Check/Replace Q05 (A/V switch)
    - Normal → Check the voltage swing of pin 8 of IC603
      - 2-3V → Check the voltage swing of pin 6 of IC501
        - 3.5-4.5V → Check the voltage swing of pin 4 of IC601
          - 11-12V → Check whether the voltage is swing or not at the pin 31 of IC01 according to changing volume up/down
            - Abnormal → Check/Replace IC01
          - 0V → Check/Replace IC601
        - 0V → Check/Replace IC501
      - 0V → Check/Replace IC603
    - Abnormal → Check/Replace IC01
  - 0V → Check the soldering condition around IC601
- Abnormal → Check/Replace FR824, D824, FR601

NO SOUND
(PICTURE OK)

Check the voltage of SMPS 25V at pin 5 of IC601 FM SOUND: EUROPE SOUND
- Normal (20-25V) → Check the voltage of pin 16 of IC501
  - 7-8V → Check/Replace Q05 (A/V switch)
    - Normal → Check the voltage of pin 50 of IC501
      - 3-4V → Check the voltage/swing of pin 4 of IC601
        - 11-12V → Check whether the voltage is swing or not at the pin 31 of IC01 according to changing volume
          - Abnormal → Check/Replace IC01
        - 0V → Check/Replace IC601
      - 0V → Check/Replace IC501
    - Abnormal → Check/Replace IC01
  - 0V → Check the soldering condition around IC601
- Abnormal → Check/Replace FR824, D824, FR601

NO PICTURE/NO SOUND
(RASTER OK)

Check the voltage of TUNER MB (12V)
- 11.8-12.2V → Check the tuning condition
  - Check the 33V at C418(+) → Check/Replace FR403, ZD401, D403, 404
  - Check/Replace TUNER
- 0V → Check/Replace FR402, D402, IC401

NO COLOUR

Check the frequency (4.43MHz) at pin 35 of IC501
- Normal → Check the voltage of pin 27 of IC501
  - Over 5.5V → Check whether the voltage is swing or not at the pin 30 of IC01 according to changing colour up/down
    - Swing → Check whether R-Y and B-Y are out at pin 30 and pin 31 of IC501
      - Yes → Check whether R-Y and B-Y are out at pin 9 and pin 10 of IC503
        - Yes → Check whether R-Y and B-Y are out at pin 11 and pin 12 of IC502
          - Yes → Check whether R/G/B is out at pin 20, pin 19 and pin 18 of IC501
            - Yes → Check whether R/G/B is out at pin 8, 9 and pin 10 of IC504
              - No → Check/Replace IC504
            - No → Check/Replace ic501
          - No → Check/Replace IC503
        - No → Check/Replace IC501
      - Not → Check/Replace IC01
    - Below 5V → Check/Replace IC501
- Abnormal → Check/Replace X501

NO TELETEXT

Check the voltage of C710 (+)
- 5V → Check the voltage/swing of pin 1 of IC701
  - Normal → Check the voltage/swing of pin 8, 9 and 10 of IC701
    - No → Check/Replace IC701
  - Abnormal → Check/Replace Q701
- 0V → Check/Replace IC702

Service Adjustments Cont'd.

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.

1: Tune the TV to receive digital pattern.
2: Set all controls (VR901 - VR905) on CPT board to geometric centre position.
3: Set colour and brightness to minimum and contrast to maximum.
4: After change from TV mode to AV, adjust and set the screen volume of FBT at just cut-off position.
5: By using colour analyser (white balance checker) adjust: X = 295 ± 8, Y = 305 ± 8, it means colour temperature is 8000° K at low light (4.5ft. L) at high light (over 45ft. L).

Table of system conversion

Circuit No.	SYSTEM			Remark
	PAL/SECAM - B/G	PAL/SECAM - B/G +LL'	PAL - I	
R232	47K	3.9K	47K	RH 1/10W
R203	6.8K	3.9K	6.8K	RD 1/6W
C185	4.7uF	47uF	4.7uF	CE 50V
C528	100uF	47uF	100uF	CE 16V
Z101	166-250B	166-250B	166-AO1N	SAW FILTER
IC501	TDA8362B	TDA8362	TDA8362B	IC
T181	113-238K	113-238K	13-238L	TUNER
L100	150-C01F	150-C01C	150-C01G	CHOKE COIL
Z104	166-802C	166-802C	166-802D	FILTER
Z102	166-C02C	166-C02C	166-C02D	FILTER
TIN WIRE	J53. 54. 71 73. 87	J30. 33. 34 43. 53. 54	J53. 54. 87 125	
ZD 01/02/03	ZENER DIODE 7.5V			PAL/SECAM - B/G & B/G + LL' COMMON
C 184/186	CE 4.7uF 50V			
Q 21/22/23	TR DTA114ES			
R157	RH 33. 1/10W			
L151	COIL 0.47uH			
Z181			166-C06B	FILTER
Q 07			KRC102M	TR

Table of inch conversion

Circuit No.	INCH			REMARK
	14'	20'	21'	
L402	150-L028	150-L01Z	150-L02C	COIL
L901	TIN WIRE	150-C02A	150-C02B	COIL
T801	151-806J	151-806J	151-806M	TRANS
T401	154-064P	154-106C	154-194D	FBT
C423	0.5uF	0.43uF	0.39uF	MPP 200V
C425	0.006uF	0.01uF	0.0086uF	MPP 1600V
P901	381-100C	381-226D	381-226D	SOCKET
C901	270	270	220	CN 50V
C902	270	220	150	CN 50V
C903	270	220	220	CN 50V
R320	560	560	430	RD 1/6W
R34	2.7K	1.5K	1.5K	RD 1/6W
R35	12K	22K	27K	RD 1/6W
R322	2.2	2.2	1.5	RD 1/2W
R812	15	15	9.1	RD 1/2W
FR404	10	1.6	5.6	FR 2W
FR406	5.8	1.6	9.1	FR 2W
R437	75K	82K	82K	RD 1/2W
R813	TIN WIRE	TIN WIRE	9.1	RD 1/2W
R910	1.8K	1.8K	820	RD 1/6W
R913	390	330	430	RD 1/6W
R915	300	300	330	RD 1/6W
R916	180	150	220	RD 1/6W
R606 BG/I	56K	75K	75K	RD 1/6W
R606 LL'	47K	56K	56K	
TH851	163-054A	163-054A	163-021C	RELAY
R45	2.2K	2.2K	6.2K	RD 1/6W
R425	1.2K	5.6K	5.6K	RS 1W

Table of text conversion

	WITH TXT MODEL	WITHOUT TXT MODEL
IC702	KIA 7805 PI	KIA 78L05 BP
L701	10uH COIL	TIN WIRE
R106	RH 180 1/10W	RH 12 1/10W
L702	10 uH COIL	
R702	RD 75 1/6W	
R703	RH 1.5K 1/10W	
R314	RD 10K 1/6W	
C120	CN 180P	
Q701	KTC 3198-Y	
Q302	KTC 3198-Y	

U-COM option

SCART	SYSTEM			REMARK
	B/G	L/L'	I	
2-SCART	-	D01	D02	D01, D02, D03 1N4148
1-SCART	D03	D01/ D03	D02/ D03	

Main & CRT Base Diagram