TOSHIBA 2545

General Information

Also Covers
2180 TB
C80 Chassis

Recommended Safety Parts

Item	Part No.	Description
A401	23425938	Back Cover
C423	24095755	PF, 0.47µF, 200V
C440	24082349	PF, 7000pF, ±3%, 1500V
C463	24212222	CD, 2200pF, ±10%
C801	24082318	PF, 0.1µF, ±20%, AC250V
C802	24094656	CD, 2200pF, ±20%, AC400V
C803	24094656	CD, 2200pF, ±20%, AC400V
C804	24082318	PF, 0.1µF, ±20%, AC250V
R327	24339569	OMF, 5.6 ohm, 2W
R446	24533151	FR, 150 ohm, 2W
R448	24338338	OMF, 0.33 ohm, 1W
R801	24004914	Metal-Glazed Resistor, 5.6M ohm, 1/2W
R878	24531560	FR, 56 ohm, 1/2W
R884	24531120	FR, 12 ohm, 1/2W
R890	24000875	PTC Thermistor, 18 ohm, ±20%, 290V
R920	24000907	FR, 3.9 ohm, 1W
RD01(U903)	24000211	FR, 15 ohm, 1/2W
RV25	24019261	FR, 47 ohm, ±2%, 1/4W
L462	————	DY, Supplied with V901
L901	23200202	Coil, Degaussing, TSB-2329AR
T401	23224336	Transformer, Horiz. Drive, TLN1083
T461	23236454	Transformer, Flyback, TFB4117AR
T801	23211891	Line Filter, TRF3164
T803	23217214	Transformer, Converter, TPW3283AR
Q404	A6872801	Transistor, 2SD2253
Q826	A8643108	IC, Photo Coupler, TLP621(GR-LF)
Q827	A6907751	IC, S1854
F801	23144898	Fuse, 3.15A
F803	23144874	Fuse, 0.8A
P801	23176934	Power Cord
S801	23145434	Switch, Power, 2C2P
V901A	23902067	Socket, CRT, 10P
V901	23312462	Picture Tube, A59EAK71X01

X-Ray Note

X-RAY RADIATION PRECAUTION

1. The E.H.T. must be checked every time the receiver is serviced to ensure that the C.R.T. does not emit X-ray radiation as result of excessive E.H.T. voltage. The nominal E.H.T. for this receiver is 26.5 kV at zero beam current (minimum brightness) operating at 240V ac. The maximum E.H.T. voltage permissible in any operating circumstances must not exceed 29.0 kV. When checking the E.HT., use the High Voltage Check' procedure in this manual using an accurate E.H.T. voltmeter.
2. The only source of X-RAY radiation in this receiver is the C.R.T. To prevent X-ray radiation, the replacement CR.T. must be identical to the original fitted as specified in the Parts List.
3. Some components used in this receiver have safety related characteristics preventing the C.R.T. from emitting X-ray radiation. For continued safety, replacement component should only be made after referring the Product Safety Notice.

GENERAL INFORMATION

All adjustments are thoroughly checked and corrected when the receiver leaves the factory. Therefore the receiver should operate normally and produce proper colour and B/W pictures upon installation. However, several minor adjustments may be required depending on the particular location in which the receiver is operated. This receiver is shipped completely in cardboard carton. Carefully draw out the receiver from the carton and remove all packing materials. Plug the power cord into a convenient 240 volts 50 Hz AC two pin power outlet. Turn the receiver ON. Check and adjust all the customer controls such as BRIGHTNESS, CONTRAST and COLOUR Controls to obtain natural colour or B/W picture.

AUTOMATIC DEGAUSSING

A degaussing coil is mounted around the picture tube so that external degaussing after moving the receiver is normally unnecessary, providing the receiver is properly degaussed upon installation. The degaussing coil operates for about 1 second after the power to the receiver is switched ON. If the set is moved or faced in a different direction, the power switch must be switched off at least one hour in order that the automatic degaussing circuit operates properly. Should the chassis or parts of the cabinet become magnetized to cause poor colour purity, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube, the sides and front of the receiver and slowly withdraw the coil to a distance of about 2 m before disconnecting it from AC source. If colour shading still persists, perform the COLOUR PURITY ADJUSTMENT and CONVERGENCE ADJUSTMENTS procedures.

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis.
1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST Controls to minimum (zero beam current).
3. High voltage will be measured below 29.0 kV.

HORIZONTAL CENTRE ADJUSTMENT
1. Receive the UK PHILIPS pattern.
2. Set the contrast and colour to centre, and the brightness to centre.
3. Adjust H. CENTER USER Control (R452) so the pattern centre can be located at the screen centre.

FOCUS ADJUSTMENT
Adjust FOCUS Control on FLYBACK TRANS. (T461) for well defined scanning lines in the centre area on the screen.

SIF FM DET (LG04) ADJUSTMENT (NICAM BOARD)
1. Connect SIF generator through 0.01µF capacitor to pin DI of PD01 on NICAM Board.
2. Connect the oscilloscope to pin 9 of ICD03.
3. Set up the SIF generator as described below.
   Sound carrier frequency: 6.0 MHz
   Modulation frequency : 1000 Hz
   Frequency deviation: + 15 kHz
   Signal level :100 dBµ (50 ohm load)
4. Adjust LG04 for the maximum response of 1000 Hz dot-out on scope.

PAL MATRIX ADJUSTMENT
1. Tune in the colour programme of the Philips pattern.
2. Set the COLOUR Control to obtain the proper colour.
3. If the PAL MATRIX adjustment is incorrect, the Venetian Blind would appear in the colour bars area. This case needs the adjustment.
4. At the first, adjust DL PHASE ADJ. Coil (L551) to minimize the Venetian Blind.
5. Next adjust 1H-DL ADJ. VR (R551) to minimize the Blind.
6. If the Venetian Blind still remains, adjust 1 H-DL PHASE ADJ. Coil (L551) to minimize the Blind again.
7. Repeat the item 5 and 6 procedures, adjust the R551 and L551 until the Blind does not appear.

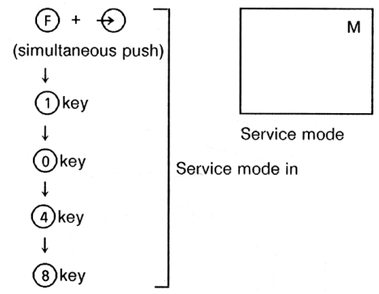
CRT GREY SCALE ADJUSTMENT
1. Tune in an active channel.
2. Set the SERVICE SW. (S202) in the "H. LINE" position.
3. Turn the SCREEN Control (on T461) fully counter-clockwise.
4. By rotating the RED, GREEN and BLUE CUT OFF Controls (R557, R556, R559) to the mid position.
5. Set the GREEN and BLUE DRIVE Controls (R252, R253) to the center.
6. Rotate the SCREEN Control gradually clockwise until the first line appears slightly on the screen. Set the SCREEN Control to this position.
7. Adjust the CUT OFF Controls to obtain the slightly lighted horizontal lines in the same levels of three colours (RED, GREEN and BLUE). The lines may look like white if the CUT OFF Controls are adjusted properly.
8. Set the SERVICE SW. (S202) in the RE-CEIVE" position.
9. Set the CONTRAST and COLOUR Controls to minimum, and BRIGHTNESS Control to the maximum.
10. Adjust the BLUE and GREEN DRIVE Controls (R252/R253) to obtain proper white-balanced picture in high light areas.
11. Set the BRIGHTNESS and CONTRAST Controls to obtain dark grey raster. Then check the white balance in low brightness. If the white balance is not proper, retouch the CUT OFF Controls and DRIVE Controls to obtain a good white balance in both low and high light areas.

SUB-BRIGHTNESS ADJUSTMENT
1. Tune in a colour programme.
2. Set the CONTRAST Control to the minimum and the BRIGHTNESS Control to the centre.
3. Set the COLOUR Control to the centre.
4. Set the SUB-BRIGHT. Control (R255) to the centre and leave the receiver for five minutes in this state.
5. Watching the picture well, adjust the SUB-BRIGHT. Control in the position where the picture does not show evidence of blooming in high bright area and not appear too dark in low bright portion.
6. Check the proper picture variation by rotating the CONTRAST and BRIGHTNESS Controls to both extremes.
7. If the picture does not appear dark with the CONTRAST and BRIGHTNESS Controls turned to the minimum, or not appear bright with the controls turned to the maximum, adjust the SUB-BRIGHT. Control again for the acceptable picture.

1. OUTLINE
Since each IC used is of I²C bus control type, readjustment of the TVs also needs adjustment through 1²C bus control. In the service mode, sub-bright, deflection system sub-adjustments, picture system sub-adjustments can be made easily with user remote control unit.

2. SERVICE MODE OPERATION

2-1. How to Enter the Service Mode



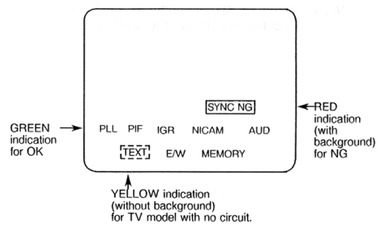
2-2. How to Exit from the Service Mode
Exit the service mode by turning the power on/off with the remote control.

3. ADJUSTMENT IN THE SERVICE MODE

3-1. Service Mode Level Adjustments
1) Push F + ◪ key (simultaneous push) (item UP) or F ♪ key (simultaneous push) (item DN) to select item to be adjusted.
2) Adjust with the level UP/DN (VOL UP/DN key) key.

3-2. Other Service Mode Adjustments
(F) + (2) key (simultaneous push) cut off: (NO VERTICAL DEFLECTION) ON/OFF

4. SELF CHECK
1) Indicates sync signal and acknowledgement of each IC.
2) Example of display on screen



3) Operation:

"1" TV gets into service mode with key operation;

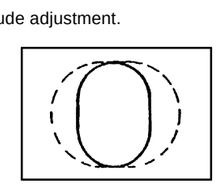
(F) + (→) → (1) key → (0) key → (4) key → (8) key

"2" TV indicates screen with "F" +"4" key.

5. SUB DATA ADDITIONAL DESCRIPTION

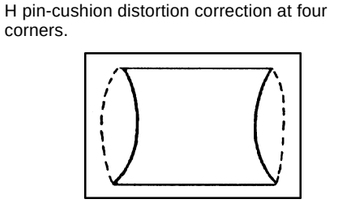
Symbol
HIT

Description
V amplitude adjustment.



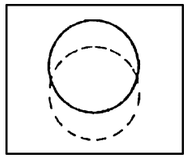
Symbol
LIN

Description
V linearity correction 1.



Linearity balance between top and bottom screen.

VSC
V linearity correction 2.



Linearity balance between top/bottom and center.

VPS
V picture position adjustment.

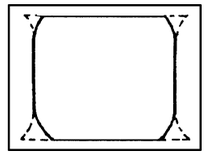
VCP
Setting of amount of V amplitude correction against variation of screen brightness.

WID
H amplitude adjustment.

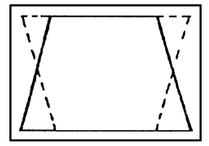
DPC
H pin-cushion distortion correction.

CNR
H pin-cushion distortion correction at four corners.

KEY
Pedestal distortion correction.



HCP
Setting of amount of H amplitude correction against variation of screen brightness.



VMC
V linearity correction.
Linearity balance at 1/4, 3/4 areas from top.

Adjustment parts or Bus control item
Horizontal amplitude adjustment (WID)
Pin distortion compensation amount adjustment (DPC)
Keystone distortion compensation amount adjustment (KEY)

Input point/Output point
Visual check of picture (Bus control)

Adjustment signal
WG Philips pattern
Do not use the Philips pattern ot FRANCESE-CAM.

1. Conditions: After V. HEIGHT, VERT POSITION and H. CENT have been adjusted, set the controllers as follows:
   Contrast: Center
   Brightness: Center
   Color: Center

2. Adjustment procedure
a. Adjust the horizontal amplitude by the sub address WID. Adjust so that the left and right white flags of Philips pattern disappear at the very limits.
b. Make the left and right vertical bars straight by the sub address DPC.
c. Compensate the key distortion by the sub address KEY.
d. Again, adjust the sub address WID.

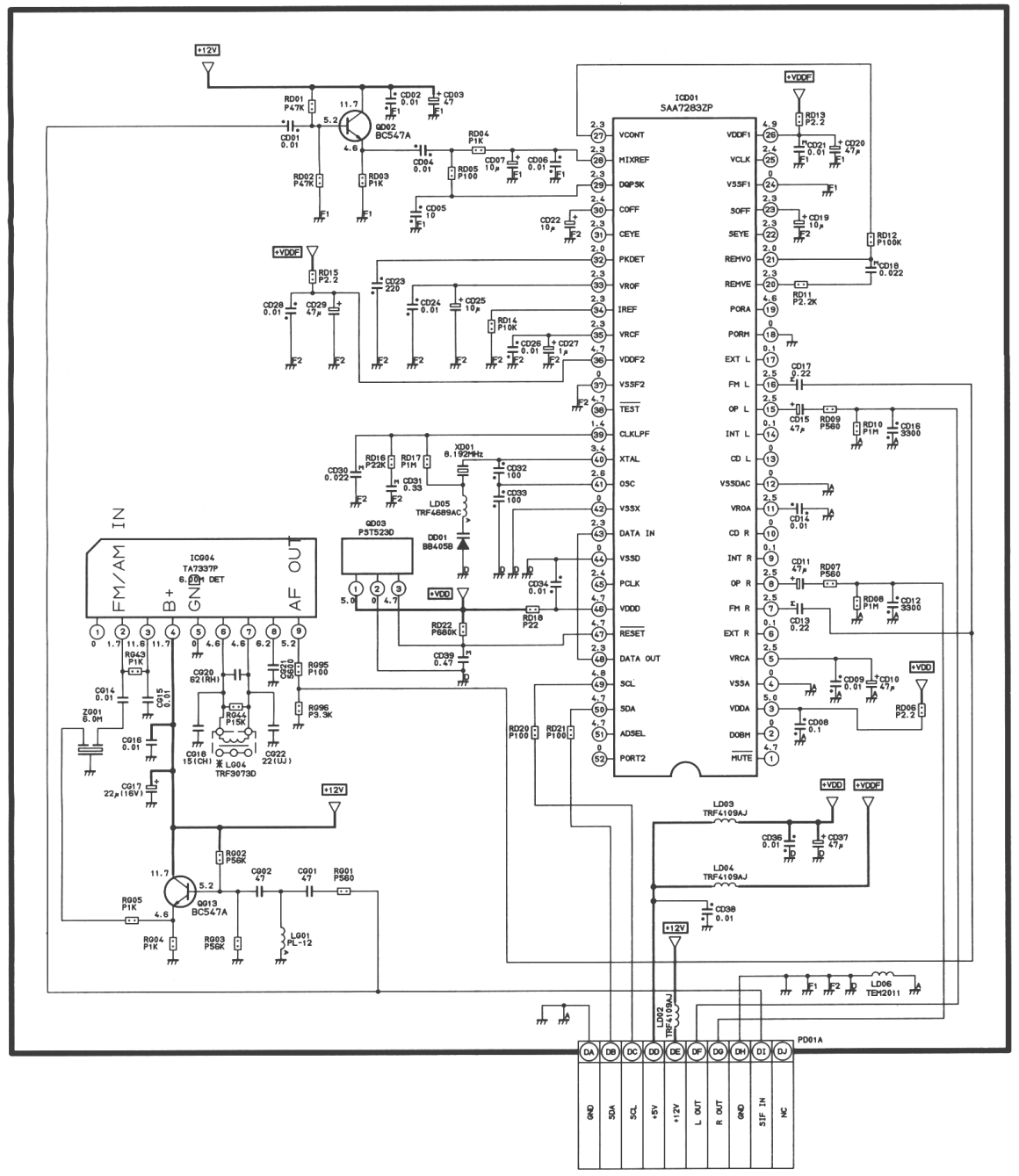
Adjustment parts or Bus control item
HEIGHT (HIT)
VERT. POSITION

Input point/Output point
Visual check of picture (Bus control)

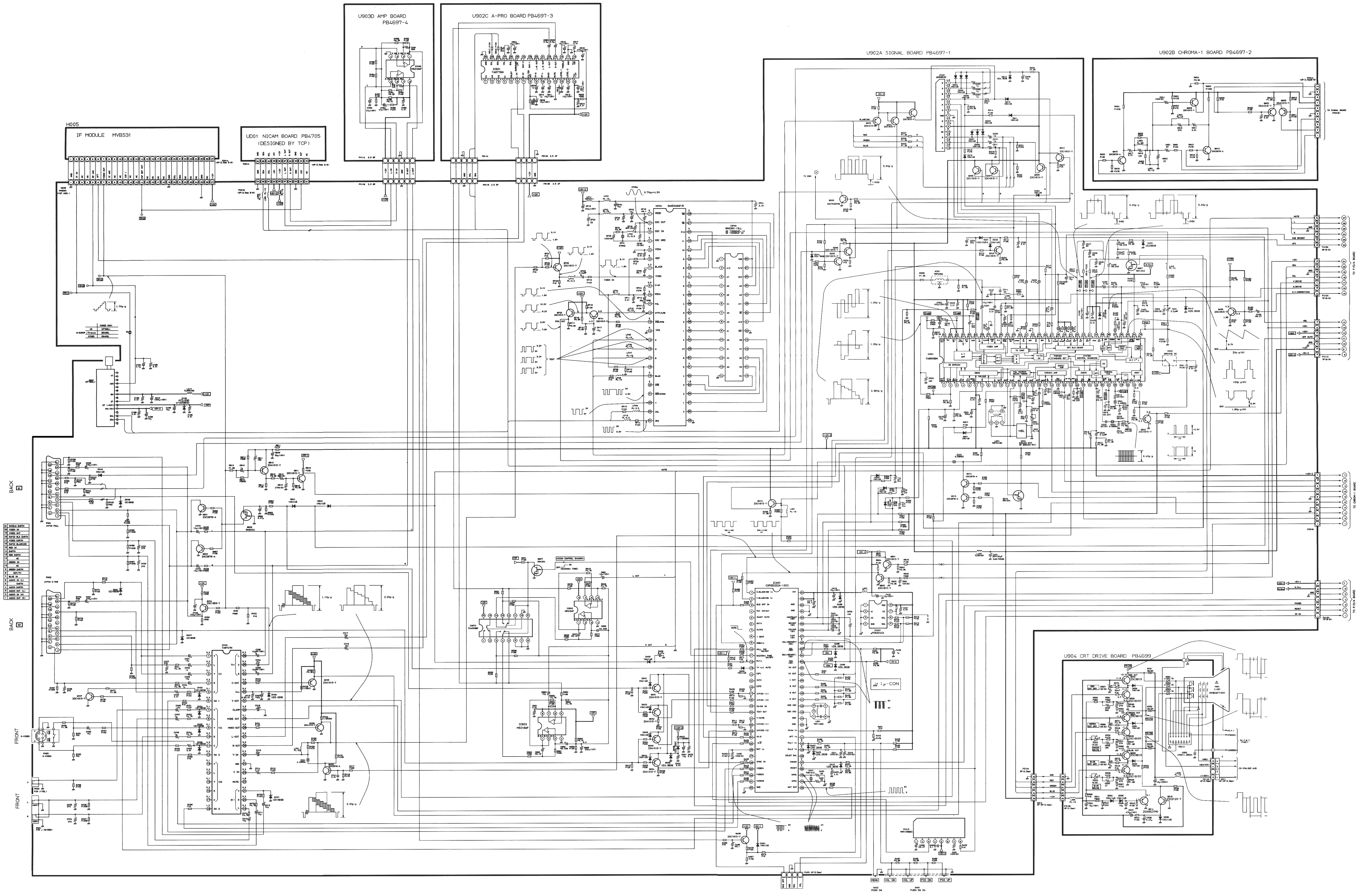
Adjustment signal
WG Philips pattern
Do not use the Philips pattern of FRANCESE-CAM.

Adjustment conditions and procedures
1. Conditions: Contrast: Center
   Brightness: Center
   Color: Center
2. Adjustment procedure
a. By the bus address VPS, adjust V. position so that the circle of Philips pattern comes to the vertical center.
b. Adjust HIT so that the upper and lower flags of Philips pattern disappear at the very limits.

UD01 NICAM MODULE PB4705



U903 POWE.DEF.AUD. BOARD PB4698


U903D AMP BOARD
PB4697-4
U902C A-PRO BOARD PB4697-3
U902A SIGNAL BOARD PB4697-1
U902B CHROMA-1 BOARD PB4697-2
H005
IF MODULE MVBS31
UD01 NICAM BOARD PB4705
(DESIGNED BY TCP)
IC601 TA8776N
ICV06 M5218AP
ICF02 SAA5246AP/E
ICF03 BR6265-12LL
ICX01 AN5862K
IC501 TA8808BN
ICV01 TA8747N
IC670 TC4053BP
IC602 M5218AP
IC603 M5218AP
ICA01 CXP85332A-105S
ICA02 μPD6254CX
ICA10 MM1096BS
U904 CRT DRIVE BOARD PB4699
V901 C.CRT A59EAK71X01
TUNER H001
UK UF785L1
N-EUROP / France E6483L
OTHER E6482L
21 SHIELD EARTH
20 VIDEO IN
19 VIDEO OUT
18 RAPID BLK EARTH
17 VIDEO EARTH
16 RAPID BLANKING
15 RED IN
14 EARTH
13 RED EARTH
12 NC
11 GREEN IN
10 NC
9 GREEN EARTH
8 EXT/TV
7 BLUE IN
6 AUDIO IN (L)
5 EARTH
4 AUDIO EARTH
3 AUDIO OUT (L)
2 AUDIO IN (R)
1 AUDIO OUT (R)
BACK E1
BACK E2
FRONT
S-VIDEO
TO SIGNAL BOARD (P501B)
TO P/D/A BOARD
TO CHROM-1 BOARD
TO F.B.T. (T461)
TO POW.DEF.AUD
MENU
VOL DN
VOL UP
POS DN
POS UP
SA02 PUSH SW
SA01 PUSH SW X4
μ-CON

6. ROM DATA LIST FOR IIC BUS CONTROL

(Reference Value)

Symbol	Comment	Data
M00	MODE 0	42
M01	MODE 1	01
M02	MODE 2	09
M03	MODE 3	17
LVE	L-SECAM OUTPUT LEVEL	—
RFA	RF AGC	—
HIT	HEIGHT	* 30
LIN	V. LINEARITY	32
VSC	V. S-CORRECTION	32
VPS	V. POSITION	* 07
VCP	V. COMPENSATION	30
WID	H. WIDTH	* 22
DPC	PARABOLA	* 26
CNR	DPC CORNER	# R1; 44, R2; 42, R3; 32
KEY	KEYSTONE	* 09
HCP	H. COMPENSATION	10
VMC	V. M-CORRECTION	52
SHI	16:9 SUB HEIGHT	00
SLI	16:9 SUB V. LINEARITY	32
SVS	16:9 SUB V. S-CORRECTION	17
SDP	16:9 SUB DPC	# R1; 18, R2; 22, R3; 21
SCN	16:9 SUB CORNER	30
TON	BAZOOKA TONE MID-LEVEL	36
NON	NICAM ON LEVEL	—
NOF	NICAM OFF LEVEL	—
ION	IGR ON LEVEL	—
IOF	IGR OFF LEVEL	—
I24	IGR K24	—
I39	IGR K39	—
N39	NICAM K39	—
I49	IGR K14, K19	—
EMX	NICAM OFF LEVEL (PHIL)	252
EMN	NICAM ON LEVEL (PHIL)	65
FMA	FM INPUT ATT (PHIL)	5

* Mark items should be adjusted.

Pair used

R1 : V901 (PHILIPS)

R2 : V901 (TSB)

R3 : V901 (VIDEO COLOR)