Fig-1 Adjustment flow-chart

3. Factory mode adjustment

3.1 Enter factory mode adjustment

Press the "factory menu" button on the remote control, the screen display the factory menu.

3.2 factory menu operation method

Press the channel +/- button to selection the sub menu of factory menu, and press the vol+/- to enter the sub menu or setting the value.

3.3 exit the factory menu

Press the MENU button again and again; it can exit the factory menu.

4. Adjustment methods

4.1 B+ voltage adjustment

a. Be sure the voltage AC 120V/60Hz.

b. Connect the digital voltmeter to TP3 and GND of B+ test point, input the US-7 signal, set the picture control to "standard", adjust RP501 to let the B+(test point) voltage 140V+/-0.3V

c. In the STAND BY turn off, B+ voltage about 20V

4.2 OSD position adjustment

In the factory menu, select SYS SETTING sub menu, adjust OSD H-POS item, let the character position to screen display center.

4.3 AFT adjustment

a. IF of tuner (TUNER101) output and TP6 are separate.

b. Input 45.75MHz of frequency and 90db of amplitude signals to TP6

c. Adjust the tunable inductance L110, and measure between the TP4 and GND voltage, until the TP4 voltage to be 2.5V.

d. Output pin IF of TUNER101 and TP6 bonding pad is normal.

4.4 AGC voltage adjustment

a. Receive 60db split field signal

b. Adjust the potentiometer RP101, and measure the TP5 to GND voltage, until the voltage of TP5 to be 3.5V, then noise wave of the picture point disappears.

4.5 focus adjustment

a. Receive A28 signal, set the picture mode to standard.

b. Adjust focus potentiometer of FBT, until the B area display best.

4.6 Screen-grid voltage and white balance adjustment

a. Receive US-7 split field signal, the picture mode to "warm".

b. In the factory menu, select the WHITE BALANCE SETTING menu, fixed the CUT OFF R and adjust the CUT OFF G and the CUT OFF B, until the white balance is normal.

c. Select the color and contrast to 0, select the brightness to 50 in the user menu. In the factory menu, select the LUMINANCE SETTING menu; adjust the Brightness min, until the back level voltage about 180V. Adjust the SCREEN potentiometer, until rightmost of gray of the US-7 picture up and down separate.

d. Select the color to 0, the brightness to 50 and the contrast to 100 in the user menu, adjust the Contrast max, until the eight level gray amplitude Vp-p to 100V.

e. Select the color to 0, the brightness and the contrast to 100 in the user menu, adjust the BRIGHTNESS max, until low right back color of the D-8 picture does not white.

f. In the factory menu, select the WHITE BALANCE SETTING sub menu; adjust the white balance (color temperature to 12000K+/-8MPCD, the color coordinate to 0.270+/-0.008, 0.283+/-0.008).

4.7 Horizontal and vertical scanning centre adjustment of TV

4.7.1 Horizontal center adjustment

Receive A6 signal, the picture mode to "STANDARD" in the factory menu, select Horizontal setting menu, adjust the H POS, until the picture H-center and screen center accord.

4.7.2 Vertical center adjustment

Receive A6 signal, the picture mode to "STANDARD" in the factory menu, select Vertical setting menu, adjust the V POS, until the picture V-center and screen center accord.

4.8 Vertical scanning adjustment

Receive A12 signal, the picture mode to "STANDARD" in the factory menu, select Vertical setting

menu, adjust the V SIZE, until up and down over scanning of the picture to 8% of the all screen.

4.9 Raster correction and horizontal amplitude adjustment of TV

Receive white grid of NTSC signal, the picture mode to "STANDARD" in the factory menu, select horizontal setting menu, adjust the PCC, until the raster distort least, adjust the H SIZE, until right and left over scanning of the picture to 8% of the all screen.

4.10 If the scanning line distortion and raster geometric distortion dissatisfy condition, you can adjust the factory menu item

SCOR	S-Correction
CCOR	C-Correction
PCAC	Pin C ushion Asymmetry Correction
PCC	Pin Cushion Correction
KEYST	Keystone Correction
PARAL	Parallelogram Correction
TCC	Top Corner Correction
BCC	Bottom Corner Correction

4.11 Output the max sound of power

Receive the US-7 signal; adjust the volume to max, check the sound power output no less than 2 x 6W.

4.12 White balance and Horizontal and vertical scanning centre and amplitude adjustment of HDTV

The unit has the YPBPR terminal; it can display the HDTV signal

Support the HDTV and TIMING of the VG848 format.

Support input signal of YPbPr	
Signal format	TIMING of the VG848 format
480I	950
480P	978
576I	969
576P	979
1080I/60Hz	972
720P/60Hz	976
1080P/60Hz	970

When the white balance adjustment, the picture mode to STANDARD in the user mode. When The H-V scanning adjustment, set the H-CENTER, H-amplitude, V-CENTER and V-amplitude to 0 in the user menu.

4.12.1 YPbPr input (480p signal)

a. White balance adjustment

Input eight level gray of 480p format signal to HDTV YPbPr terminal, the picture mode to STANDARD.

In the factory menu, select the WHITE BALANCE SETTING menu; adjust the white balance (color temperature to 12000K+/-8MPCD, the color coordinate to 0.270+/-0.008, 0.283+/-0.008).

b. H-CENTER adjustment

Input white grid of 480p format signal to HDTV YPbPr terminal, the picture mode to STANDARD.

In the factory menu, select Horizontal setting menu, adjust the H POS, until the picture H-center and screen center accord.

c. V-CENTER adjustment

In the factory menu, select Vertical setting menu, adjust the V POS, until the picture V-center and screen center accord.

d. V-SCANNING adjustment

In the factory menu, select Vertical setting menu, adjust the V SIZE, until up and down over scanning of the picture to 8% of the all screen.

e. Raster correction and horizontal amplitude adjustment

Receive white grid of NTSC signal, the picture mode to "STANDARD" in the factory menu, select horizontal setting menu, adjust the PCC, until the raster distort least, adjust the H SIZE, until right and left over scanning of the picture to 8% of the all screen.

f. If the scanning line distortion and raster geometric distortion dissatisfy condition, you can adjust the factory menu item

SCOR   S-Correction
CCOR   C-Correction
PCAC   Pin Cushion Asymmetry Correction
PCC   Pin Cushion Correction
KEYST   Keystone Correction
PARAL   Parallelogram Correction
TCC   Top Corner Correction
BCC   Bottom Corner Correction

4.12.2 YPbPr input (1080I/60Hz format signal)

Adjustment mode to 4.12.1

5. Check point

5.1 check the high voltage

a.   Check the second anode and GND connect to the high voltmeter

b.   Receive US-7 signal, the picture mode to STANDARD, measure the high voltage to 30.0KV+/-1KV.

c.   The brightness and contrast to min value, while measure the high voltage no more than 35KV.

5.2 check the CRT Filament voltage

Receive the US-7 signal, the picture mode to STANDARD item, measure the CRT filament voltage to be 6.3+/-0.2Vrms.

5.3 Check the X-ray protection

a.   Receive the US-7 signal, the picture to STANDARD item.

b.   Connect TP1 to TP2 point of short circuit; X-ray protection circuit must be operation.

5.4 Check the picture part

5.5 Check the sub-brightness

5.6 Check chromatic purity and converge

5.7 Check the VIDEO and audio input/output

5.8 Check the unit and the remote control function

6. Ex-factory pre-setting

7. Check the supply power (AC 100V-140V/60Hz)

APPX: horizontal and vertical scanning adjustment diagram

Function	Sad	Pin	Byte	Waveform	Effect on Screen
Vertical Size	07	VOut	x0000000	$V_{amp(min)}$ ... $V_{mid(VOut)}$	
			x1111111	$V_{amp(max)}$ ... $V_{mid(VOut)}$	
Vertical Position	08	VOut	x0000000	-3.5V, $V_{mid(VOut)}$	
			x1000000	-3.5V, $V_{mid(VOut)}$	
			x1111111	$V_{mid(VOut)}$ ... -3.5V	
S-correction	09	VOut	x0000000: Null	V_{VOamp}	
			x1111111: Max.	$V_{VOS-cor}$, V_{VOamp}, 0 1/4T_{VR} 3/4T_{VR} T_{VR} t_{VR}	
C-correction	0A	VOut	x0000000	V_{VOamp}, $V_{VOC-cor}$, 0 1/2T_{VR} T_{VR} t_{VR}	
			x1000000 : Null	V_{VOamp}	
			x1111111	V_{VOamp}, $V_{VOC-cor}$, 0 1/2T_{VR} T_{VR} t_{VR}	
Vertical moiré amplitude	0B	VOut	x0000000: Null	V_{amp}, $(n-1)T_V$ nT_V $(n+1)T_V$ t	
			x1111111: Max.	$V_{V-moiré}$, V_{amp}, $(n-1)T_V$ nT_V $(n+1)T_V$ t	

Function	Sad	Pin	Byte	Waveform	Effect on Screen
Horizontal size	10h	EWOut	0000000x	$V_{EW\text{-}DC(min)}$ ... 0 1/2T_{VR} T_{VR} t_{VR}	
			1111111x	$V_{EW\text{-}DC(max)}$ ... 0 1/2T_{VR} T_{VR} t_{VR}	
Keystone correction	0D	EWOut	x0000000	$V_{EW\text{-}key}$ $V_{EW\text{-}DC}$	
			x1111111	$V_{EW\text{-}key}$ $V_{EW\text{-}DC}$	
Pin cushion correction	0C	EWOut	x0000000	$V_{EW\text{-}PCC(min)}$ ... 0 1/2T_{VR} T_{VR} t_{VR}	
			x1111111	$V_{EW\text{-}PCC(max)}$ ... 0 1/2T_{VR} T_{VR} t_{VR}	
Top corner correction	0E	EWOut	x1111111	$V_{EW\text{-}TCor(max)}$ ... 0 1/2T_{VR} T_{VR} t_{VR}	
			x0000000	$V_{EW\text{-}TCor(min)}$ ... 0 1/2T_{VR} T_{VR} t_{VR}	
Bottom corner correction	0F	EWOut	x1111111	$V_{EW\text{-}TBot(max)}$ ... 0 1/2T_{VR} T_{VR} t_{VR}	
			x0000000	$V_{EW\text{-}TBot(min)}$ ... 0 1/2T_{VR} T_{VR} t_{VR}	
Parallelogram correction	12h	Internal	x0000000	$t_{ParalC(min)}$ static phase ... 0 1/2T_{VR} T_{VR} t_{VR}	
			x1111111	$t_{ParalC(max)}$ static phase ... 0 1/2T_{VR} T_{VR} t_{VR}	
Pin cushion asymmetry correction	11h	Internal	x0000000	$t_{PCAC(max)}$ static H-phase ... 0 1/2T_{VR} T_{VR} t_{VR}	
			x1111111	$t_{PCAC(max)}$ static H-phase ... 0 1/2T_{VR} T_{VR} t_{VR}	