



Service Adjustments

3P51 ADJUST MENU

1.FACTORY MODE:

- (1) Assembly line adjust mode: Press S.M.,  (DISPLAY) and **I/II** keys in turn to enter this mode.
- (2) Engineer adjust mode: Press CLOCK, P.M. and  keys in turn to enter this mode. This mode is usually for R&D and engineering department use.
- (3) Press digital keys to enter every adjust page, use PROG+/- keys to pick adjust items, use VOL+/- keys to adjust the value.
- (4) Press DISPLAY to quit factory mode.

2.B+ VOLTAGE ADJUST

Measure C600A + voltage, adjust VR641 to get proper B+ voltage according to CRT assembly list requirement.

3. RF AGC VOLTAGE ADJUST

- (1) Receive 294.25MHz, 60dB color bar signal.
- (2) Enter factory mode and press digital key “4”.
- (3) Measure tuner AGC point voltage, adjust AGC item till the voltage is 2.4V, or till picture noise just disappears. Usually the AGC value is fixed to 27.

4. FINE ADJUST:

(1) FOCUS ADJUST

- a. Receive cross-hatch pattern signal.
- b. Set picture to “ RICH” mode.
- c. Adjust FBT’s FOCUS knob till picture is clear.

(2) SCREEN VOLTAGE ADJUST(KEY 0):

- a. Set picture to “STANDARD” mode, without signal input;
- b. Enter factory mode and press digital key “0”
- c. Adjust FBT’s SCREEN knob till VG2 voltage flag changes between “LOW” and “HIGH”, press PROG+ key to enter other menu.

(3) HORIZON ADJUST(KEY 1):

- a. Receive 50HZ monoscope PATTERN. Set TV to standard mode. Press KEY1 to enter factory mode
- b. Adjust 5HSH(for 60Hz picture, it is 6HSH) to set picture horizontal center to CRT horizontal center.
- c. Receive 60HZ monoscope PATTERN, repeat above b item

Service Adjustments

(4) VERTICAL & YUV/RGB HORIZON ADJUST (KEY 2):

5VSL	50Hz vertical linearity	5SCL	50Hz vertical slope correction
5VSH	50Hz vertical center	5VAM	50Hz vertical size
6VSL	60Hz vertical linearity	6SCL	60Hz vertical slope correction
6VSH	60Hz vertical center	6VAM	60Hz vertical size

- a. Receive 50Hz cross hatch signal, set TV to STANDARD mode, press digital key “2” after enter factory mode, adjust 5VSL so that picture’s vertical line is just at the bottom of the half picture.
- b. Adjust 5VSH to set picture vertical center to CRT center.
- c. Adjust 5SCL to set proper vertical linearity
- d. Adjust 5VAM to obtain picture’s vertical re-display ratio more than 90% .
- e. If necessary, fine adjust above items.
- f. Receive 50HZ RGB or YUV cross hatch signal, set TV to STANDARD mode, adjust 5RGH till picture horizontal center is at the CRT center. (OPTION)
- g.
- h. Receive 60Hz cross hatch signal, repeat above a, b.
- f. Receive 60HZ RGB or YUV cross hatch signal, repeat above items. (OPTION)

(5) OSD POSITION:


- 4-6-1 Menu OSD position adjustment: Receive 50/60HZ cross hatch pattern. Set TV standard status. Press **KEY 2** in factory mode, adjust 5VOF/6VOF and HOF item, to obtain menu OSD at the center of CRT screen;
- 4-6-2 LOGO position adjustment: Receive 50/60HZ cross hatch pattern. Set TV standard status. Press **KEY 7** in factory mode, adjust XMIN, XMAX, YMIN, and YMAX item, to obtain LOGO at the center upto 1/3 of CRT screen.
- 4-6-3 TELETEXT OSD position adjustment: Receive 50/60HZ TELETEXT signal. Set TV standard status. Press **KEY 7** in factory mode, adjust TXMI and 5TYM/6TYM item, to obtain INDEX at the center of CRT screen.

4-2 White Balance Adjustment (Applied in factory) (KEY 3)

Normally, this chassis can auto adjust white balance, but for some CRT need to adjust white balance carefully by hand, Set BRIGHTNESS and CONTRAST at normal status , receive GREY SCAL and entering factory mode press KEY 3, set WPR at 31, adjust WPG and WPR to obtain white balance.

4-3 RF.AGC ADJUSTMENT (KEY 4)


- 4-3-1 Receive 60dB RF signal. Connect Digital voltmeter positive terminal to tuner AGC terminal and negative terminal to GND.
- 4-3-2 Enter the AGC item in factory mode by the REMOTE CONTROL.

Method: Press key S.M., , I/II in turn to enter factory mode, then

Service Adjustments

press key “4” and select AGC item by PROG+/-.


4-3-3 Adjust “VOL+” and “VOL-“ keys to obtain 2.4V Digital voltage meter reading or just no NOISE on screen。

Press key “” to exit factory mode!。


5、E2PROM INITIALIZATION

(1) E2PROM initialization (KEY 8):

We can use an empty E2PROM when making the sample TV or repairing,also can use the E2PROM which has been full of data,but you must follow the steps below to initialize the E2PROM.

Press the keys **CLOCK** , **P.M.**,  in turn to enter the factory mode。 Press KEY 8,VOL +/- in turn,you may see the OSD”BUSY” after the “INIT” on the screen。About a while, the character“BUSY”will disappear, then POWER OFF and ON the TV,the initialization is completed。

(2) FUNCTION SETTING (KEY 5)

Press the keys “**CLOCK**” , “**P.M.**”, “” in turn to enter the factory mode。 Press KEY 5 to enter the setting menu。

b.Set values to OPTION 1- OPTION 7

c.LOGO setting when powered on or no signal: Press key **CLOCK** in factory menu to enter the LOGO edit mode, there are two rows, the 1st can set the customer’s name etc, and the 2nd row can set to display the customer’s e-mail, phone...。 Press the keys “PROG +/- ”to select the character to edit, use keys “VOL+/-” to choose the charater.

The detailed instruction of 3P51

Some items displayed but not mentioned below is not used in 3P51 chassis.

Item	Storage address	Display string	Range (Index value)		Default value
Information of the factory menu		RELEASE2.0;	Software Version		Fixed, not changeable
<i>Drect key “8”</i>					
Initialization	INIT	initialize	1	0	
		uninitialize	0		
<i>Instruction</i>	Press key “VOL +”, you can see the character ”INIT BUSY ” is active, Exit the menu and turn off the TV after the character disappearing, reopen it can have a success to innitalize。 Then the program has been stored in the memorizer, and then need to readjust the parameter of the factory menu。				

Service Adjustments

Item	Storage address	Display string	Range (Index value)	Default value
Drect key “0”				
Screen Voltage		A level bright line		
<i>Instruction</i>		Adjust the screen voltage under Tv standard mode and no signal input, just can see the line is ok.		
Drect key “1”				
Horizontal paralellogram 50Hz	29	5PAR	0-63	31
Horizontal bow 50Hz	2A	5BOW	0-63	31
<i>Instruction</i>		The above value be adjusted ± 10 can be OK,the default value is 31		
Horizontal shift 50Hz	2B	5HSH	0-63	19
EW width 50Hz	2C	5EWW	0-63	33
EW parabola/width 50Hz	2D	5EWP	0-63	19
EW upper corner parabola 50Hz	2E	5UCR	0-63	33
EW lower corner parabola 50Hz	2F	5LCR	0-63	18
EW trapezium 50Hz	30	5EWT	0-63	43
Horizontal paralellogram 60Hz	37	6PAR	0-63	31
Horizontal bow 60Hz	38	6BOW	0-63	31
Horizontal shift 60Hz	39	6HSH	0-63	31
<i>Instruction</i>		The above value be adjusted ± 10 can be OK,the default value is 31		
EW width 60Hz	3A	6EWW	0-63	33
EW parabola/width 60Hz	3B	6EWP	0-63	19
EW upper corner parabola 60Hz	3C	6UCR	0-63	44
EW lower corner parabola 60Hz	3D	6LCR	0-63	10
EW trapezium 60Hz	3E	6EWT	0-63	44
Drect key “2”				
Vertical slope 50Hz	31	5VSL	0-63	31
Vertical amplitude 50Hz	32	5VAM	0-63	10
S-correction 50Hz	33	5SCL	0-63	31
<i>Instruction</i>		generally ,SCL can be setted to be 31.		
Vertical shift 50Hz	34	5VSH	0-63	22
Horizontal shift 50Hz on RGB mode	35	5RGH	0-63	38
OSD vertical position offset 50Hz	36	5VOF	0-63	38
<i>Instruction</i>		Horizontal shift on RGB mode generally between 30 to 42, the direct way is to connect the two Tv's SCART. Adjust the Value		
Vertical slope 60Hz	3F	6VSL	0-63	31
Vertical amplitude 60Hz	40	6VAM	0-63	11
S-correction 60Hz	41	6SCL	0-63	31
Vertical shift 60Hz	42	6VSH	0-63	23
Horizontal shift 60Hz on RGB mode	43	6RGH	0-63	38
OSD vertical position offset 60Hz	44	6VOF	0-63	31
OSD horizontal position offset	45	HOF	0-63	42

Service Adjustments

Item	Storage address	Display string	Range (Index value)		Default value
Vertical zoom	46	VX	0-63		32
Instruction		Adjust this item when lack of vertical amplitude will lead to the picture can't be full of the screen,then need to adjust the resistance's(R318,R319) value.			
Direct Key “3”					
Black level off-set R		RED	0-63		32
Black level off-set G		GRN	0-63		32
White point R (Direct Key “Red”)		WPR	0-63		31
White point G (Direct Key “Green”)		WPG	0-63		31
White point B (Direct Key “Blue”)		WPB	0-63		45
Instruction		The white balance can be adjusted automatically on this machine, only one or two tube need to be adjusted, generally the value of RED and GRN between 23 to 39,if adjust excessively will lead the picture faded。 (Remark: because of the higher colour temperature, it's normal that you feel a little red。)			
Luminance delay time PAL		YDFP	0-15		8
Instruction		This item has the function to adjust the luminance and colour delay,change the NO. on P card,make the boundary of central green and purple accord with the border of above gray pane.			
Y delay time NTSC		YDFN	0-15		8
Y delay time SECAM		YDFS	0-15		8
Y delay time AV		YDAV	0-15		8
Teletext contrast		TTBR	0-15		15
Mute delay time while switch program		MUTD	0-20		13
Instruction					
Direct Key “4”					
AGC take-over		AGC	0-63		27
UOC Volume		VOL	0-63		56
Instruction		Input standard RF signal with 1KHz sound ,measure UOC amplitude(location is W101) of output audio RMS value,adjust VOL till it reaches to 0.5Vrms.			
SUB HUE control		SHUE	0-63		35
IF frequency		IFFS	38.9MHz	2	2
			38.0MHz	3	
Cathode drive level		HDOL	0-15		2

Service Adjustments

Item	Storage address	Display string	Range (Index value)		Default value
Instruction		Adjust "HDOL" can change the voltage of “R.G.B”obviously,but adjust too high may lead to fade badly,reverse maybe lead to lack of luminance,so should be careful。 Generally it's ok when there is no black screen or picture faded change the channel under the maximal beam current			
IF AGC speed		SPD	0.7X	0	1
			Normal	1	
			3X	2	
			6X	3	
VG2 Brightness		VG2B	0-63		31
TELETEXT brightness control		TRBI	0-63		25
Direct Key “6”					
Contrast –Min pre-set		1CON	0-100		10
Brightness –Min pre-set		1BRI	0-100		10
Colour –Min pre-set		1COL	0-100		0
Sharpness –Min pre-set		1SHP	0-100		0
Contrast –Middle pre-set		2CON	0-100		60
Brightness – Middle pre-set		2BRI	0-100		40
Colour – Middle pre-set		2COL	0-100		45
Sharpness – Middle pre-set	65	2SHP	0-100		60
Contrast – Rich pre-set	66	3CON	0-100		100
Brightness – Rich pre-set	67	3BRI	0-100		100
Colour – Rich pre-set	68	3COL	0-100		100
Sharpness – Rich pre-set	69	3SHP	0-100		100
Volume inflexion Pre-set		VL05			40
		VL20			65
		VL40			83
		VL60			88
		VL80			95
Instruction		If VOL05 set to 40,it means when VOLUME is set to 05 by user,the internal Volume is 40.This function is used to adjust speaker sound level-VOLUME OSD curve			
opening time control		RGBL	0-25		8
Direct Key “7”					
Screen saver / Logo Left position	6A	XMIN	0-255		44
Screen saver Right position	6B	XMAX	0-255		186
Screen saver Top position	6C	YMIN	0-63		4
Screen saver Bottom position	6D	YMAX	0-63		37
Teletext Horizontal position	6E	TXMI	0-255		40

Service Adjustments

Item		Storage address	Display string	Range (Index value)		Default value
Teletext Vertical position 50Hz		6F	5TYM	0-63		38
Teletext Vertical position 60Hz		70	6TYM	0-63		38
Instruction						
Direct Key “5”						
NVM option 1		71	OP1	0	1	18
VG2 Alignment mode			Bit 0	AVG	VSD	0
Instruction			VG2 is usually set to 0.Receive 49.75MHZ PHILIPS signal. press key "PM" to set picture to standard mode, adjust FBT's SCREEN VOLTAGE knob, if the screen voltage is too high, the OSD "high" appears, oppositely, OSD "low" appears, when you see the characters "HIGH" and "LOW" display by turns, it means VG2 is well set.			
YUV or Yprpb			Bit 1	YUV	Yprpb	1
WIDE BAND SOUND PLL			Bit 2	off	on	0
BLACK STRETCH AMOUNT			Bit 3	10%	20%	0
AV2			Bit 4	off	on	1
SVHS			Bit 5	off	on	0
BLACK STRETCH DEPTH			Bit 6	20IRE	30IRE	0
XX			Bit 7	off	on	0
NVM option 2		72	OP2	0	1	11
AVL			Bit 0	off	On	1
Auto sound in autosearch mode			Bit 1	off	On	1
Pan Europe Teletext set			Bit 2	Off	On	0
Cyrillic Teletext set			Bit 3	Off	On	1
Farsi Teletext set			Bit 4	Off	On	0
Arabic Teletext set			Bit 5	Off	On	0
Sync On Y (YUV/Yprpb mode)			Bit 6	off	on	0
Slicing lever			Bit 7	dependent on noise	Fixed	0
NVM option 3		73	OP3	0	1	255
SW1	SW2		Bit 0	Off	On	1
English Menu	English Menu					
Farsi Menu	Farsi Menu		Bit 1	Off	On	1
Arabic Menu	Arabic Menu		Bit 2	Off	On	1
Turkey menu	Serbian Menu		Bit 3	Off	On	1
France Menu	Bulgaria Menu		Bit 4	Off	On	1
German menu	German menu		Bit 5	Off	On	1
Itality Menu	Itality Menu		Bit 6	Off	On	1
Russia Menu	Russia Menu		Bit 7	off	on	1
NVM option 4		74	OP4	0	1	114
Narrow-band sound PLL window			Bit 0	small	large	0
Power mode			Bit 1	standby	Last Memory	1

Service Adjustments

Item	Storage address	Display string	Range (Index value)		Default value
Geometry control		Bit 2	off	On	0
Logo		Bit 3	off	On	0
EHT tracking mode		Bit 4	Vertical	Vert. & EW	1
Search tuing mode sensitivity		Bit 5	Normal	Reduced	1
Menu half-tone		Bit 6	Off	On	1
Zoom function		Bit 7	off	on	0
NVM option 5	75	OP5	0	1	223
Sound system DK		Bit 0	Off	on	1
Sound system BG		Bit 1	Off	On	1
Sound system I		Bit 2	Off	On	1
CORING0		Bit 3	Off	On	1
CORING1		Bit 4	Off	On	1
AV3		Bit 5	off	On	0
Switch-off in vertical overscan		Bit 6	Undefined	Vert. overscan	1
Power on to last status		Bit 7	Off	On	1
NVM option 6	76	OP6	0	1	218
"No signal" OSD when no signal		Bit 0	off	On	0
Blue screen or black screen		Bit 1	Black	Blue	1
16:9 mode		Bit 2	off	On	0
Child lock (Lock local key)		Bit 3	Off	On	1
Top & bottom bar on Menu		Bit 4	Off	On	1
Hotel mode		Bit 5	Off	On	No use
Set "POC" bit when no signal		Bit 6	Off	On	1
Game		Bit 7	off	on	1
<i>Instruction</i>		OP6 generally fixed to 218			
NVM option 7	77	OP7	0	1	196
AV1		Bit 0	off	on	0
<i>Instruction</i>		Because of AV1 is back AV, if SCART needed, no back AV, need to set AV1 0.			
XX		Bit 1	0	1	0
TV and monitor out select		Bit 2	Monitor	TV	1
<i>Instruction</i>		Because the output of SCART always follow TV, when back AV is SCART, the value set to1.			
LISTEN PRESET		Bit 3	off	on	0
Power on always		Bit 4	See OP4 bit 1	Direct On	0
Noise Reduce Off		Bit 5	See Table 1		0
Noise Reduce On		Bit 6			1
NTSC-M Control switch		Bit 7	1(FM)	0(QSS)	1
TrueBass control	78	BASS	off	On	0
Comb-filter Control	79	COMB	Off	On	0

Service Adjustments

Item	Storage address	Display string	Range (Index value)		Default value
NICAM control	7A	NICA	Off	On	0
RGB Control	7B	RGB	Off	On	1
YUV Control	7C	YUV	Off	On	0
NTSC-M Control	7D	M	off	on	0
Direct Key “CLOCK”					
Logo edit (7 chars. & 2 lines)		Logo Text	English letter & number etc		
Instruction		The LOGO edit function will take effect when Bit3 in OP4 set 1, press key ‘VOL+/-’ to choose character, and press PROG+/- to choose ASC II charater			

Table 1 : Noise Reduce Setting for PAL

Noise Reduce On	Noise Reduce Off	OP7 Bit 5	OP5 Bit 6
2.7MHz	3.1MHz	0	0
2.7MHz	3.5MHz	1	0
3.1MHz	3.5MHz	0	1
3.1MHz	3.5MHz	1	1

* Remark : NTSC system preset to 2.7 -> 3.1MHz.