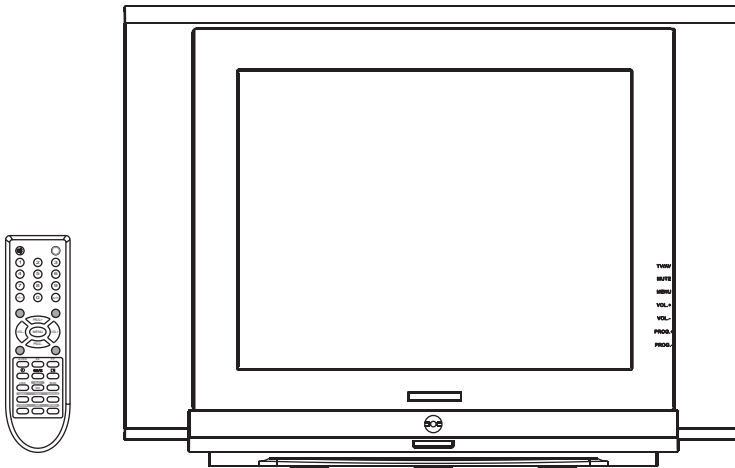


SERVICE MANUAL

3P52E CHASSIS



*Design and specifications are subject to change without prior notice.
(ONLY REFERENCE)*

ENGINEER BY: _____ CHECKED BY: _____ PPROVED BY: _____

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Safety Notice

SAFETY PRECAUTIONS

- 1:An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.
- 2:Comply with all caution and safety-related notes provided on the cabinet back, inside the cabinet, on the chassis or the picture tube.
- 3:When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, isolation resistor-capacitor networks etc.. Before returning any television to the customer, the service technician must be sure that it is completely safe to operate without danger of electrical shock.

X-RADIATION PRECAUTION

The primary source of X-RADIATION in television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emissions. For continued X-RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. Refer to this service manual, high voltage adjustment for specific high voltage limit. If high voltage exceeds specified limits, take necessary corrective action. Carefully follow the instructions for +B1 volt power supply adjustment, and high voltage check to maintain the high voltage within the specified limits.

PRODUCT SAFETY NOTICE

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by mark \triangle in the parts list and the schematic diagram designate components in which safety can be of special significance. It is particularly recommended that only parts designated on the parts list in this manual be used for component replacement designated by mark \triangle . No deviations from resistance wattage or voltage ratings may be made for replacement items designated by mark \triangle .

Technical specification

SUPPLY VOLTAGE : AC 90-260V 50/60Hz

1.	SYSTEM	PAL/NTSC/SECAM
2.	CHANNELS RECEIVED	0~199
3.	SCANNING	15625/15734Hz
	HORIZONTAL	
	VERTICAL	50/60Hz
4.	VISION INTERMEDIATE FREQUENCY	38.9 MHz
5.	SOUND INTERMEDIATE FREQUENCY	33.4 MHz (M)
6.	INTER-CARRIER FREQUENCY	4.5/5.5/6.0/6.5 MHz
7.	CHROMA IF FREQUENCY PAL	34.47 MHz
8.	ANTENNA INPUT IMPEDANCE	75 OHM
9.	CRT	14",21" FST/PURE

		<u>NORMAL</u>	<u>LIMIT</u>	<u>UNIT</u>
10.	VIDEO SENSITIVITY AT 30dB S/N	(ACCORDING TO CCEE)		
	VHF	45	≤48	dBuV
	UHF	43	≤51	dBuV
	(50% WHITE, 1KHz-50Hz, UNWEIGHTED, SC TRAPPED)			
11.	FM SOUND SENSITIVITY AT 30dB S/N	20	≤38	dBuV
12.	SYNCHRONIZING SENSITIVITY	16	≤26	dBuV
13.	AGC CHARACTERISTIC	65	≥60	
14.	SELECTIVITY	40	≥30	
15.	I.F. REJECTION	61	≥45	dB
16.	IMAGE REJECTION	62	≥45	dB
17.	AUDIO OUTPUT POWER 1kHz (10% THD)	≥3 x 2	W	
18.	MAXIMUM OUTPUT POWER	>5x2		
19.	THD SUPPLYING 1KHz 500mW TO SPKR	0.3	≤0.5	%
20.	MINIMUM VOLUME HUM	5	≤10	mVrms
21.	MAX. BRIGHTNESS 100% WHITE, CONTROLS MAX	<u>NORMAL</u> 151	<u>LIMIT UNIT</u> ≥80	cd/m ²
22.	H SYNC. PULL IN	+816, -961	≥400 ≤-400	Hz
23.	V.SYNC. PULL IN	+9, -11	45-64	Hz
24.	OVERSCAN	94	88-96	%
25.	COLOUR SENSITIVITY	24	≤35	dBuV
26.	LINEARITY PAL			
	HORIZONTAL	7/8	≤10/12	%
	VERTICAL	3/5	≤8/15	%
27.	RESOLUTION			
	HORIZONTAL	370	≥300	LINES
	VERTICAL	500	≥450	LINES
28.	PICTURE POSITION			
	HORIZONTAL	-5, +5	≥-5 ≤+5	mm
	VERTICAL	-4, +4	≥-6 ≤+6	mm
29.	CONVERGENCE			
	C	0.3	≤0.4	mm
	T, B, R, L	1.0	≤1.6	mm
	TR, TL, BR, BL	1.6	≤2.0	mm
30.	WHITE BALANCE (9300°K, LOW BRI <10cd/m ² , HI BRI >80cd/m ²) (SET BURST OFF OF PATTERN GENERATOR OR SET COLOUR SAT. TO MIN MEASURED BY MINOLTA CA-100)			
		0.260	x:0.288±0.015	
		0.302	y:0.298±0.015	
31.	HIGH VOLTAGE (decided by CRT Spec.)	22.5	≤27	KV
32.	X-RAY RADIATION	0.2	≤0.2	MR/HR

Technical specification

33.	REMOTE CONTROL RECEPTION (30 DEGREES)	8	≥5	m
34.	VIDEO INPUT (AV)	1	1V±3dB	Vp-p
35.	RGB INPUT (REFER TO EN50049 SCART STANDARD)	0.7	0.7V±3dB	
36.	AUDIO INPUT (REFER TO EN50049 SCART STANDARD)	0.5	0.35-0.75	Vrms
37.	VIDEO OUTPUT (REFER TO EN50049 SCART STANDARD)	1	1V±3dB	Vp-p
38.	AUDIO OUTPUT		0.5	0.5(-0.1+0.3)Vrms
39.	COLOUR LEVEL (RED CATHODE, STANDARD PICTURE MODE, COLOUR BAR TEST PATTERN)	90	≥80	%
40.	POWER CONSUMPTION		54	≤ 90 W
41.	STANDBY POWER CONSUMPTION (AT 220V AC)	6	≤ 3	W
42.	TELETEXT SENSITIVITY	44	≤50	dBuV
43.	FREQUENCY RESPONSE (1 KHz = 0dB, REF : 1.0V)	100Hz	+1.5~+8.9	+3, -6 dB
(TBC)		10KHz	-0.9~-20	+3, -6 dB
		<u>NORMAL</u>	<u>LIMIT</u>	<u>UNIT</u>
44.	DIELECTRIC STRENGTH TEST (3 KV Vrms 2SEC)	--	≤6	mArms
45.	OPERATING WORKING VOLTAGE RANGE	82-264	84-260	V
46.	AFC PULL IN RANGE	+2.2,-1.75	≥+1 ≤-0.75	MHz
43.	TV/AV CROSSTALK (REF : 2W) (WEIGHTED DIN NOISE)	45	≥40	dB
44.	PICTURE MODE			
	STANDARD:			Half Contrast, Half Bright.
	SOFT:			1/3CONTRAST, 1/3 Bright.
	RICH:			MAX Contrast, Half Bright.
	CUSTOM:			PESONAL PREFERENCE.

TEST CONDITIONS :

TEMPERATURE : 23°C ±5°C

HUMIDITY : 50% ±20

OPERATING VOLTAGE : AC220 50Hz Vrms±5V

PICTURE MODULATION DEPTH : 87.5%

SOUND MODULATION DEPTH : 100%

PICTURE TO SOUND RATIO : 10dB

VIDEO REFERENCE OUTPUT AT RED GUN : 25 Vp-p

AUDIO REFERENCE OUTPUT AT SPEAKER : 1 W

ANTENNA INPUT IMPEDANCE : 75 OHM UNBALANCED

WHITE BALANCE CHECKED BY MINOLTA CA-100

ELECTRICAL SPECIFICATION

FEATURES:

- OPERATION ON AC100-240V 50/60Hz MAIN SUPPLY
- SYSTEM: PAL/SECAM/NTSC BG/DK/I/M NTSC PLAYBACK
- 200 OR 256 PROGRAMMES MEMORY
- FULL ON SCREEN DISPLAY
- BLUE SCREEN DISPLAY
- 180 MINUTES SLEEP TIMER
- FULL AUTO PROGRAM

Technical specification

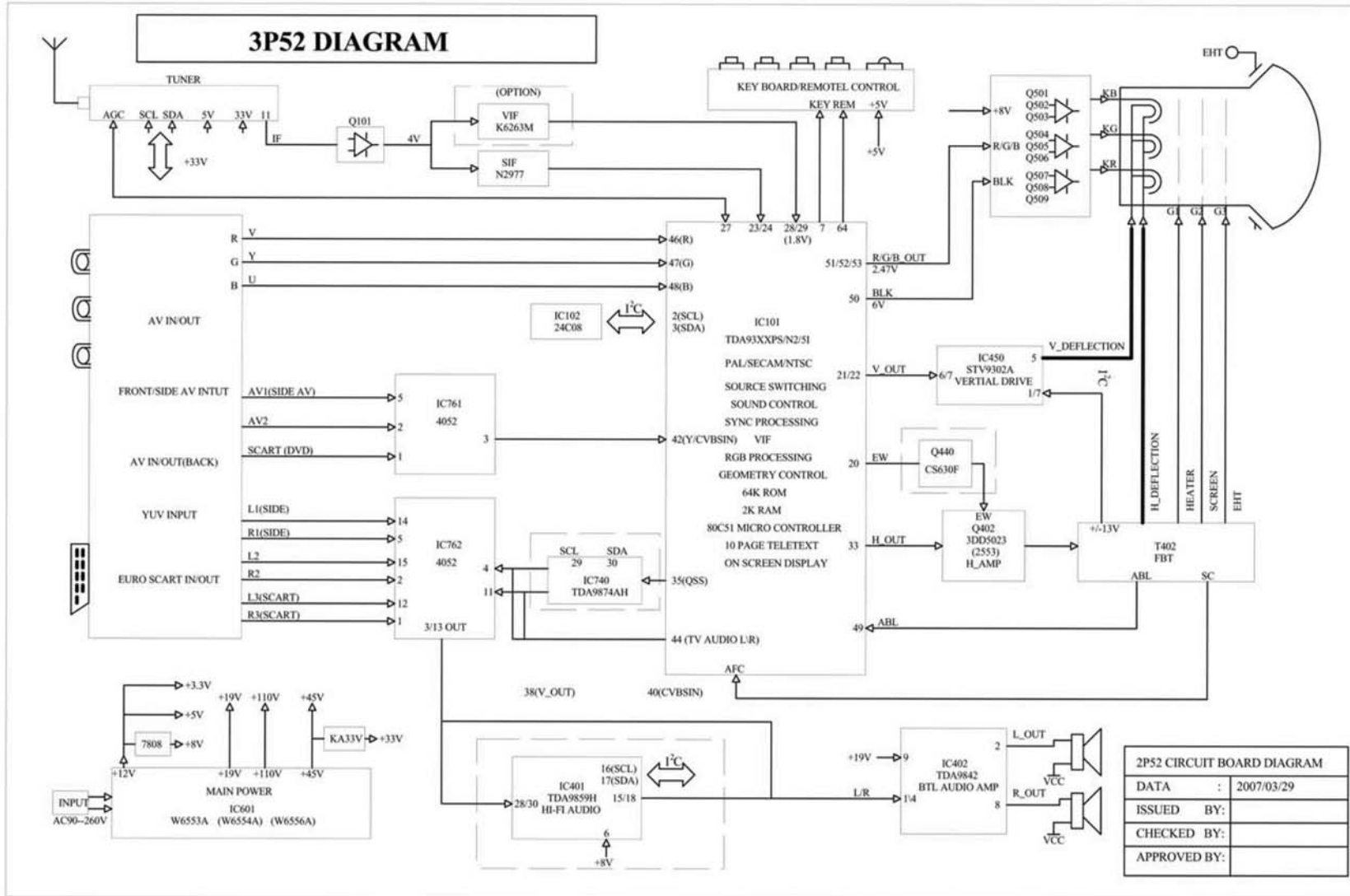
- AV INPUT + 1 FRONT AV INPUT (OPTION)
- BLACK LEVEL STRETCH
- TIME SETTING
- CHILD LOCK

GENERAL SPECIFICATION:

- | | |
|--------------------------------------|--------------------------------------------------|
| 1、 TV SYSTEM : | PAL-BG/DK/I , SECAM-BG/DK , NTSC-M |
| 2、 RECEIVE FREQUENCY COVERAGE: | 45.15MHz -863.25MHz |
| 3、 INTERMEDIATE FREQUENCIES | |
| PICTURE I.F.: | 38.9MHz |
| CHROMA SUBCARRIER: | 34.47MHz/35.32MHz |
| MONO SOUND I.F.: | FM33.4MHz/32.4MHz/32.9MHz/34.4MHz |
| 4、 ANTENNA IMPEDANCE: | 75 OHM BALANCED |
| 5、 TUNING SYSTEM: | FREQUENCY SYNTHESISED WITH 200 PROGRAMMES MEMORY |
| 6、 POWER SOURCE: | AC90-260V 50/60Hz |
| 7、 LED INDICATORS: | WORKING ON OR STANDBY |
| 9、 CONTROLS ON TV SET | |
| (A) FRONT PANEL | |
| - MAIN POWER | SWITCH |
| - PROG+/- | SOFT TOUCH |
| - VOL+/- | SOFT TOUCH |
| - MENU | SOFT TOUCH |
| - SLEEP | SOFT TOUCH |
| - MUTE | SOFT TOUCH |
| -AV/TV | SOFT TOUCH |
| - 1 SET AV INPUT SOCKET(OPTION) | |
| (B)BACK PANEL | |
| - 1 SET AV INPUT SOCKET | |
| - 1 EURO SCART | |
| 10、 REMOTE CONTROL | |
| 1. POWER(STAND BY) BUTTON | |
| 2. SOUND SYSTEM BUTTON | |
| 3. MUTE BUTTON | |
| 4. PROGRAM+/- BUTTON | |
| 5.VOLUME+/- BUTTON | |
| 6. 0-9.--/--PROGRAM SELECT BUTTON | |
| 7. PICTURE MODE (P.P) BUTON | |
| 8. RECALL BUTTON | |
| 9. SLEEP TIMER BUTTON | |
| 10. SOUND MODE BUTTON | |
| 11. Q. VIEW BUTTON | |
| 12. MENU BUTTON | |
| 13. AV BUTTON | |
| 14. TELETEXT SHORTCUT BUTTON(REDD) | |
| 15. TELETEXT SHORTCUT BUTTON(GREEN) | |
| 16. TELETEXT SHORTCUT BUTTON(BLUE) | |
| 17. TELETEXT SHORTCUT BUTTON(YELLOW) | |

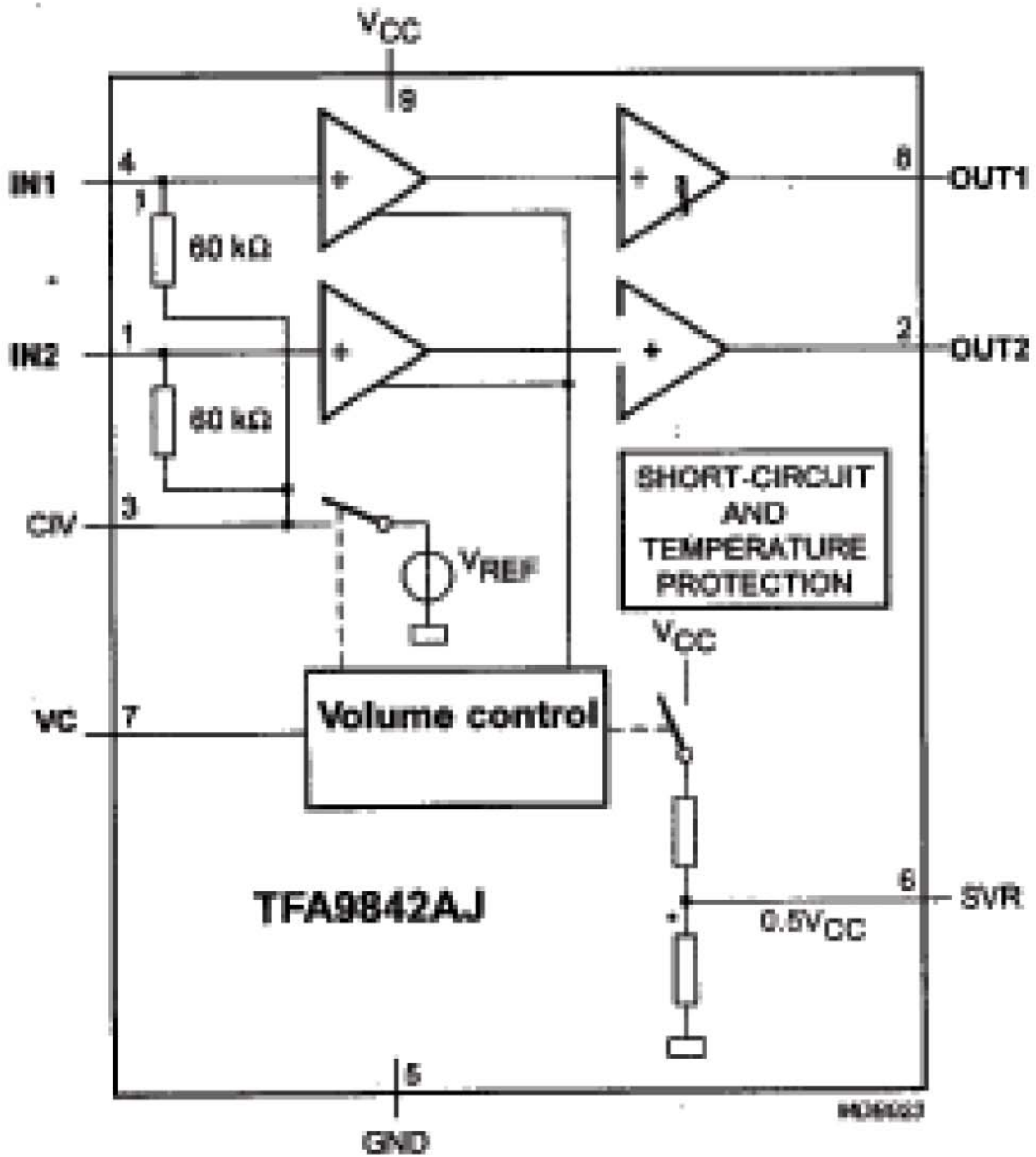
Technical specification

18. CLOCK BUTTON	
19. BATTERY COMPARTMENT LID(AT THE BACK SIDE OF REMOTE CONTROL)	
11. ANTENNA INPUT:	75 OHM AERIAL JACK
12. AV INPUT:	RCA SOCKET SCART(OPTION)
13. HAND SET POWER SUPPLY:	BATTERY 3V(UM-3/R6/AAA) × 2
14. HAND SET DIMENSIONS(MM):	60(W) × 200(L) × 24(T)mm
15. HAND SET WEIGHT:	100g(APPROX.)
16. AUDIO OUTPUT:	
17. SPEAKER:	
18. POWER CONSUMPTION:	
19. COLOUR PICTURE TUBE:	
20. DIMENSIONS(MM):	
21. WEIGHT:	
22. PACKING:	1SET PER 1 GIFTBOX
23. ACCESSORIES:	OWNER'S MANUAL IN ENGLISH WITH BRAND NAME AND WITH MODE NO. REMOTE
HANDSET	
24. DIELECTRIC STRENGTH TEST (3KV rms 60 SEC)	≅ 6MA rms
25. OPERATING TEMPERATURE RANGE:	10 TO 40°C
26. AC LINE CORD PLUG:	VDE TYPE OR SUBJECT TO CUSTOMER REQUEST
27. SAFETY :	IEC-60065
28. TELETEXT:	PAN-EUROPEAN, CYRILLIC2, IRANIAN, ARABIC



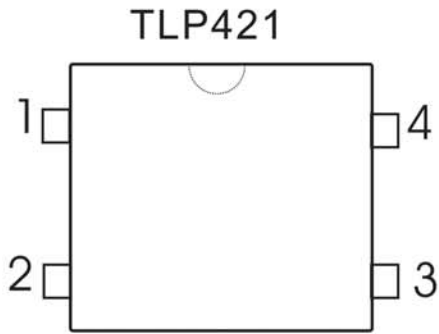
IC BLOCK DIAGRAM

IC 101 (2Channel Audio Amplifier) TFA9842AJ



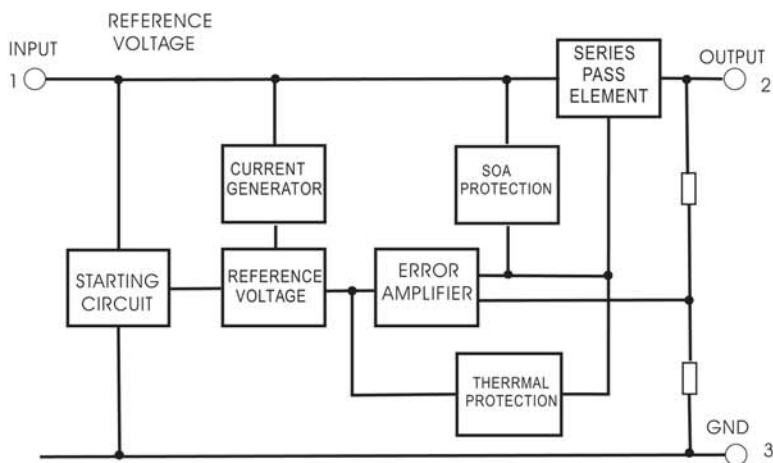
IC BLOCK DIAGRAM

IC 602 (Photo Transistor) TLP421



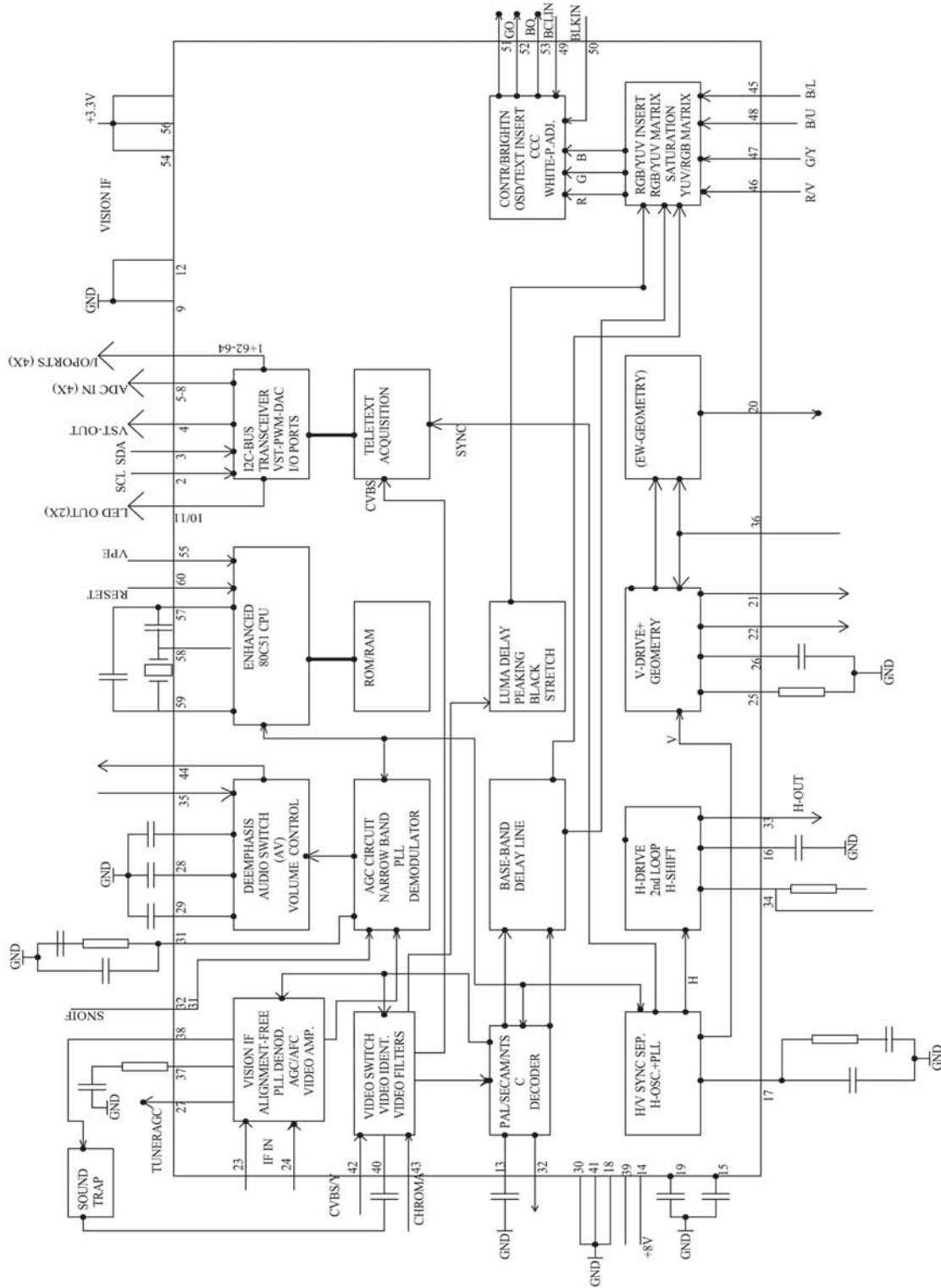
- 1: ANODE
- 2: CATHODE
- 3: EMITTER
- 4: COLLECTOR

IC 652 (Regulators) L7808Series

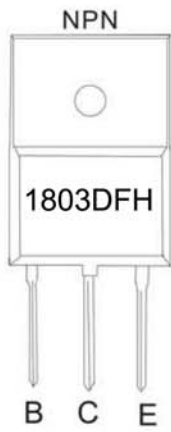
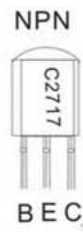
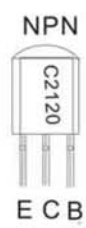
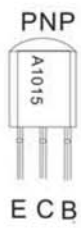
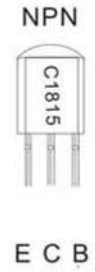
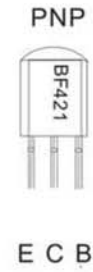
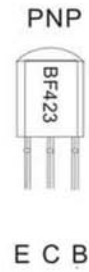
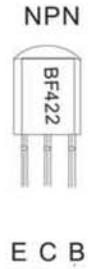
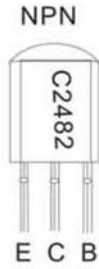
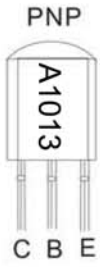


IC BLOCK DIAGRAM

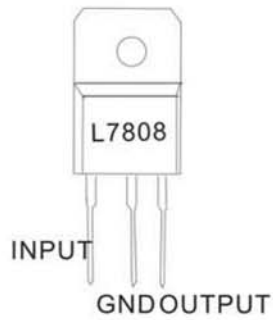
IC 701 (TV Signal Processor) TDA9381



TRANSISTOR MARK



INPUT



Service Adjustments

1、 Please notice the following before debug and equipment: |

- 1-1 The main power is 90~260V/50/60Hz , Please be careful when you debug and equip.
- 1-2 Don't short any two soldering points, which should not be shorted and don't touch any components, which should not be touched.
- 1-3 Please pull out plug before equipment.
- 1-4 For safety reasons, all components equipped or replaced should be identical with BOM.
- 1-5 Must be warm up for 30 minutes or more and degauss CRT thoroughly with demagnetizer before alignment.
- 1-6 The data of EEPROM must be stored before the adjustment for main chassis.

2、 Tools and equipments for adjustment:

- 2-1 small " - " screwdriver
- 2-2 screwdriver without inductance
- 2-3 Pattern Generator
- 2-4 DC Regulated power supply
- 2-5 Digital Voltmeter
- 2-6 Sweep Signal Generator
- 2-7 20MHz 2-channel Oscilloscope
- 2-8 Signal condition

Service Adjustments

3P52E ADJUST MENU

1.FACTORY MODE:

- (1) Assembly line adjust mode: Press MENU P.P S.S and SLEEP keys on the remote to enter this mode and press "DISPLAY" to exit.
- (2) Press digital keys to enter every adjust page, use PROG+/- keys to pick adjust items, use VOL+/- keys to adjust the value.
- (3) 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, its 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 5VAM to obtain picture's vertical re-display ratio more than 90% .
- c. Receive 60Hz cross hatch signal, do as (1).(2) again.
- d. If necessary, fine adjust above items.
- e. 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)
- f. Receive 60Hz cross hatch signal, repeat above a,b.

The Adjustments above should be done according to whether it has RGB or YUV function.

(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., $\boxed{+}$, 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 INITIALIZTION

(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 “MENU P.P S.S and SLEEP” 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>Direct 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 initialize. 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
Direct 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.		
Direct 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
Direct 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	
<i>Instruction</i>		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 (<i>Direct Key "Red"</i>)		WPR	0-63	31	
White point G (<i>Direct Ke"Green"</i>)		WPG	0-63	31	
White point B (<i>Direct Key "Blue"</i>)		WPB	0-63	45	
<i>Instruction</i>		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	
<i>Instruction</i>		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	
<i>Instruction</i>					
Direct Key "4"					
AGC take-over		AGC	0-63	27	
UOC Volume		VOL	0-63	56	
<i>Instruction</i>		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	
<i>Instruction</i>		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	
<i>Instruction</i>		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
<i>Instruction</i>					
Direct Key "5"					
NVM option 1	71	OP1	0	1	18
VG2 Alignment mode		Bit 0	AVG	VSD	0
<i>Instruction</i>		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
Italy Menu	Italy 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 to 1.			
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		
<i>Instruction</i>		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.

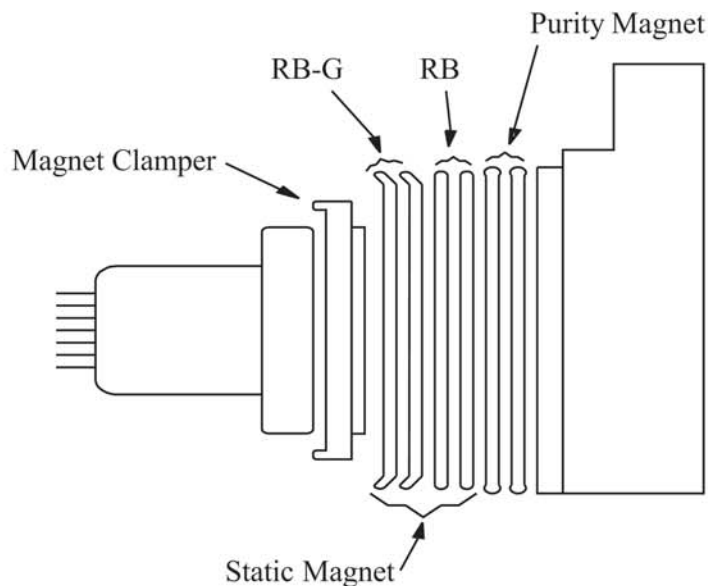
Purity and Convergence Adjustment

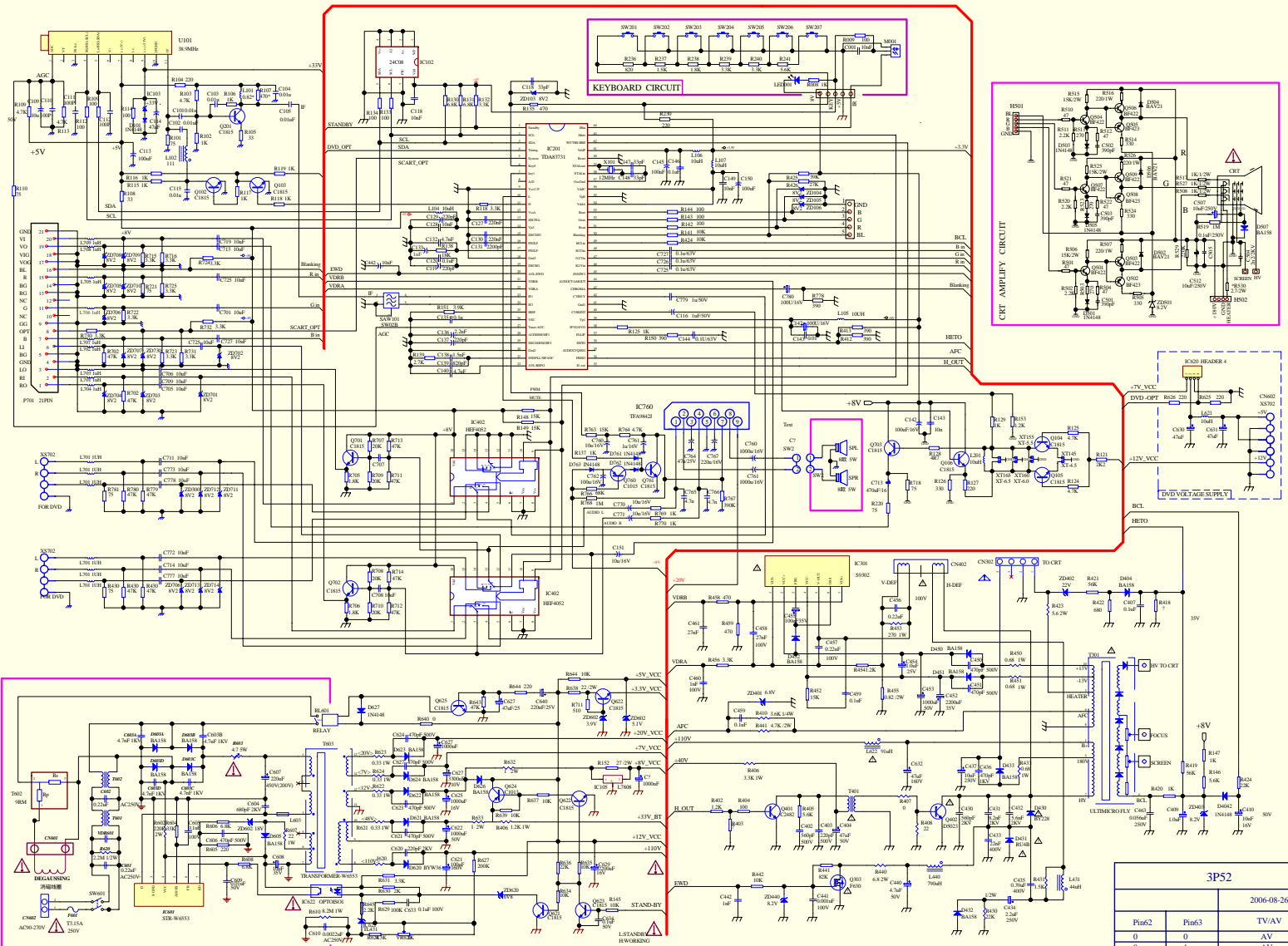
COLOR PURITY ADJUSTMENT

- (1) Before color purity adjustment, warm up the TV set over 15 minutes and fully degauss.
- (2) Receive pure white signal in AV status and set the TV receiver dynamic.
- (3) Go to factory mod MENU2. After write down the values of R-BIAS and B-BIAS, set the values of R-BIAS and B-BIAS zero.
- (4) Loosen the clamp screw of the deflection yoke and pull the deflection yoke towards color purity Magnetic loop.
- (5) Adjust color purity magnetic loop to make the green area at the center of CRT screen.
- (6) Slowly push the deflection yoke toward the front of CRT and set it where a uniform green field is Obtained. Tighten the clamp screw of the deflection yoke.
- (7) Restore the values of R-BIAS, G-BIAS AND B-BIAS.

CONVERGENCE ADJUSTMENT

- (1) Receive a dotted pattern. Set the TV receiver dynamic.
- (2) Loosen the convergence magnet clamp and align red with blue dots at the center of the screen by rotating (R,B) static convergence magnets.
- (3) Align Red/Blue with green dots at the center of the screen by rotating (RB-G) static convergence magnet.
- (4) Remove the DY wedges and slightly tilt the deflection yoke horizontally and vertically to obtain the good





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2006-08-26

Pin62	Pin63	TV/AV
0	0	TV
0	0	AV
1	0	AV
1	1	TV