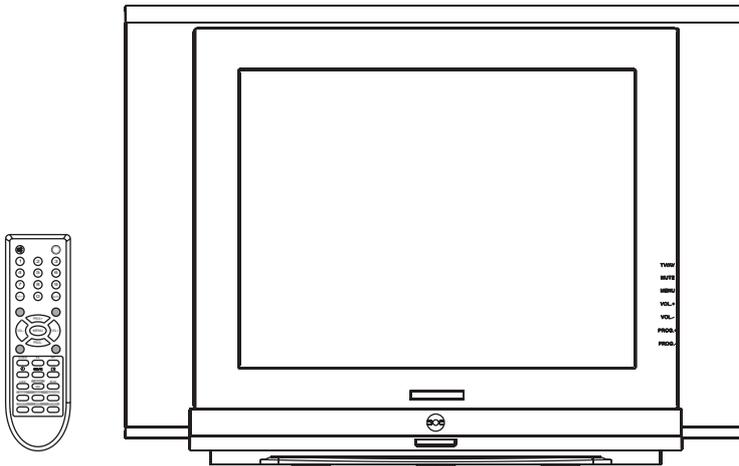


# SERVICE MANUAL

## 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

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### 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 <sup>2</sup>
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 <sup>2</sup> , HI BRI >80cd/m <sup>2</sup> ) (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 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: SOFT: RICH: CUSTOM:			Half Contrast, Half Bright. 1/3CONTRAST, 1/3 Bright. MAX Contrast, Half Bright. 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

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

## **GENERAL SPECIFICATION:**

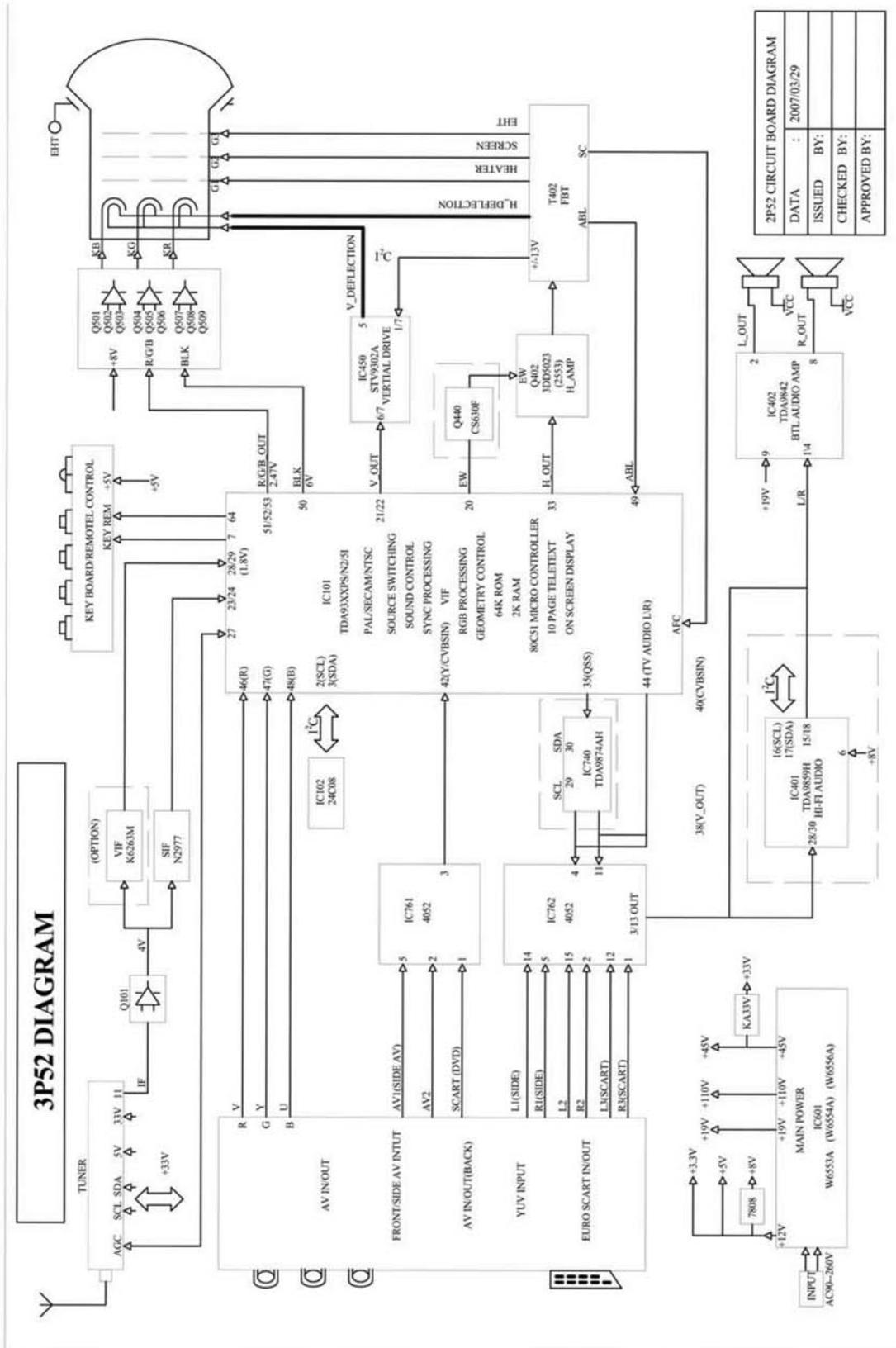
- |                                     |                                                  |
|-------------------------------------|--------------------------------------------------|
| 1、 TV SYSTEM :                      | PAL-BG/DK/I , SECAM-BG/DK , NTSC-M               |
| 2、 RECEIVE FREQUENCY COVERAGE:      | 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. TELETXT SHORTCUT BUTTON(RED)    |                                                  |
| 15. TELETXT SHORTCUT BUTTON(GREEN)  |                                                  |
| 16. TELETXT SHORTCUT BUTTON(BLUE)   |                                                  |
| 17. TELETXT SHORTCUT BUTTON(YELLOW) |                                                  |

# Technical specification

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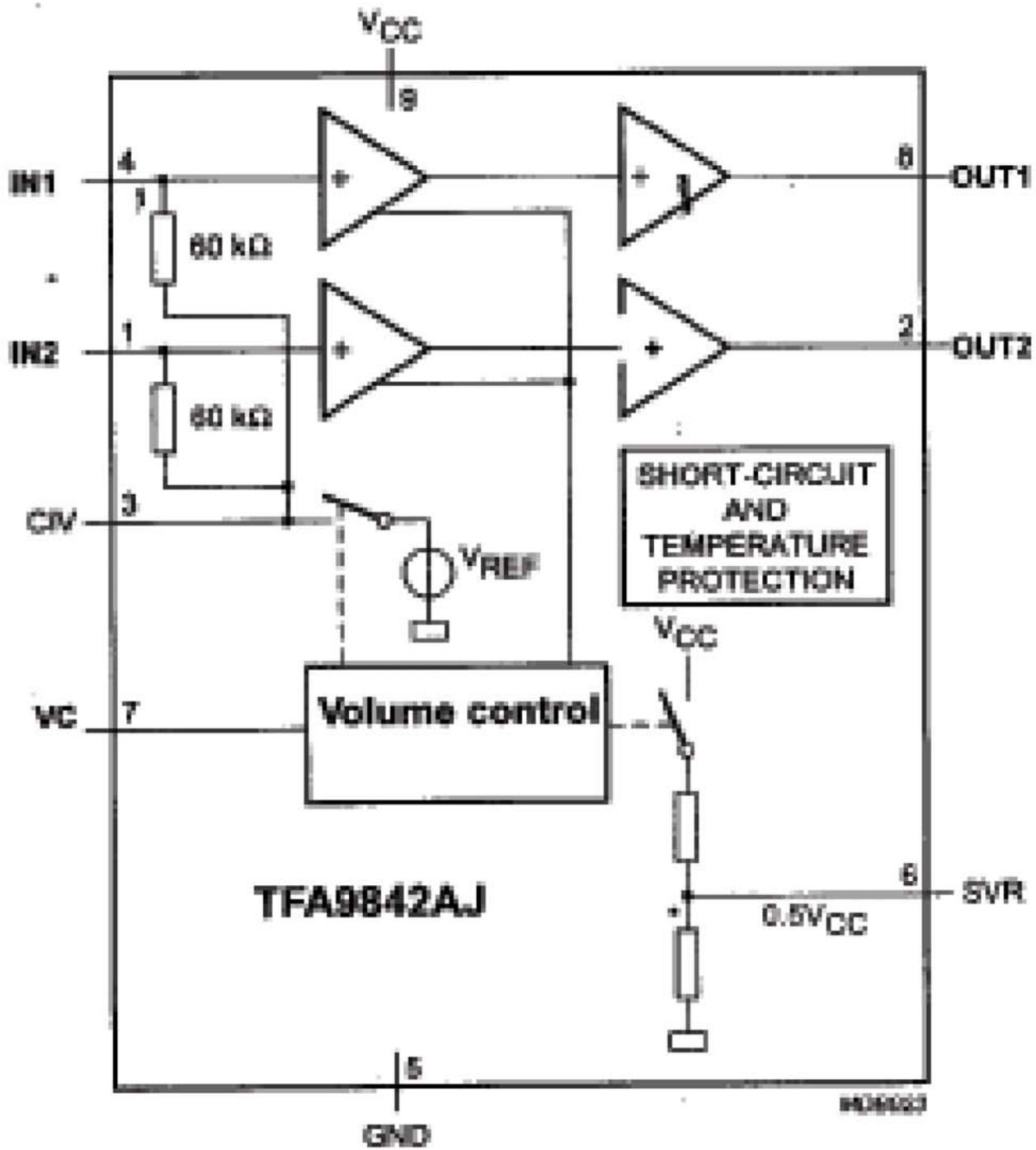
18. CLOCK BUTTON	
19. BATTERY COMPARTMENT LID(AT THE BACK SIDE OF REMOTE CONTROL)	
11. ANTENNA INPUT:	75 OHM AERIAL JACK
12. AV INPUT:	RCA SOCKET SCART(OPTION)
13. HAND SET POWER SUPPLY:	BATTERY 3V(UM-3/R6/AAA) × 2
14. HAND SET DIMENSIONS(MM):	60(W) × 200(L) × 24(T)mm
15. HAND SET WEIGHT:	100g(APPROX.)
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

# Chassis Block Diagram



# IC BLOCK DIAGRAM

IC 101 (2Channel Audio Amplifier) TFA9842AJ

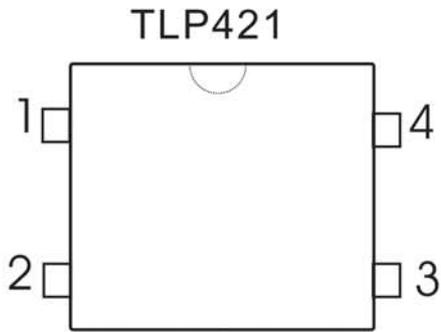




# IC BLOCK DIAGRAM

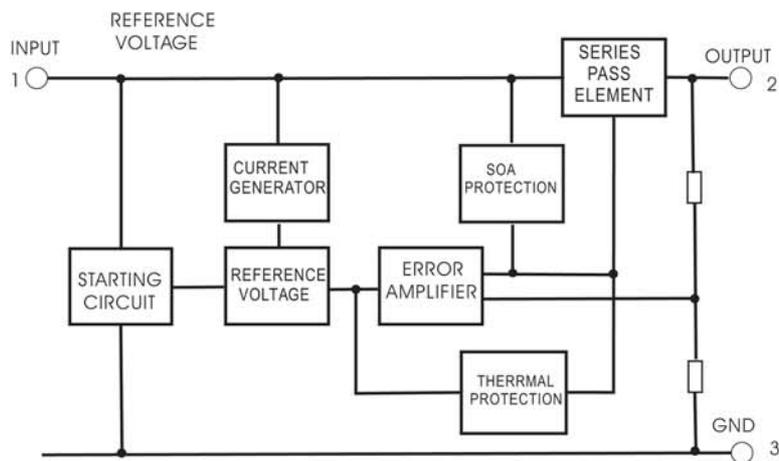
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## IC 602 (Photo Transistor ) TLP421



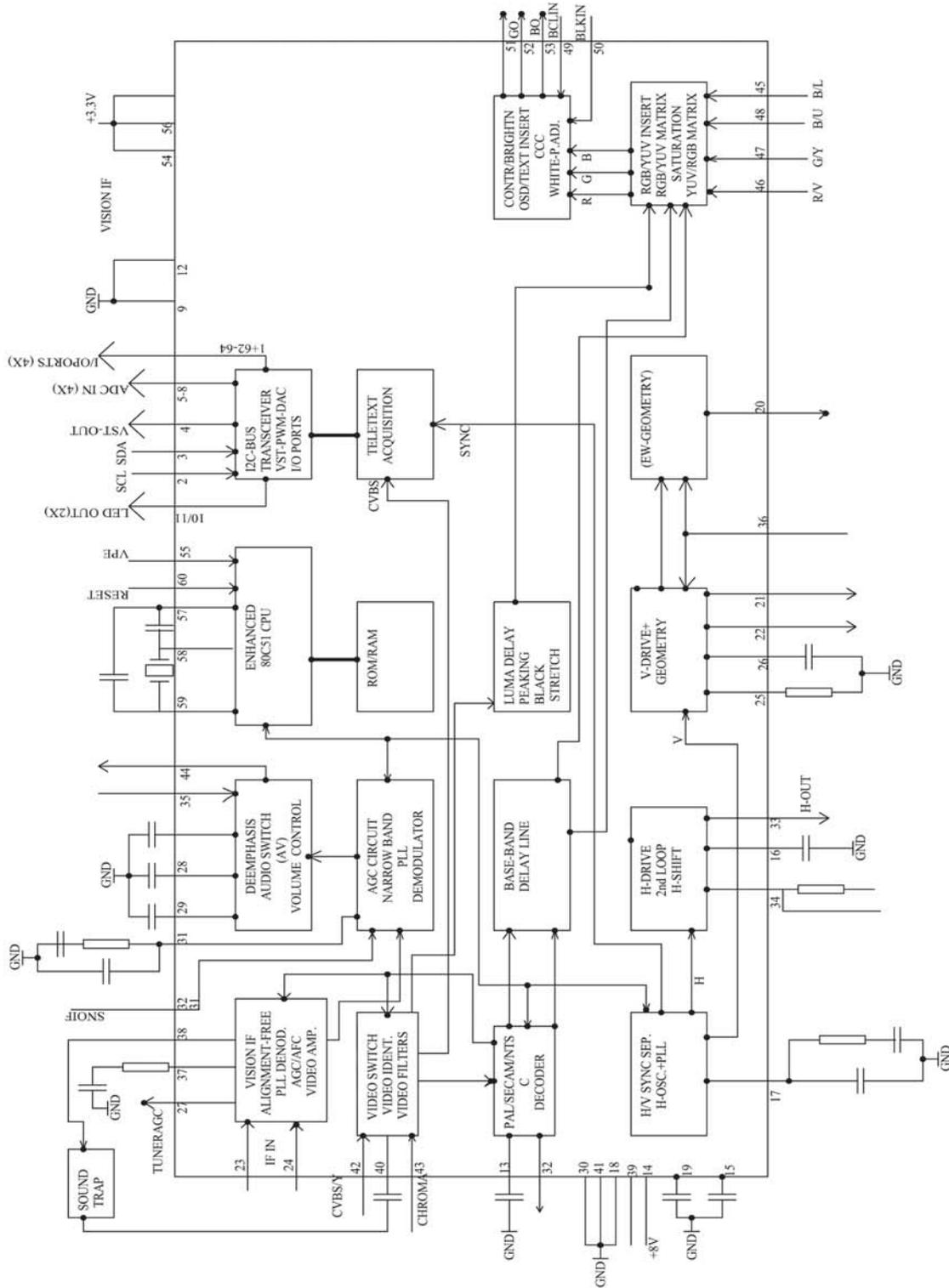
- 1: ANODE
- 2: CATHODE
- 3: EMITTER
- 4: COLLECTOR

## IC 652 (Regulators) L7808Series



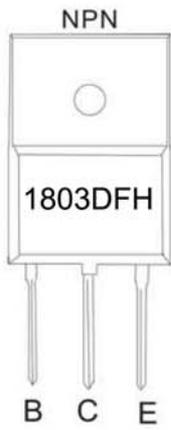
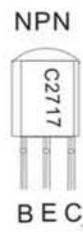
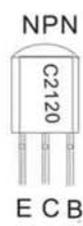
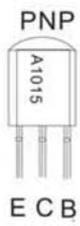
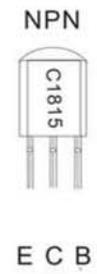
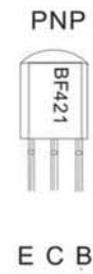
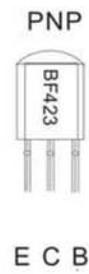
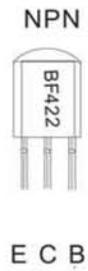
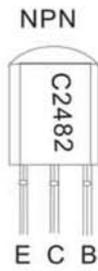
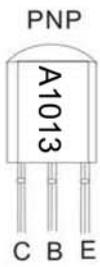
# IC BLOCK DIAGRAM

## IC 701 ( TV Signal Processor) TDA9381

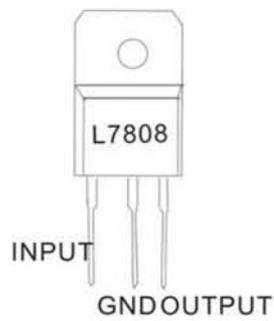


# TRANSISTOR MARK

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INPUT

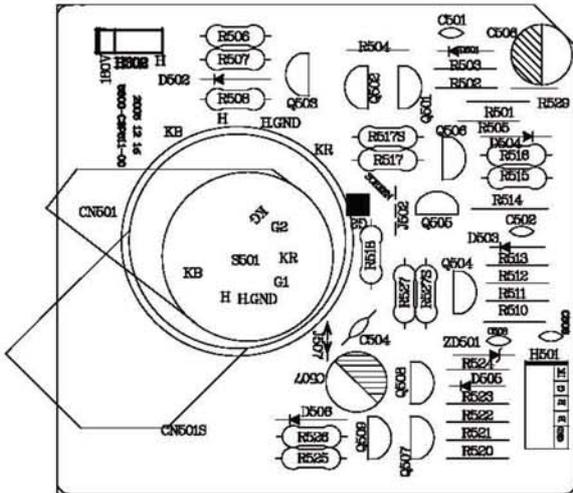




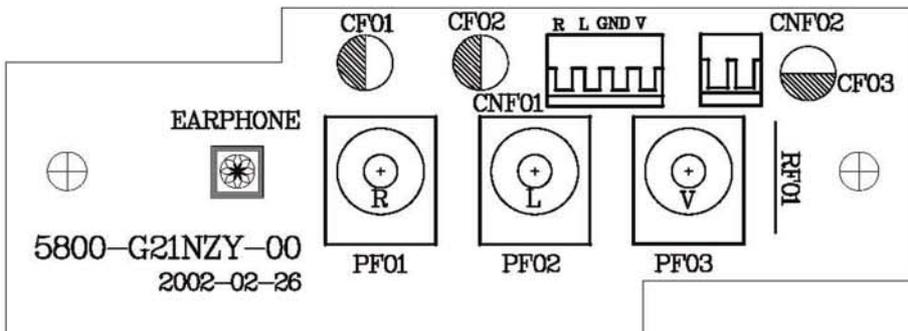


# CRT, SIDE AV & CONTROL PCB TOP LAYER

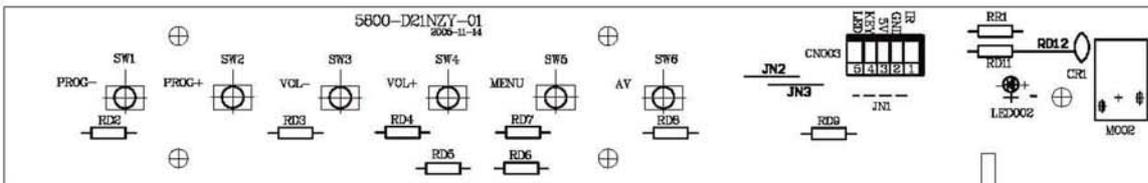
## CRT PCB LAYER



## SIDE AV PCB TOP LAYER



## CONTROL PCB TOP LAYER



# Service Adjustments

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## 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(KEY2 ):**

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 shoule 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.,  , 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 1<sup>st</sup> can set the customer’s name etc, and the 2<sup>nd</sup> 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 <b>BUSY</b> " 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
<b>Direct key "0"</b>				
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.		
<b>Direct key "1"</b>				
Horizontal paralellogram 50Hz	29	5PAR	0-63	31
Horizontal bow 50Hz	2A	5BOW	0-63	31
<i>Instruction</i>		The above value be adjusted $\pm 10$ 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 $\pm 10$ 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
<b>Direct key "2"</b>				
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.			
<b>Direct Key "3"</b>					
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>					
<b>Direct Key "4"</b>					
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	
<b>Direct Key "6"</b>					
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	
<b>Direct Key "7"</b>					
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>					
<b>Direct Key "5"</b>					
<b>NVM option 1</b>	<b>71</b>	<b>OP1</b>	<b>0</b>	<b>1</b>	<b>18</b>
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
<b>NVM option 2</b>	<b>72</b>	<b>OP2</b>	<b>0</b>	<b>1</b>	<b>11</b>
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
<b>NVM option 3</b>	<b>73</b>	<b>OP3</b>	<b>0</b>	<b>1</b>	<b>255</b>
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
<b>NVM option 4</b>	<b>74</b>	<b>OP4</b>	<b>0</b>	<b>1</b>	<b>114</b>
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
<b>NVM option 5</b>	<b>75</b>	<b>OP5</b>	<b>0</b>	<b>1</b>	<b>223</b>
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
<b>NVM option 6</b>	<b>76</b>	<b>OP6</b>	<b>0</b>	<b>1</b>	<b>218</b>
"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			
<b>NVM option 7</b>	<b>77</b>	<b>OP7</b>	<b>0</b>	<b>1</b>	<b>196</b>
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	<b>See Table 1</b>		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
<b>Direct Key "CLOCK"</b>					
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.

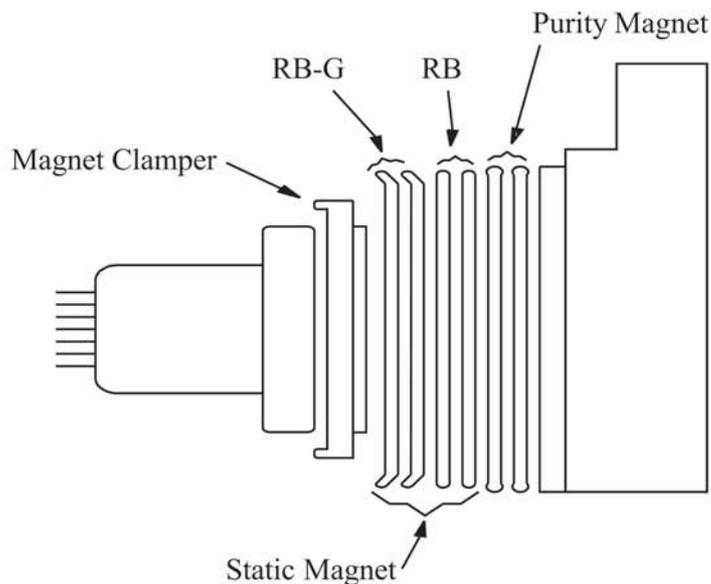
# Purity and Convergence Adjustment

## 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

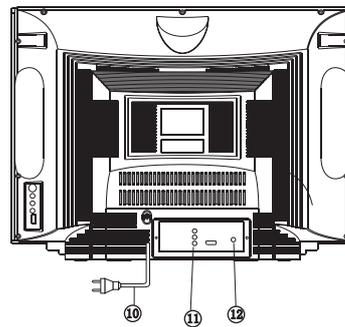
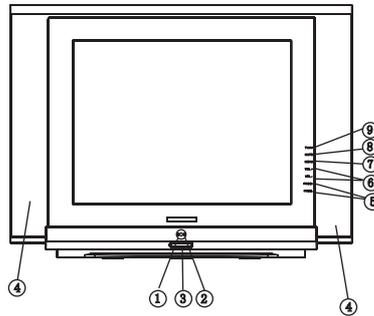


# Control Location

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## CONTROL PANEL BUTTONS

1. Main Switch
2. Power Indicator
3. Remote Sensor
4. Speakers
5. Program Down / Up Button
6. Volume Down / Up Button
7. Menu Button
8. Mute Button
9. TV/AV Button
10. AC Power Cord
11. AV In2 (Option)  
AV Out (Option)  
YUV (Y, Cb, Cr) In (Option)  
21 PIN SCART (Option)
12. Antenna Input Socket (75 Ohm)



### **Power Connection**

Only use the adaptor supplied with this product, connect the AC plug to the socket at the back of the TV. This TV must be operated only from the type of power source indicated on the marking label (AC150-260V 50/60 Hz).

### **Rear View of the TV Set**

#### **Video And Audio Input/ Output Terminals**

1. Video / Audio input for playback for VCR.
2. Video / Audio output for TV program.

#### **Connections To The Antenna Input Socket**

Connect the aerial or cable TV plug to the Antenna Input Socket located at the back of the TV and connect the cable plug coming out from the TV out socket located at the devices (VCR, DVB, etc.) to this socket as well.

# Operation Instructions

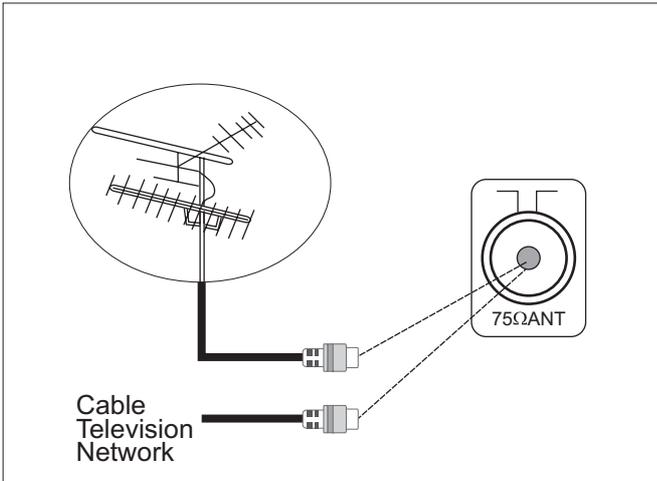
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## **SAFETY PRECAUTIONS**

1. Power-supply cords should be routed so that they are not likely to be walked on or nagged by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product. When the power cord or plug is damaged or frayed, unplug the TV from the wall outlet and refer servicing to your authorized dealer.
2. Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
3. Unplug the TV product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. If the TV should be dropped and/ or broken, it could result in an injury, and continued use could result in fire or electrical shock. Immediately turn off the power switch, disconnect the power plug from the power outlet and contact your authorized dealer.
5. Do not insert liquids or foreign object. Penetration of liquids or foreign objects could result in fire or electrical shock.
6. Do not attempt to service the TV yourself. Opening or removing covers can expose you to high voltage and other dangerous conditions. Refer all servicing to your authorized dealer.
7. Do not place the TV on an unstable shelf, slant or vibrant surface. The TV may fall, causing serious injury to human and serious damage to the appliance.
8. Avoid dusty places, since accumulated dust inside the chassis may cause failure of the TV when in high humidity environment.
9. Do not place the TV near water. For example, a bathroom, a beach, etc.
10. Do not obstruct the ventilation openings of the equipment with items such as newspapers, tablecloth, etc.
11. Do not place the TV on a carpet, sofa or bedding.
12. Keep the TV away from heat sources such as radiators, heaters, stoves and other heat generating products.
13. Do not place the TV in a "built-in" enclosure, unless proper ventilation is provided.
14. Do not place flower vases, pots, cups, cosmetics, liquids such as water, etc on or around the TV.
15. Choose a place where light (artificial or sunlight) does not shine directly on the screen.
16. If the TV does not work properly and you are unable to restore normal operation by following the "troubleshooting" section in your instruction manual, do not attempt any further adjustment. Unplug the TV and consult your authorized dealer.
17. Do not touch the controls other than those described in the operating instructions as improper adjustment of other controls may result in damaging. Please ask your service authorized dealer to restore the TV to normal operation.
18. For added protection for this TV during a lightning storm, unplug it from the wall outlet and disconnect the antenna or cable system.
19. If a strange sound or smell gives off from the TV, please turn off and unplug it from the wall outlet, then refer to authorized dealer.
20. To prevent fire, never place any type of candle or naked flames on the top or near the TV.
21. Avoid any kind of impact to the TV. Be special careful not to damage the screen face.
22. If the TV is to remain unused for a period of time. Turn off and unplug it from the wall outlet.

# Operation Instructions

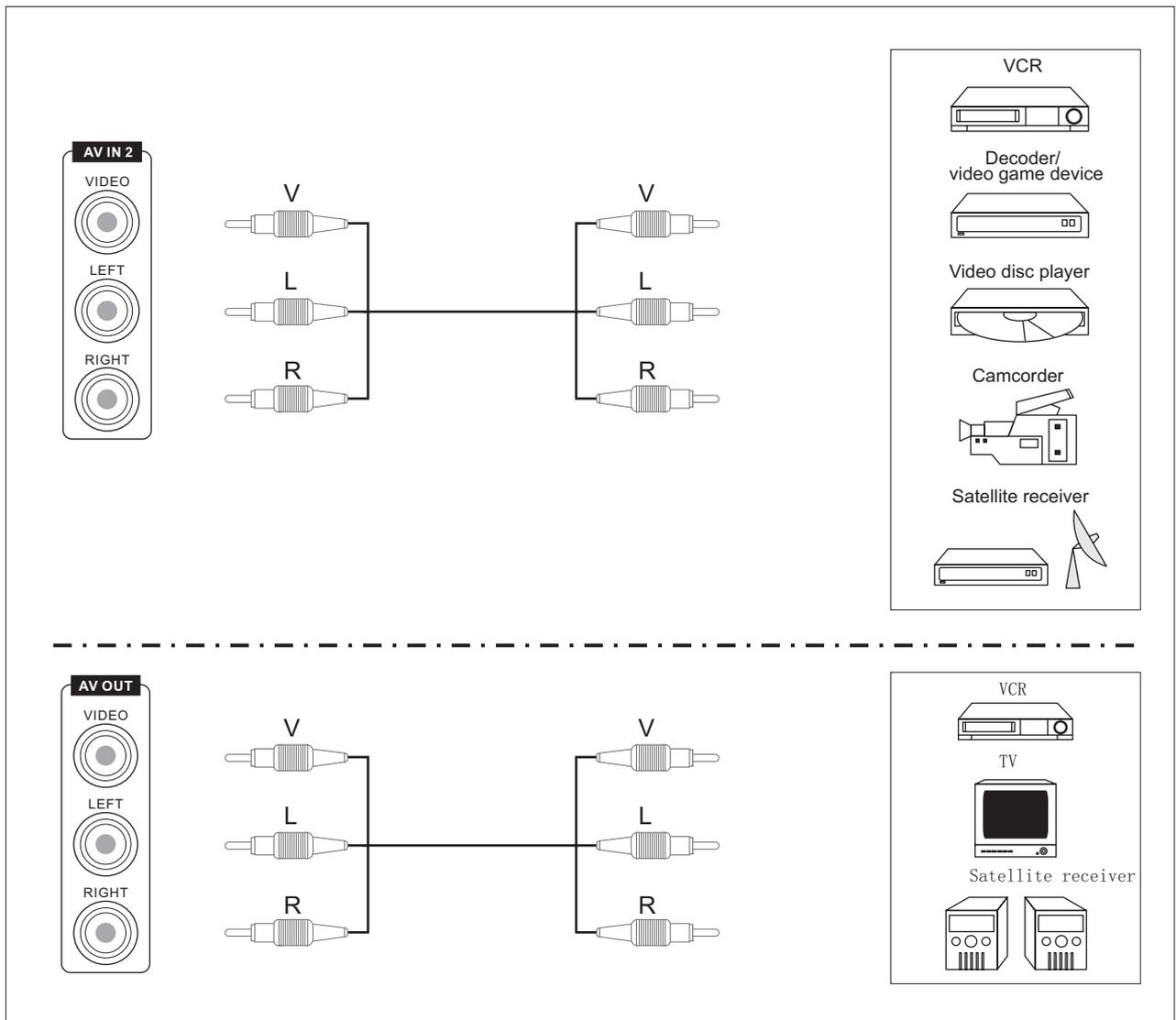
## Connecting the Aerial(or Cable Television Network)



To view television channels correctly, a signal must be received by the set from one of the following sources:

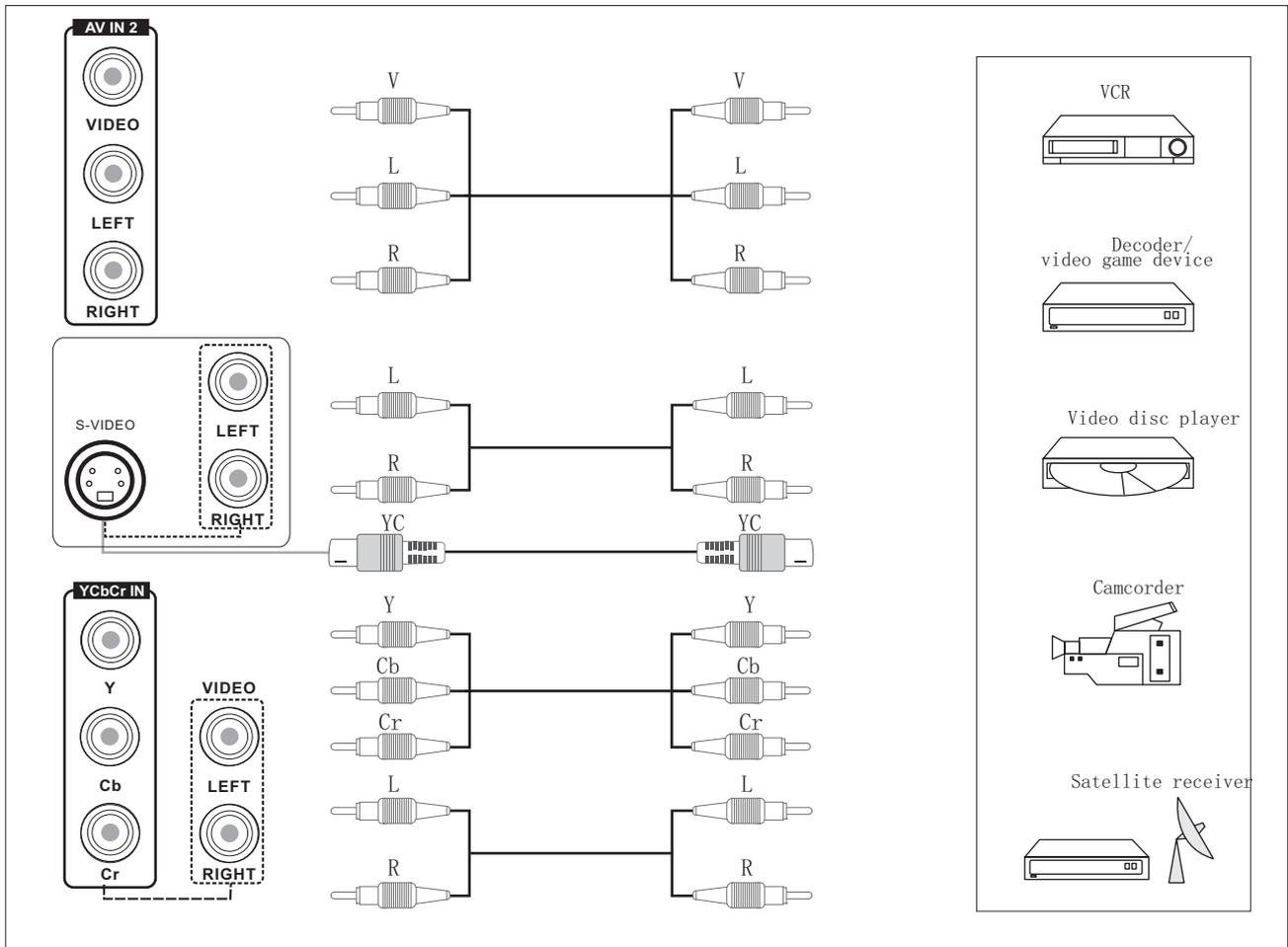
- \*An outdoor aerial
- \*A cable television network

Plug the aerial or cable network input cable to the 75Ω coaxial socket on the rear of the television.



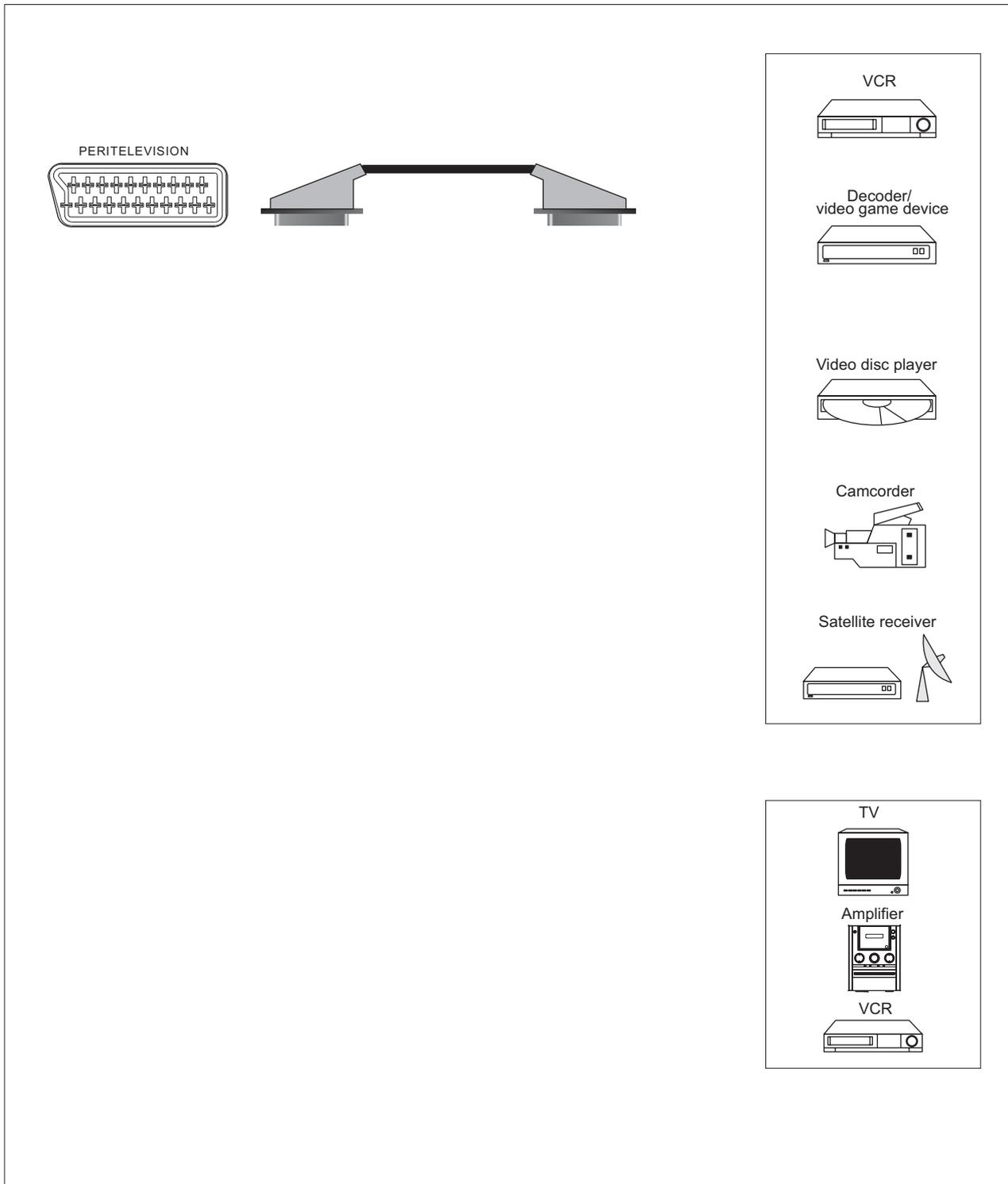
# Operation Instructions

## Connecting the Audio/Video Input/Outputs(option)



# Operation Instructions

## 21 PIN SCART



# Operation Instructions

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## **PERIPHERAL EQUIPMENT CONNECTIONS**

There is a wide range of audio and video equipment that can be connected to your TV. Connection diagrams at the end of this section show you where the different equipment should be connected at the backside of the TV.

### **Aerial socket**

1. Connect the RF out socket of the VCR to the aerial socket on the back of the set.
2. Connect the aerial cable to the RF aerial in socket of the VCR.
3. Select the program number where the VCR channel is stored.
4. Press the PLAY button on the VCR.

### **Audio/ Video in sockets**

1. Connect the audio/video out sockets of the VCR to audio/video in sockets of the set.
2. Press the AV/TV button to select AV.
3. Press the PLAY button on the VCR.

The VCR playback picture appears on the screen.

**Note:** If you want to watch the signals from the input jacks on the front panel, disconnect the Euro scart socket of the VCR from the Euro scart socket on the back of the set.

### **Precautions when connecting to other equipments**

When using external equipment with this TV, please read the instruction manual of the external equipment.

Switch off all power supplies to the equipment and TV before connection.

Always ensure that the input and output terminals are correctly connected..

# Operation Instructions

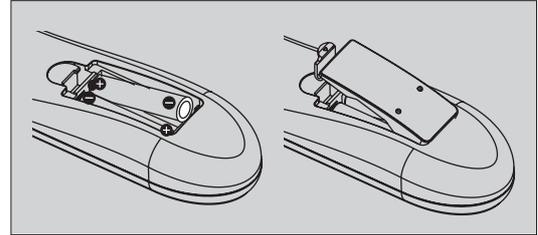
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## USING THE REMOTE CONTROL

### **Batteries**

Please follow the below instructions to install the supplied batteries into the remote control to make it operate.

1. Remove the battery cover.
2. Insert two 1.5V (AAA size) batteries making sure the polarity (+ or -) of the batteries matches the polarity marks inside the unit.
3. Replace the battery cover.



### **Precautions when using batteries**

- Do not use old and new batteries together.
- Do not use different types of batteries (for example, Manganese and Alkaline batteries) together.
- Note that there are chargeable and non-chargeable batteries. Do not attempt to charge non-chargeable batteries.
- If the remote control unit is not used for a long period of time, remove the batteries

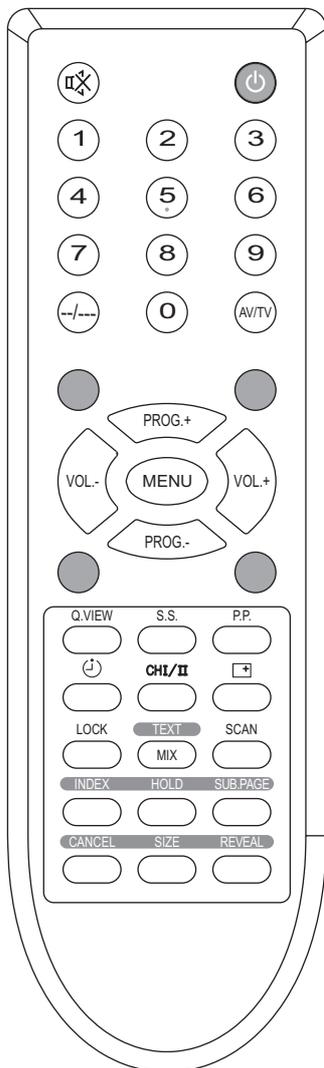
### **Precautions when using the remote control unit**

- Do not drop the remote control unit.
- Do not subject the remote control unit to physical shocks.
- Keep the remote control unit dry. Wetting it may cause the unit to malfunction.
- Replace the batteries with new ones when operation of the unit deteriorates.

**NOTE:** If there is an object between the remote control and the signal remote control sensor window on the TV, the remote may not operate. Please make sure the remote control is aiming at the remote control sensor window on the TV.

# Operation Instructions

## Remote Control Buttons



### 1. POWER (STANDBY) BUTTON ( )

Press this button to turn the TV on/off. Press any Number Button or Program Up/Down Button will also switch on the TV from standby mode.

### 2. MUTE BUTTON ( )

Press this button to temporarily cut off the sound output, press it again to restore the sound level.

### 3. DIGIT BUTTONS (0-9)

Press the number for your desired program and the program indicator will be displayed on the screen. To select a single-digit program, press the corresponding number key 0 - 9 button on the remote control unit.

### 4. PROGRAM SELECTION BUTTONS (--/---)

Press --/--- key to select one to three digits entry. If you want to select 0 - 9 program channel other than using the Digit Buttons, please press "--/---" key until display "-" on the screen right-top corner, then press digital number key 0-9. If you want to select 10-99 program channel, please press "--/---" key until display "--" on the screen right-top corner, then press digital number key 0-9. If you want to select 100-220 program channel, please press "--/---" key until display "---" on the screen right-top corner, then press digital number key 0-9.

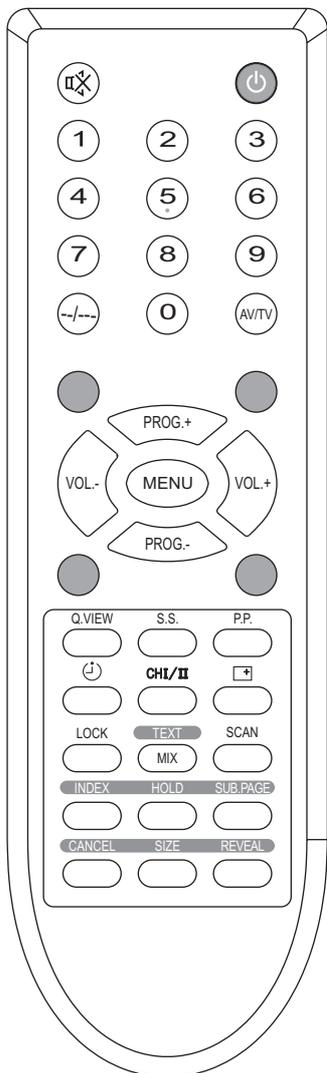
### 5. AV/TV BUTTON (AV/ TV)

Inputs can be set for TV or AV mode. Press this button to display external video signal such as DVD, VCR or VCD video player. AV will be displayed on the screen. Press this button again to switch back to TV signal from AV.

**Option:** In TELETTEXT mode, used as LANG.Key. Press this button to switch the teletext LANGUAGE such as English or Russian.

# Operation Instructions

## Remote Control Buttons



### 6. PROGRAM UP/DOWN BUTTONS (PROG. +/-)

Press the Program Up Button to select the program forwards. Press the Program Down Button to select the program backwards.

### 7. VOLUME UP/DOWN BUTTONS (VOL. +/-)

Press Volume +/- Buttons to adjust sound level.

### 8. MENU BUTTON (MENU)

Press "MENU" button to display the OSD (On-Screen Display) menu for adjusting the image, sound and functions. Pressing this button again to out from the OSD.

Please refer to page 15-19 for the details.

**Option:** In TELETEXT mode, Press this button to switch the teletext type such west/east type.

### 9. PERSONAL PRESETS BUTTON (P.P.)

You can select USER, STANDARD, SOFT or RICH mode by pressing this button.

### 10. QUICK VIEW BUTTON (Q.VIEW)

Press this button to return to the previously viewed program.

### 11. DISPLAY BUTTON (□+)

Press this button sequentially to display the current program number, color system and sound system on the screen.

● If you do not set the time, " --:-- " will display on the screen

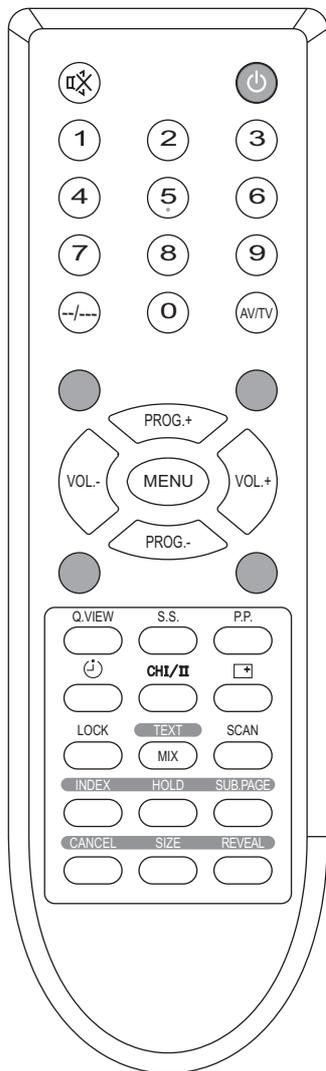
### 12. SLEEP TIMER BUTTON (⏰)

Press the "Sleep Timer" button on your remote control to start setting the automatic sleep timer.

Press the button to adjust the time in increments of 30 minutes, from 0 to 180 minutes. When the preset time runs to 0, TV set will go into standby mode. To switch off this function, press this key step by step until " OFF " is displayed on the screen.

# Operation Instructions

## Remote Control Buttons



### 13. LOCK BUTTON

The TV set can provide the locked key for control or prevent your children from watching the program.

#### SETTING UP THE CHILD LOCK FUNCTION:

Press the "LOCK" button on remote control unit. The key locked symbol (🔒) will be displayed on the screen for five seconds and entered into the child locked mode. While in Lock mode, any keys on the TV set will be disabled. Except the key on the Remote control

#### RELEASE CHILD LOCK:

Press again the 'LOCK" button on the remote control unit to cancel this function.

### 14. SCAN BUTTON

Press the SCAN button to automatically browse every channel which you have stored.

### 15. SOUND SYSTEM BUTTON(S.S)

Press this button to select the correct sound system

5.5M → 6.0M → 4.5M → 6.5M



### 16. STEREO/MONO DUAL (CHI/II) (TELETEXT OPTION)

In NICAM mode, press this button to change the sound station.

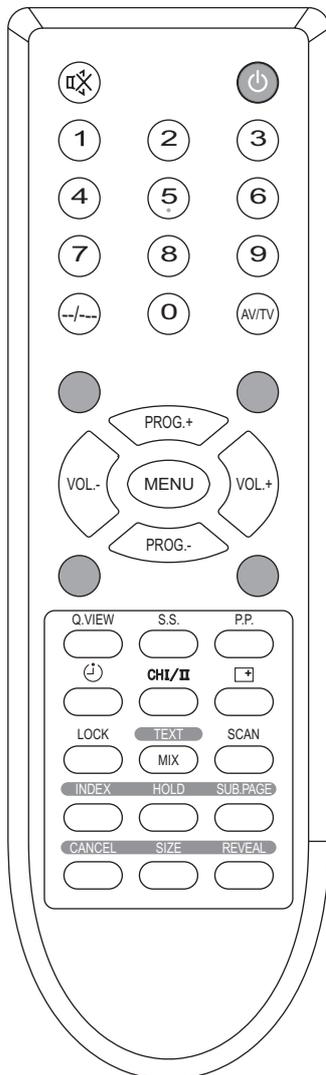
### 17. COLOUR BUTTONS (RED/YELLOW/GREEN/BLUE) (TELETEXT OPTION)

In TV mode, the (GREEN) / (BLUE) buttons has the same function as PROG+/- buttons; the (RED) / (YELLOW) buttons has the same function as VOL+/- button.

In TELETEXT mode, press these colour buttons, the color of page no of teletext will change to the same colour as that of the buttons.

# Operation Instructions

## Remote Control Buttons



\*Picture mode "RICH, SOFT, STANDARD" are fixed by factory, all the change of these settings will be saved into the "USER" mode automatically.

### 18. INDEX BUTTON (TELETEXT OPTION)

In TELETEXT mode, used as INDEX key.

INDEX: Press INDEX button to obtain the index page.

### 19. REVEAL MENU BUTTON (TELETEXT OPTION)

In TELETEXT mode, used as REVEAL key.

REVEAL: Sometimes the answers of quizzes, jokes etc are hidden. Press REVEAL button to reveal the hidden information.

### 20. SIZE MENU BUTTON (TELETEXT OPTION)

In TV mode, used as PICTURE menu command; in TELETEXT mode, used as SIZE key.

SIZE: The top or bottom half of any page can be enlarged by pressing this button.

### 21. HOLD BUTTON (TELETEXT OPTION)

In TELETEXT mode, used as HOLD key.

HOLD: Sub-pages will scroll automatically. Press HOLD button to hold a sub-page. To release the page. Press HOLD again.

### 22. SUB.PAGE BUTTON (TELETEXT OPTION)

In TELETEXT mode, used as SUB.PAGE key.

SUB.PAGE: Some pages attach sub-page, Page number may contain several subpages which are automatically paged by the TV station. Press this button once. 0001 will be displayed on screen, use number key (0-9) to look for other sub-pages if available, If there is no sub-page, \*\*\*\* will be displayed. To cancel this, press this button again.

### 23. TEXT/BUTTON (ON/MIX/OFF) (TELETEXT OPTION)

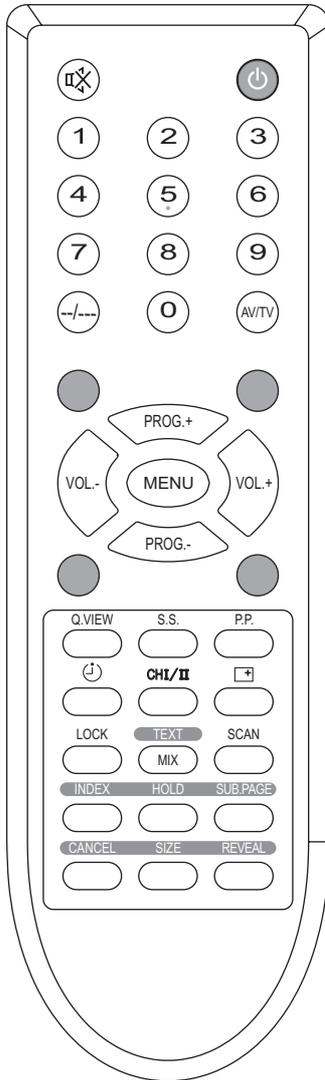
Press this button to display TELETEXT signal, mix TELETEXT page with TV signal and return to TV.

NOTE: To avoid mixing of External R.GB while viewing teletext. Disconnect scartplug or switch off external R.GB source (This key only use for TELETEXT mode).

# Operation Instructions

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## Remote Control Buttons



### 24. CANCEL BUTTON (TELETEXT OPTION)

In TELETEXT Mode, used as CANCEL key.  
CANCEL: If you want to watch TV but not cancel the TELETEXT mode completely. Press the CANCEL button. When the last selected page is updated, the page number will be appeared at the top of the TV screen press the CANCEL button again to reveal the page.

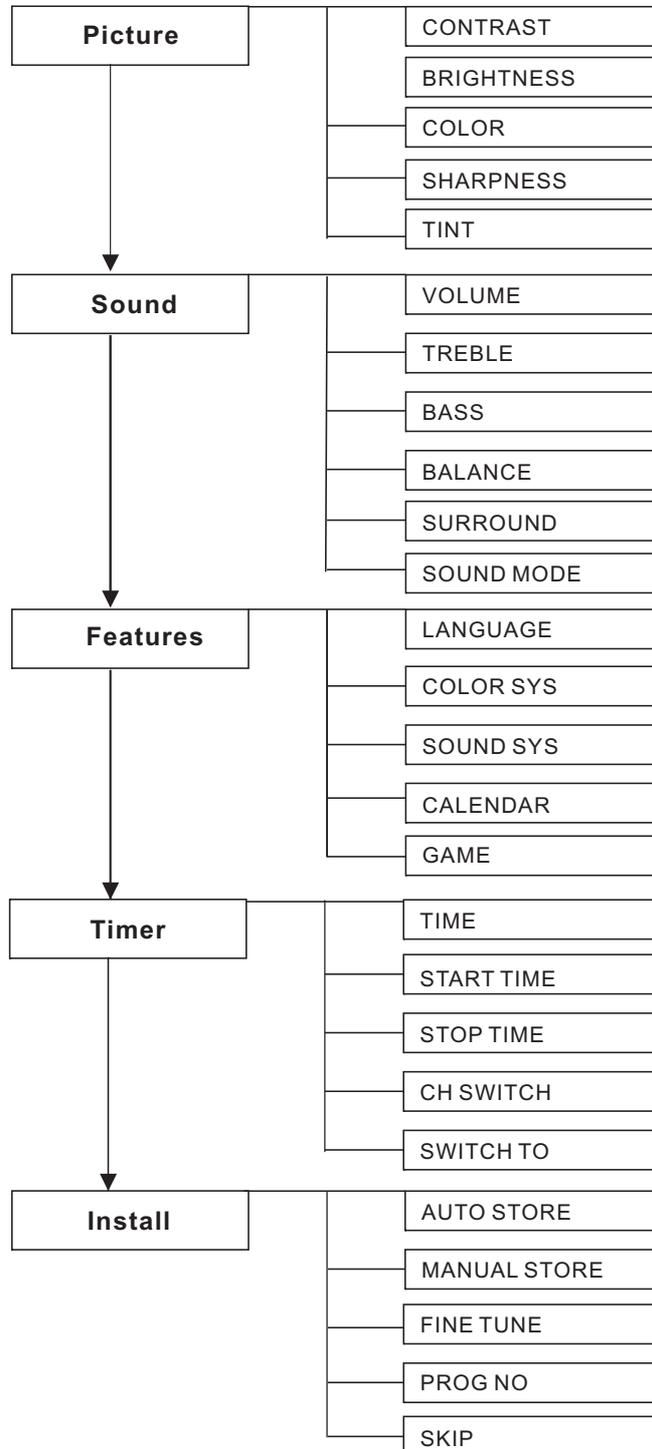
# Operation Instructions

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## MENU SYSTEM

This TV allows you to adjust the settings from the menu screens.

\* In the AV mode, menus appear the same as in TV mode except the Install menu.



# Operation Instructions

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Press the "MENU" button to enter the menu screens for the following settings.

**PICTURE Menu -> SOUND Menu (option) -> FEATURES Menu -> TIMER Menu -> INSTALL Menu -> EXIT**

-Select the desired item using the PROG. + / - Buttons.

-Use the VOL. +/- buttons to adjust the item settings.

The item selected will be highlighted in red

\* The menu screen will time out automatically after few seconds if it is left idle on the screen.

## **Picture Menu**

PICTURE	
CONTRAST	55
BRIGHTNESS	55
COLOR	55
SHARPNESS	50
TINT	00

You can select CONTRAST, BRIGHTNESS, COLOR, SHARPNESS, and TINT items by pressing PROG. +/- Buttons, and pressing the VOL. +/- Buttons to adjust the item of which you selected.

### **1.CONTRAST**

Press the VOL. + / - buttons to enhance or reduce the contrast between objects and the background from "00" to "100".

### **2.BRIGHTNESS**

Using the VOL. + / - buttons to adjust the lightness and darkness of the picture from "00" to "100".

### **3.COLOR**

Press the VOL. + / - buttons to increase or decrease the color saturation from "00" to "100".

### **4.SHARPNESS**

Adjust the outline of objects to either sharpen or more dull from "00" to "100".

### **5. TINT (NTSC Only)**

Adjust the color of objects from "50" to "+50", making them more red or green for a more natural look.

### **1.VOLUME**

Press VOL +/- buttons to adjust the Volume between "00" and "100".

### **2.TREBLE**

Press VOL +/- buttons to adjust desired Treble volume of sound between "-10" and "+10".

## **Sound Menu**

SOUND	
VOLUME	51
TREBLE	00
BASS	00
BALANCE	00
SURROUND	OFF
SOUND MODE	STANDARD

# Operation Instructions

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## 3.BASS

Press VOL +/- buttons to adjust desired Bass volume of sound between "-10" and "+10".

## 4.BALANCE

Press VOL +/- buttons to adjust the Balance between "L50" and "R50".

## 5.SURROUND

You can select to turn ON or OFF the Surround.

## 6.SOUND MODE

Press VOL +/- buttons to select the Sound Mode to STANDARD, MUSIC, THEATER, USER.

### Features Menu

FEATURES	
LANGUAGE	ENGLISH
COLOR SYS	AUTO
SOUND SYS	
CALENDAR	
GAME	

## 1.LANGUAGE

You can change menu language in this item. Press VOL. +/- Buttons to select your desired language. All the on screen displays will appear in the selected language.

## 2.COLOR SYS

Press VOL +/- buttons to change the color system to AUTO, PAL,N4.43,NTSC,SECAM

## 3.SOUND SYS

Press the VOL. +/- Buttons, you can change the Sound System to 6.0M ( I), 6.5M ( D/K), 4.5M ( M)and 5.5M ( B/G).

B/G: PAL B/G, SECAM B/G

I: PAL I

D/K: PAL D/K, SECAM D/K

M: NTSC-M

# Operation Instructions

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## 4. Calendar (Option)

- Press VOL +/- button to enter into Calendar menu.
- Press PROG +/- buttons to select Year, Month and Date. Press VOL +/- button to adjust the value.
- Press " MENU" button again to return.

## 5. Game Moving Cube (Option)

Press the PROG. +/- to select the Game function under the Features Menu. Press VOL +/- buttons to enter the Game OSD (On Screen Display) menu.

Game Rules: There are total 16 levels of the game. The player will win when moving all the pink cubes to the red box.

- Press PROG +/- buttons to move UP and DOWN, press VOL +/- to shift between right and left.
- To next stage of the game, press " P.P" button.
- To start a new game, press " MUTE" .
- To exit the game, press " MENU" button.

## Timer Menu

TIMER	
TIME	--:--
START TIME	--:--
STOP TIME	--:--
CH SWITCH	--:--
SWITCH TO	--

### 1. TIME

To adjust the current time by this item. Press the " VOL. -" button to set hour, and the " VOL. +" button to set minute.

### 2. START-TIME

To set the time when the TV set to turn on automatically.

### 3. STOP-TIME

To set the time when the TV set to turn off automatically.

### 4. CH SWITCH

To preset the time that the TV will switch to the selected channel (Position) automatically.

### 5. SWITCH TO

To set the program that will switch automatically at the CH SWITCH.

**NOTE:** All the timer functions will only be effective if the power of the TV set is switched off using the remote control unit. If the power is switched off by the power button on the TV set or a power failure occurs, the timer will be reset.

# Operation Instructions

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## Install Menu

INSTALL	
AUTO STORE	
MANUAL STORE	
FINE TUNE	
PROG NO.	00
SKIP	OFF

### **1.AUTOSTORE**

Press VOL.+/- Buttons,the TV setwill automatically search from V-L band to U band.The channels are stored in the order in which they appear in the frequency bands.

### **2. MANUAL STORE**

Press VOL.+/- Buttons to start searching. The VOL- button for backward search; the VOL+ button for forward search. When a TV station signal is received, the searching will stop automatically.

### **3. FINE TUNE**

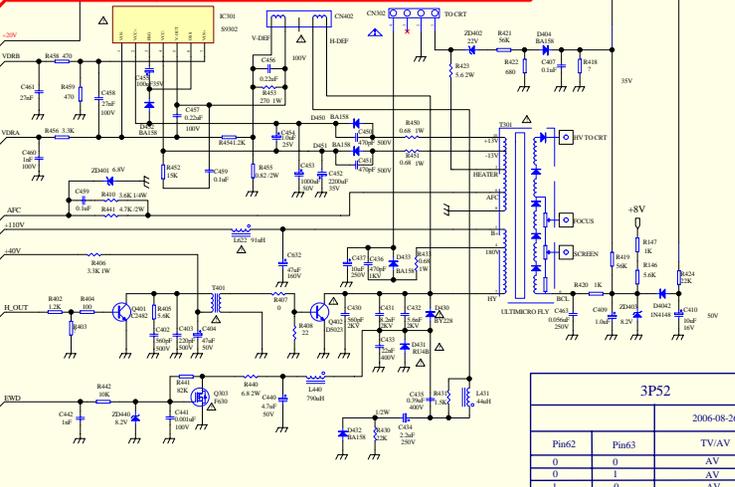
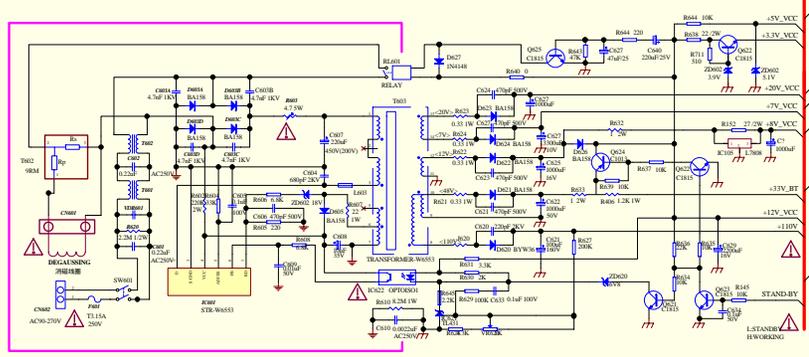
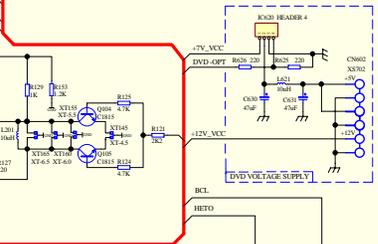
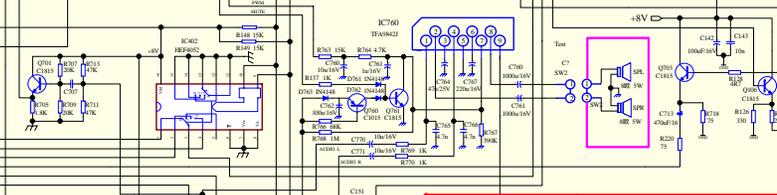
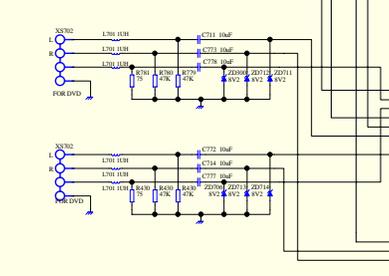
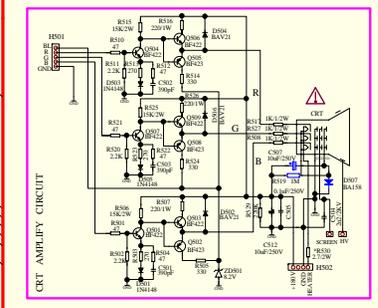
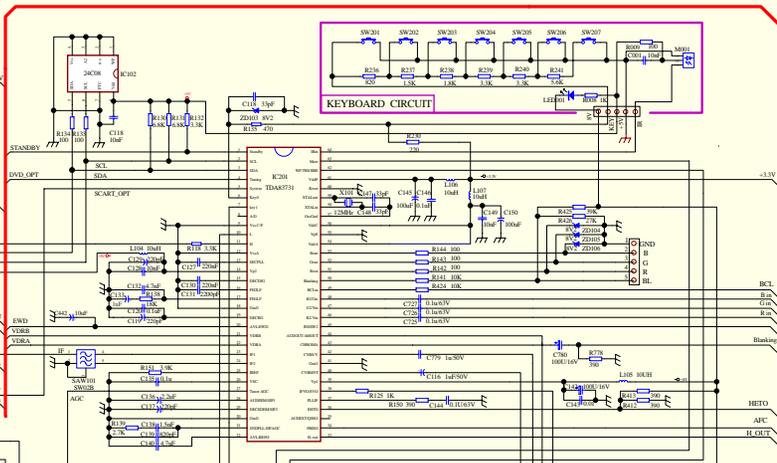
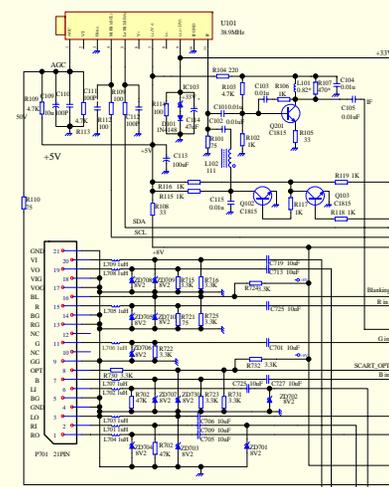
You can use this FINE tuning process for fine adjustment by pressing VOL.+/- Buttons. Normally fine tuning is only necessary if reception is poor.

### **4.PROG NO**

Up to 220 TV channels can be stored by program numbers (0 to 220). By pressing VOL.+/- Buttons (or number keys) in this item to select channel number. You can store the channel number, which are watching, and change the channel number. Once you have preset the channels, you will be able to use the PROG. +/- or NUMBER buttons to scan the channels you have programmed.

### **5.SKIP**

You can skip unnecessary program channels of your choice not to be displayed during viewing and scanning when pressing the " PROG -/+ " buttons.Select "Skip Del" by pressing " VOL. + / - " Buttons to select the channel that would like to skip from the channel scan operation.



3P52		
Pin62	Pin63	TV/AV
0	0	AV
0	1	AV
1	0	AV
1	1	TV

2006-08-26