

**14"—29"**

HUIJIA THIRD GENERATION NEW MODEL

# **INTELLECTIVE KING**

Instruction of Digital Color TV Mainboard

- I<sup>2</sup>c Digital master – line control
- Picture's zoom 16:9 function
- 255programs presetting, supplement channel reception
- Translucent Chinese OSD. English OSD. INDONESIA  
OSD. VIETNAM OSD. RUSSIAN OSD.
- Pull – screen type ON/OFF
- Games "Tetris" etc. stored inside, electronic calendar
- Clock, power on/off, reminder, appointment functions
- 2 – way AV input, 1 – way output

## Brief Introduction

Our company, specialized for development of the digital TV technology, produces and sells key components of color TV sets and antibacterial remote controllers.

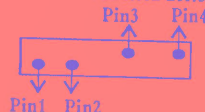
For many years, we've been taking development of national industry and China color TV business as our duty. In combination with various digital TV new technologies and new products developed by Dutch Philip Co., Japanese Mitsubishi Co. and Sanyo Co., we have developed the most advanced products according to the market demand to be supplied to color TV set manufacturers at home and abroad. With a strong economic force, advanced technology, experienced management, outstanding technicians and honest service spirit, we've gained our customers' recognition. Our products have features of serialization, universalization and standardization, and hold a lead in the same industry.

We guard against arrogance in face of achievements, for we know that the market competition is rather severe at the turn of century. To consolidate our present situation and strive for better, we make full efforts and always think about "What did we make wrong yesterday? What shall we do today? What will we do more tomorrow?" thereby we verify our own work. We are grateful to those who always support us and herewith we extend our hearty thanks.

Pursuit is endless. We promise to develop more good-quality products to satisfy customers' various demands by way of thoughtful service and reasonable price. We are looking forward to meeting guests from home and abroad. Let us all together make a better future.

Yongjia Electronics

Connect to field deflection



Connect to line deflection

## 25 - 29inch Installation Instruction

### Step 1 How to connect the line deflection coil:

1. Measure the line resistance value with a general multimeter. If it is  $1.3 \sim 1.7 \Omega$ , the first red pin of the deflection plug shall be plug into T1 on the mainboard (or universal socket). The 1<sup>st</sup> and 2<sup>nd</sup> coil of deflection coil (red lead wire) are connected respectively to the two pins of the line deflection coil.
2. Measure the line deflection resistance value with a general multimeter. If it is  $1 \sim 1.2 \Omega$ , the first red pin of the deflection plug shall be plug into T2 on the mainboard (the second pinhole of F.B.T. in back-words).
3. Measure the line deflection resistance value with a general multimeter. If it is  $0.6 \sim 0.9 \Omega$ , the first red pin of the deflection plug shall be plug into T3 on the mainboard (the last pinhole of F.B.T.).
4. If the line amplitude is too large, please switch off to prevent components from being burnt, please increase the capacitance of C441 capacitor, then switch on. If the line amplitude is too small, please increase the capacitance of C438 capacitor. The line amplitude determines the capacitance.
5. At the same time, adjust H.S. circuit to adjust resistors RP301, RP302. If "□" occurs for the grating, please continue to increase the capacitance of C438 capacitor or properly reduce the capacitance of "S" rectify capacitor C441, solder and connect the red lead wire directly to T4 pin in the main-board (8<sup>th</sup> pin of F.B.T.).
6. Those line deflection coils whose resistance is lower than  $0.6 \Omega$  cannot be installed on this mainboard. Please change the coil, otherwise it will burn the elements or the grating will have a distortion.
7. Note: The above-mentioned methods can be used synthetically, main voltage 120V - 135V, if adjust it too high, will cause a field dithering.

### Step 2 How to connect the field deflection coil:

The 3<sup>rd</sup> and 4<sup>th</sup> connect wire of the deflection plug are connected respectively to the two pins of the field deflection coil of your CRT. If the image is reversed, please exchange the pins' connection. If the field amplitude couldn't be adjusted well, please replace R459 resistor normally between  $0.8 \sim 2 \Omega$ , reduce R451 resistor 4.7K or enter into the inside of the master line for adjustment of V.SIZE (field amplitude).

### Step 3 After installation, the grating is deflected to one side:

Take out H.LINE inductance L441, change polarity and install it again. When the left and right of the grating are asymmetrical, please apply several turns of copper wire around L441 inductance and solder it well. Then enter into the inside of the I C bus-mastering to adjust "H.PHASE".

### Step 4 Any wrong connection on the line/field deflection coils will cause:

The main voltage 130V voltage is too low, line circuit doesn't work, no high voltage and burn line output tube "V432", field scanning chip LA78041 power switch tube "V513" and "V551" triode, current-limiting resistance "R550", R460 resistor "180 $\Omega$ " shall be replaced.

### Step 5 If power tube V513 is burnt and no power is started:

You can check and replace "V513", "V512" 3807 triode, resistor "R517" and 560 $\Omega$  resistance; "VD516" IN4148 diode "V511" A1015 triode; "V553" "1815 triode" "VD561" 6.2V stability diode, "R517" 1K resistor, current-limiting resistance R502 5W2.2 $\Omega$ .

### Step 6 If your kinescope's ignition or the ground-wire connection is bad:

It may damage signal treatment chip "LA7681x" and CPU chip "LA8633xx"; check carefully, otherwise the indicating light is always on and can not start, no brightness, no signal memory.

### Step 7 If brightness is low or your kinescope is aged:

1. Reduce filament resistances R491, grating is flickering, please check C231 50VIUF no polar capacitance.
2. Reduce R931, 1.8K $\Omega$  resistance to 470 $\Omega$ -1.2K $\Omega$  in the vision output board (CRT board)
3. Reduce R906, R916, and R926 resistances to 200 $\Omega$ -470 $\Omega$ .

### Step 8 After installation, field amplitude is abnormal, linearity is bad,

or kinescope's color is aged, please solve them according to manufacturer's instruction, if B/W BALANCE is improper, please reduce resistance of either R906 or R916 or R926.

### Step 9 In case "田" occurs on the display after debugging, please readjust it:

1. Adjust (internal signal) C, B/W in B/W BALANCE to 0;
2. IC SELECT (integrated chip selection) in ADJUST MENU X should be adjusted to LA76810/LA76818 (subject to the actual fixed integrated circuit on the mainboard).

Step 10 Note that when the tube socket is changed, the last pin of the socket must be taken off, otherwise it would burn filament's resistor or some kind of backward scanning lines would occur.

Remarks: A certain kind of color kinescopes of Panasonic, Toshiba, Sharp, Hitachi etc shall adopt 34inch Huijia mainboard. If "□" occurs in field scanning, another South & North rectify board shall be fixed on ( if you need this, buy the board in addition ).

## 14 -21inch Installation Instruction

### Step 1. How to connect the line deflection coil:

1. First measure the line resistance with a general multimeter. When it is  $2.2\ \Omega$ , the deflection wire shall be plug into the universal socket. When the resistance value is above  $2.3\ \Omega$  (for the kinescope below 20-inch), insert the first red pin of the deflection plug into T2 on the mainboard (the 9<sup>th</sup> pinhole of F.B.T.). Other connections remain unchanged.
2. When the line deflection resistance value is between  $1.5 \sim 1.9\ \Omega$ , plug the first pin (red lead) into T1 on the mainboard, at the same time increase the capacitance of "S" rectify capacitor C441. The line amplitude determines the capacitance.
3. In case the resistance is below  $1.5\ \Omega$  and the line deflection is changed to series connection, the line deflection red wire should be plug into T3 on the mainboard (the 10<sup>th</sup> pinhole of F.B.T.). If the line amplitude is too wide, please increase the capacitance of "S" rectify capacitor C441 by more than  $0.82\ \text{F}$ , or series-connect a 21-inch line linear inductance to the deflection red wire.
4. Note: The above-mentioned methods can be used flexibly.

### Step 2. How to connect the field deflection coil:

When the field deflection resistance is between  $8 \sim 15\ \Omega$ , the 3<sup>rd</sup> pin and 4<sup>th</sup> pin of the deflection plug can be used directly. If it is between  $40 \sim 60\ \Omega$ , the field deflection coil can be parallel connected to reach between  $8 \sim 15\ \Omega$ .  
Method: Use an electric soldering iron to disconnect the middle one of the three wire-pins on the field deflection, and respectively connect it to both sides in order to acquire a correct resistance value. If there is no resistance, please exchange the connection ways.

### Step 3. In case the line amplitude is too large or line tube is hot after switching on:

1. Please increase C441 linear capacitance which shall be adjusted between  $0.33\ \mu\text{F}/200\text{V} \sim 0.82\ \mu\text{F}/200\text{V}$ .
2. If the line amplitude cannot reach the sideline, please parallel connect a back-capacitor  $1.6\text{kV}\ 3300\text{pF}$ . Since the capacitance volume is related with the line amplitude and high voltage, please prepare a proper capacitor carefully.

### Step 4. After installation and connection, the image is deflected to one side:

Take out L441 line linear inductance, change polarity and install it again. Readjust the line center data inside I<sup>2</sup>C mainline. When the left and right of the grating are asymmetrical, please apply several turns of copper wire around L441 inductance and solder it well. For the regulating methods, see the attached debugging instruction.

### Step 5. After installation, distortion occurs for the kinescope below 20 inch:

"□" "○" mean that your kinescope's deflection hasn't been calibrated. You may increase C435 back-capacitor to enlarge the line amplitude to be normal. If you want to eliminate such occurrence, change the deflection coil or select our main board with rectify circuit.

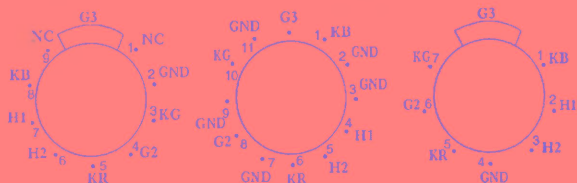
### Step 6. Using 14 -20-inch main board for 21-inch's CRT may cause the following:

The pins' arrangement is wrong, use another tube socket and use a lead line to connect: KR-to-KR, KG-to-KG, and HI-to-HI. Connect together all the ground-wires of 11-pin tube socket, then connect to the ground-wire of your main board.

9-pin socket

11-pin socket

7-pin socket



This mainboard adopts 11-pin kinescope to focalize and the voltage will be too high, So the voltage should be reduced as follows:

Connect to kinescope tube socket

Focalize potentiometer Resistance at  $110\ \text{M}\Omega$

Connect to mainboard GND    Connect to HV pack focus wire

### Step 7 Any wrong connection on the line/field deflection coils will:

Burn line tube or power tube, field scanning chip LA78040, R460, V551 current-limiting resistance R550. They shall be checked and replaced.

### Step 8 If power tube V513 is burnt and no power (no short circuit under load):

You can replace "V512" 3807 triode, resistor "R517" and  $560\ \Omega$  resistance; "VD516" IN4148 diode "V511" A1015 triode; "V553" "C1815 triode" "VD561" 6.2V stability diode, "C515(2A153)" "C514 (2A104)" shall be checked and replaced.

### Step 9 If your kinescope's ignition or the ground-wire connection is bad:

It may damage "LA76810/8" and "chip/CPU" resulting in a bright line, no brightness, CPU doesn't work, etc.

### Step 10 If your kinescope is aged and brightness is low:

1. Reduce filament resistance R491;
2. Reduce R931,  $1.8\text{K}$  resistances to  $470\sim 1.2\text{K}$ ;
3. Reduce R906, R916, and R926 resistances to  $220\ \Omega\sim 470\ \Omega$ .

### Step 11 After installation, field amplitude is abnormal, linearity is bad,

or kinescope's color is aged, please solve them according to manufacturer's instruction, concrete data depend on the shooting capacity of the kinescope.

### Step 12 If field amplitude is not good after installation and debugging,

Alter R459 resistance on the mainboard, reduce the resistance if the field amplitude is small, while increase it if the amplitude is too large (between  $0.81 \sim 2.5\ \Omega$ ), also R451 resistance can be reduced  $4.7\text{K}$ . If the white line or "\*\*\*\*" is display on the grating (left side or right side) when no image or blue screen appeared then please adjust the H-BLK-L or H-BLK-R in the adjustment date of I<sup>2</sup>C "ADJUST MENU 2" (Factory adjustment and setup).

### Step 13 In case "田", black screen or white screen occurs on the display after debugging but characters are normal, please readjust it:

1. Adjust C, B/W in B/W BALANCE to 0 (0 normal, 1 black screen, 2 white screen, 3 "田");
2. IC SELECT in ADJUST MENU 3 should be subject to the actual fixing on the mainboard, and adjust it to LA76810 or LA76818.

Note: When 7-pin socket is changed to 9-pin socket, the last pin of 9-pin socket must be taken off, otherwise it would burn filament's current-limiting resistor R491 or fly-back scanning lines would occur.

# Chapter Five: Factory adjustment and Setup

First pushing the "REVIEW" key. Then pushing the "VOL -" key, at the same time pushing the "REVIEW" key, the "factory" function can be realized. Again operating, repeat above process. The POS + / POS - key is use to select the item that need be adjusted. The list of item is shown below:

				MENU0		
OSD	Explanation	Range	Normal	Register Name	General Description	Normal
S - BRH	Sub Brightness	0 ~ 127	37	H. PHASE	Align sync to flyback phase	11
R - BIA	Red Bias	0 ~ 255	68	V. SIZE	Align vertical amplitude	37
G - BIA	Green Bias	0 ~ 255	78	V. LINE	Align vertical Linearity	16
B - BIA	Blue Bias	0 ~ 255	73	V. POSITION	Align vertical DC bias	32
R - DRV	Red Drive	0 ~ 127	72	V. SC	Align vertical S - correction	15
G - DRV	Green Drive	0 ~ 15	7	NT. H. PHASE	NTSC align sync to flyback phase	-03
B - DRV	Blue Drive	0 ~ 127	67	NT. V. SIZE	NTSC align Vertical amplitude	-07
* G. B/W	Cross B/W	0 ~ 3	0	NT. V. LINE	NTSC align Vertical Linearity	00
				NT. V. POSI	NTSC align Vertical position	+04
				NT. V. SC	NTSC align Vertical S - Correction	+02

The adjustment of adjust item and the setup of item The MUTE key is used to page up, the ZOOM key is used to page down.

The above data are only for reference. The concrete data are subject to the R, G, B transmitting capability of the kinescope(C. R. T. )and to the deflecting coil's parameter properly adjusted.

The data for MENU 3—MENU 11 have been set and can not be adjusted randomly, otherwise it'll lose some function or couldn't be used in a normal way.

The VOL + / VOL - key is used to change the item value.

MENU1			MENU2		
Register Name	General Description	Normal	Name	Explanation	Normal
RF AGC	Align RF AGC threshold	35	* SETUP SELECT	SELECT (1/ MENU0 - MENU1) / (0/ MENU0—MENU2)	0
VOLUME OUT	Volume output	120	HL BLK. LEFT	Left H - Blanking Control (Width / Phase)	7
R - Y / B - Y G. BL	R - Y / B - Y Gain Balance	8	HL BLK. RIGHT	Right H - Blanking Control (Width / Phase)	3
R - Y / B - Y ANG.	R - Y / B - Y angle	8	OSD H. POSI	OSD horizontal DC bias	11
B - Y DC LEVEL	B - Y DC Level (White - Balance)	8	OSD V. POSI	OSD vertical DC bias	16
R - Y DC LEVEL	R - Y DC Level (White - Balance)	8	OSD. CONT	Align OSD AC level	53
SECAM R - Y DC	SECAM R - Y DC Level	8	POSITION L/R	The OSD position (LEFT/RIGHT)	1
SECAM R - Y DC	SECAM R - Y DC Level	8	LOW AC - IN	Low AC - IN	63
YUV B - Y DC	YUV B - Y DC Level	8	HIGH AC - IN	High AC - IN	0
YUV R - Y DC	YUV R - Y DC Level	8			

MENU3			MENU4		
Name	Explanation	Normal	Name	Explanation	Normal
* IL SELECT	Select 0: LA76810 , 1: LA76818	1	BACK COLOR	Blue / black background (0: BLUE / 1: BLACK)	0
POWER OPTION	Power status: 0: OFF 1: REM 2/3: ON	1	BLK PROCESS	Black process (1: has /0: no)	1
POWER LOGO	Logo 1: ON 0: OFF	1	LINE MODE	At "B/W BALANCE" mode, the picture mode if is changed. (1: 0)	1
SCREEN OPT.	Screen option (0: OFF 1: P, ON 2: P, OFF 3: ALL)	3	V. MUTE P. OFF	The video is shut off before power off (0: select / 1: no)	0
SCREEN TIME	Screen time (range: 0 ~ 7sec)	6	CALENDAR	Calendar function (1: has /0: no)	1
SCR. IL POSI	Initial position of screen (range: 0 ~ 127)	1	GAME OPTIONS	Game function (1: has /0: no)	3
BAND OPTION	Band control (0: LA7910 1: TUNER2; PORT H 3: PORT L)	2			
AV OPTION	AV select (0 ~ 3)	1			
SEARCH CHECK	Search check (0: OFF 1: ON)	1			

MENU5			MENU6		
Name	Explanation	Normal	Name	Explanation	Normal
CHINESE OSD	Chinese OSD select (1: has /0: no)	1	* STEREO OPT.	Stereo function (1: has /0: no)	1
INDONESIA OSD	INDONESIA OSD (1: has /0: no)	1	WOOF / H. PHONE	Woof or earphone function (0: WOOF / 1: H. PHONE)	0
VIETNAM OSD	VIETNAM OSD (1: has /0: no)	1	ZOOM OPTION	Zoom function (1: has /0: no)	1
RUSSIAN OSD	RUSSIAN OSD (1: has /0: no)	1	ZOOM1 V. SIZE	Zoom1 align Vertical Size compensation 0 ~ 127	55
MENU BACK	Menu back function (1: has /0: no)	1	ZOOM2 V. SIZE	Zoom2 align Vertical Size compensation 0 ~ 127	16
MENU ICON	Menu icon function (1: has /0: no)	1	SUB. CONT.	Subsidiary contact (range: 0 ~ 31)	29
XI / FL MOVE	XI / FL LOGO SELECT (0: OFF 1: ON)	1	SUB. COLOR	Subsidiary color (range: 0 ~ 15)	15
OSPECIAL LOGO	IL 仕、喜 / 端 SELECT ON / OFF	0	SUB. SHARP	Subsidiary sharp (range: 0 ~ 31)	22
			SUB. TINT	Subsidiary tint (range: 0 ~ 63)	32

MENU7		
Name	Explanation	Normal
PAL OPTION	PAL (1: has /0: no)	1
N3.58 OPTION	NTSC3.58 (1: has /0: no)	1
N4.43 OPTION	NTSC4.43 (1: has /0: no)	1
SECAM OPTION	SECAM (1: has /0: no); SECAM IC: LA7642	1
COLOR AUTO	Color auto identify (1: has /0: no)	1
4.5M OPTION	4.5M sound system option (1: has /0: no)	1
5.5M OPTION	5.5M sound system option (1: has /0: no)	1
6.0M OPTION	6.0M sound system option (1: has /0: no)	1
6.5M OPTION	6.5M sound system option (1: has /0: no)	1
B. B. BRIGHT	Bright value (range: 0 ~ 127)	46



## MENU8

Name	Explanation	Normal
H. FREQUENCY	Align ES sample horizontal frequency (range:0 ~ 63); effective only in 1A76818	32
AFC GAIN	Select horizontal first loop gain. (0: AUTO/1: HIGH)	1
V. SETUP	Vertical setup (0: low/1: high).	1
VIDEO LEVEL	Align IF video level. (range:0 ~ 7).	6
FM LEVEL	Align WBA output level. (range:0 ~ 31).	15
CD. MODE	Select vertical countdown model(range:0 ~ 7).	0
SOUND TRAP	Sound trap(range:0 ~ 7).	4
IL TONE DEF. R/G GAMMA	Half tone ON/OFF SW. (0: has /1: no); at 1A76818 Select and disable Red/green gamma correction. (range:0 ~ 3); at 1A76810	0
HALF TONEBLUE GAMMAAdjust	Half tone level. (range: 0 ~ 3); at 1A76818 Select and disable B gamma correction. (ON/OFF); at 1A76810	3
DIGITAL OSD	Select Digital OSD mode. (1: has /0: no)	1

## MENU9

Name	Explanation	Normal
VOL. FILTER	Disable volume DAC filter. (0/1);	1
VIF. SYS. SW	Select 0: 38.0M /1: 38.9M /2: 45.75M /3: 58.75M	0
BRT. ABL. DEF	Disable brightness ABL.	0
MID. STP. DEF	Disable brightness mid stop	0
BRT. ABL. TH	Align brightness ABL threshold	0
RGB TEMP. SW. EMG. ABL. DEF	Select the temperature characteristics for RGB DC output. Disable emergency brightness ABL.	0
YUV OPTION	YUV option(1: has /0: no)	0
FSC. /C ~ SYNC	Select 22pin output. (0: FSC./1: SD)	1
VCO SBJ. SW.	Control free Run frequency of chroma VCO.	0
C. VCO. ADJ	Select /C. VCOadjustment/direction. (0: 01HZ/1: 30HZ/2: 60HZ/3: 90HZ)	3

## MENU10

Name	Explanation	Normal
VREST TIMING	Select Vertical Reset Timing	1
G - Y ANGLE	Select G - Y angle	1
C. KILLER OPE	Select color killer operation level.	5
V. BLK. SW	V blanking control SW	1
FBPBLK SW.	Select Horizontal blanking operation.	1
W.P. OPT.	Select White Peak Limiter level.	2
PRE/OVER ADJ	Select Pre/Over ~ shoot width.	1
PRE/OVER SW.	Select Pre/Over ~ shoot SW	0
CORING W/DEF	Control coring width.	3

## MENU11

Name	Explanation	Normal
Y GAMMA STA.	Select Y Gamma start point. (range:0 ~ 3)	1
DC REST	Select luma DC restoration. (0 ~ 3)	2
BLK. STR. STA	Select Black Stretch Start Point. (range:0 ~ 3)	0
BLK. STR. GAIN	Select black stretch gain. (range:0 ~ 3)	3
A. MONI SW.	Select 2pin output SAO at External audio input. (0/1)	1
S. TRAP. SW.	Select sound trap ON/OFF (1: INT. /0: EXT. )	1
V. LEV. OFFSET	Control IF video output amplitude. (range:0 ~ 3)	2
OVER. MOD. SW.	Select over modulation function. (ON/OFF)	0
OV. MOD. LEVEL	Adjust over modulation operating point. (range:0 ~ 15)	0
S - VIDEO OPT.	S - VIDEO OPTION SELECT(0: has /1: no)	0

Remarks: You can not adjust the part with “\*” added before, otherwise it might not be used normally. In case of any modification, please be subject to the actual adjusting items in the PC master line.

# Operation Instruction

## ● Automatic presetting of programs

In the state of TV, repeatedly press "Menu" key, when "Preset" is displayed on screen, press "up-down" key on the remote control, choose "full-automatic search", then press "left-right" key or "volume" key of the remote control to enter full-automatic search; Meanwhile, by the method above, you can also choose "fine tuning", "semi-automatic search" and change position of "program number".

## ● Selecting a program

After presetting programs, press "program" key or "up-down" key of remote control, you can choose a program to watch. You may also select a program directly by pressing a numeral key on the remote control.

## ● Volume adjustment

Pressing "+" of "volume" or "left-right" key can change the volume.

## ● Picture adjustment

Repeatedly press "Menu" key, when "picture" (image) is displayed on screen, press program key or "up-down" key of remote control, you can choose "brightness" "contrast" "color" "definition" adjustment. Press "volume" key or "left-right" key of the remote control to adjust the above items until the picture is satisfying.

## ● Sound(acoustics) adjustment

Repeatedly press "Menu" key, when "sound" is displayed on screen, press "program" key or "up-down" key of remote control to choose "volume" "balance" adjustment, press "volume" or "left-right" key of remote control to adjust sound. You may also directly press "sound" key of remote control to make the above adjustments.

## ● Play(game) function

Repeatedly press "Menu" key, when "function" is displayed on screen, press "program" key or "up-down" key of remote control to choose "game 1" "game 2", press "volume" key or "left-right" key of remote control to enter game-play state. Press "left-right" key of remote control to move towards left or right, press "turn" key to change direction, press "down" key to speed up downwards, press "frequency display" key of remote control to quit the game.

## ● Time

Repeatedly press "Menu" key, when "Time" is displayed on screen, press "program" key or "up-down" key of remote control to choose "sleep time" "clock" "start time" "stop time" "alarm time" "appointment time" "appointment program", press "volume" key or "left-right" key of remote control to make setting. "volume +" can preset minute, "volume -" can preset hour, press "frequency display" key to quit.

## ● Electronic calendar

Repeatedly press "Menu" key, or directly press "function" key of remote control, when "function" is displayed on screen, press "program" key or "up-down" key of remote control to set "calendar display". Press "volume" key or "left-right" key of remote control to enter the setting, press "channel" key or "up-down" key of remote control to choose "year, month, date", press "volume" key or "left-right" key of remote control to change date.

## ● Selecting a system

In the state of TV, repeatedly press "Menu" key, when "system" is displayed on screen, press "program" key or "up-down" key of remote control to choose "color system" "sound accompany system" "program exchange" "program duplicate" "program completely clear away", press "volume" key or "left-right" key of remote control to set required system.

## ● Video frequency function

Directly press "TV/VF" key, or "AV/TV" key to convert V. F. signal and TV signal.

## ● Zoom 16:9 function

Repeatedly press "Zoom" key of the remote control to choose picture "wide screen" [16:9] "General" [normal] "enlarge".

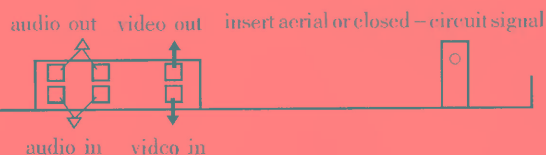
## ● Picture memory

Four kinds of pictures are stored inside for your choice, repeatedly press "memory" key of the remote control to choose "memory", "standard", "mild", "colourful" or "bright" picture.

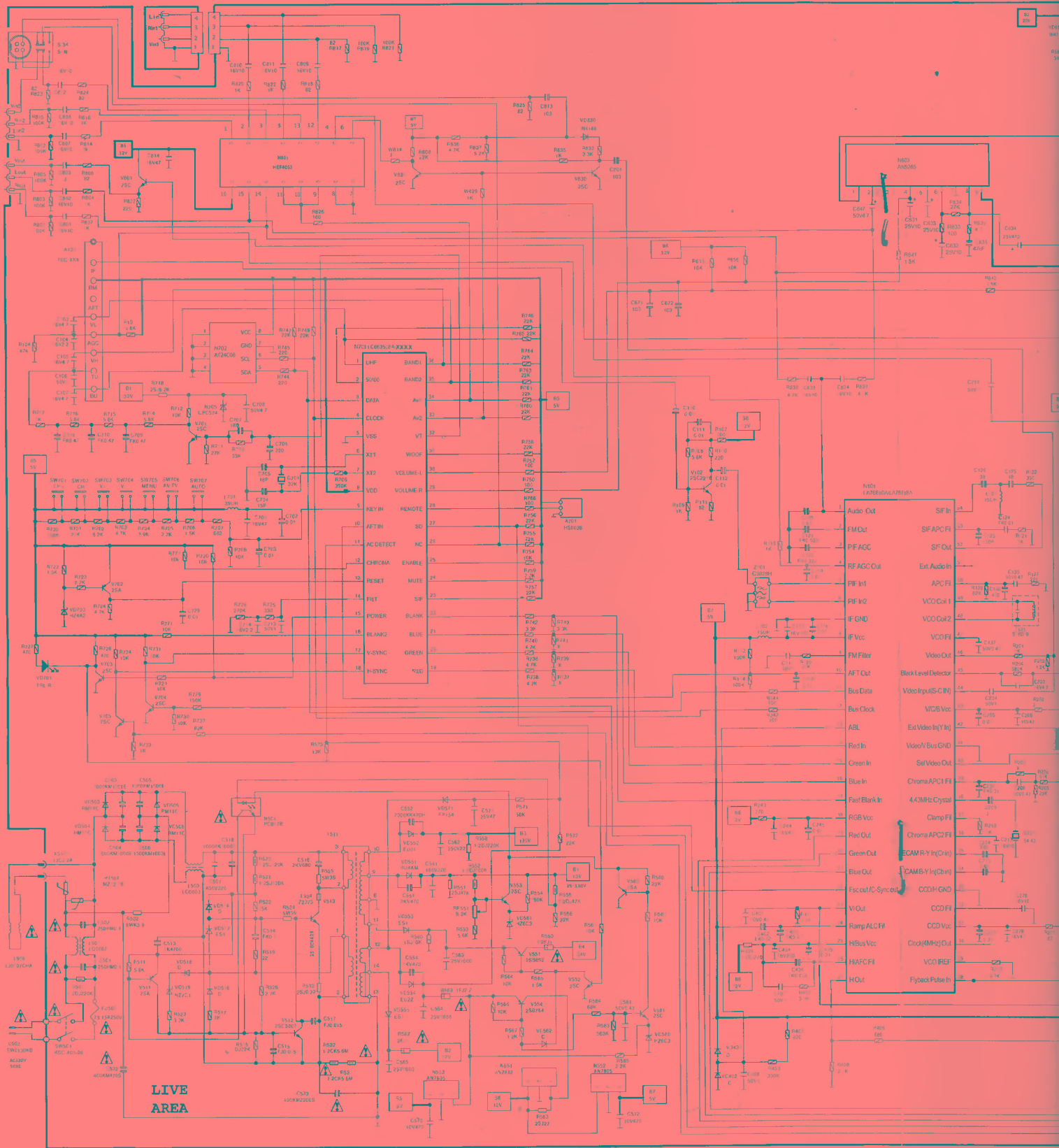
## ● Front-panel explanation



## ● Rear-panel explanation



# Third Generation 14"—29" Elem



## on 14"—29" Elementary Drawing

21"pillow-shaped calibration circuit hasn't been used.