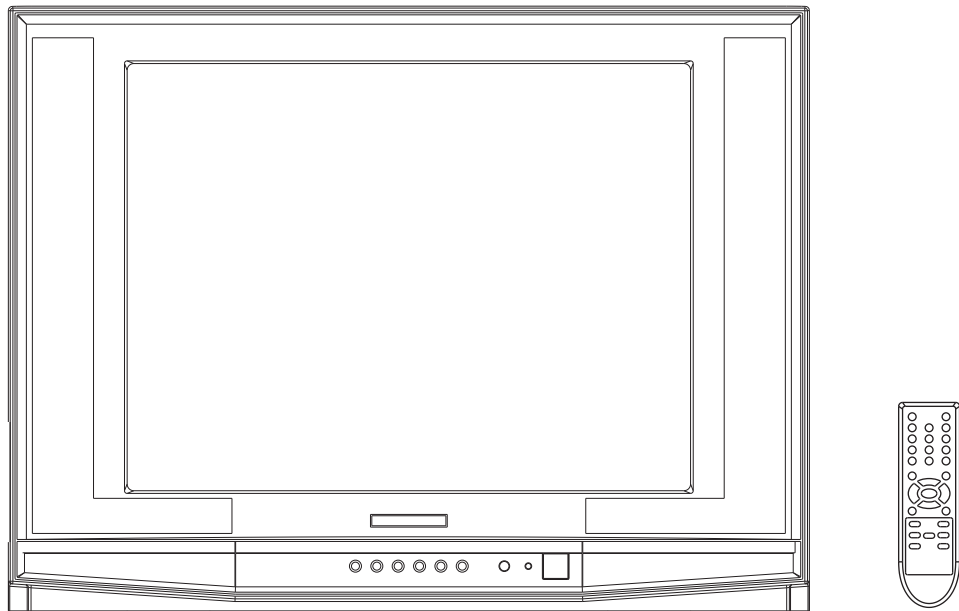


SERVICE MANUAL

3Y18 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

PRODUCT SPEC DESCRIPTION

REFERENCE NO. : PD-3Y18
REVISION : 2
DATE : 2006-5.28
MODEL NO. :
14" : All 14" (for 304*254mm main board)
21" : All 21" (for 304*254mm main board)
CHASSIS NO. : 3Y18

DESCRIPTION: 14" – 21" COLOUR TV , RCA or SCART JACK
AC 90-260V 50/60Hz.

OPTIONAL : OPTION 1: (ASIA)

1. PAL-BG/DK/I/,NTSC PLAYBACK
2. JACK: RCA
 - 1) RCA
 - a) YUV & S-VIDEO(OPTION)
3. SOUND:
 - 1) MONO
 - 2) AV STEREO
 - a) TONE CONTROL(OPTION)
4. 1 or 2 AV INPUT(OPTION) 1. OUTPUT

OPTION 2 : (EUROPE)

1. PAL,SECAM,BG/DK/I/,NTSC PLAYBACK (OPTION 2)
2. JACK: RCA or SCART (OPTION)
 - 1) RCA
 - a. YUV & S-VIDEO(OPTION)
 - 2). SCART
3. SOUND: (OPTION)
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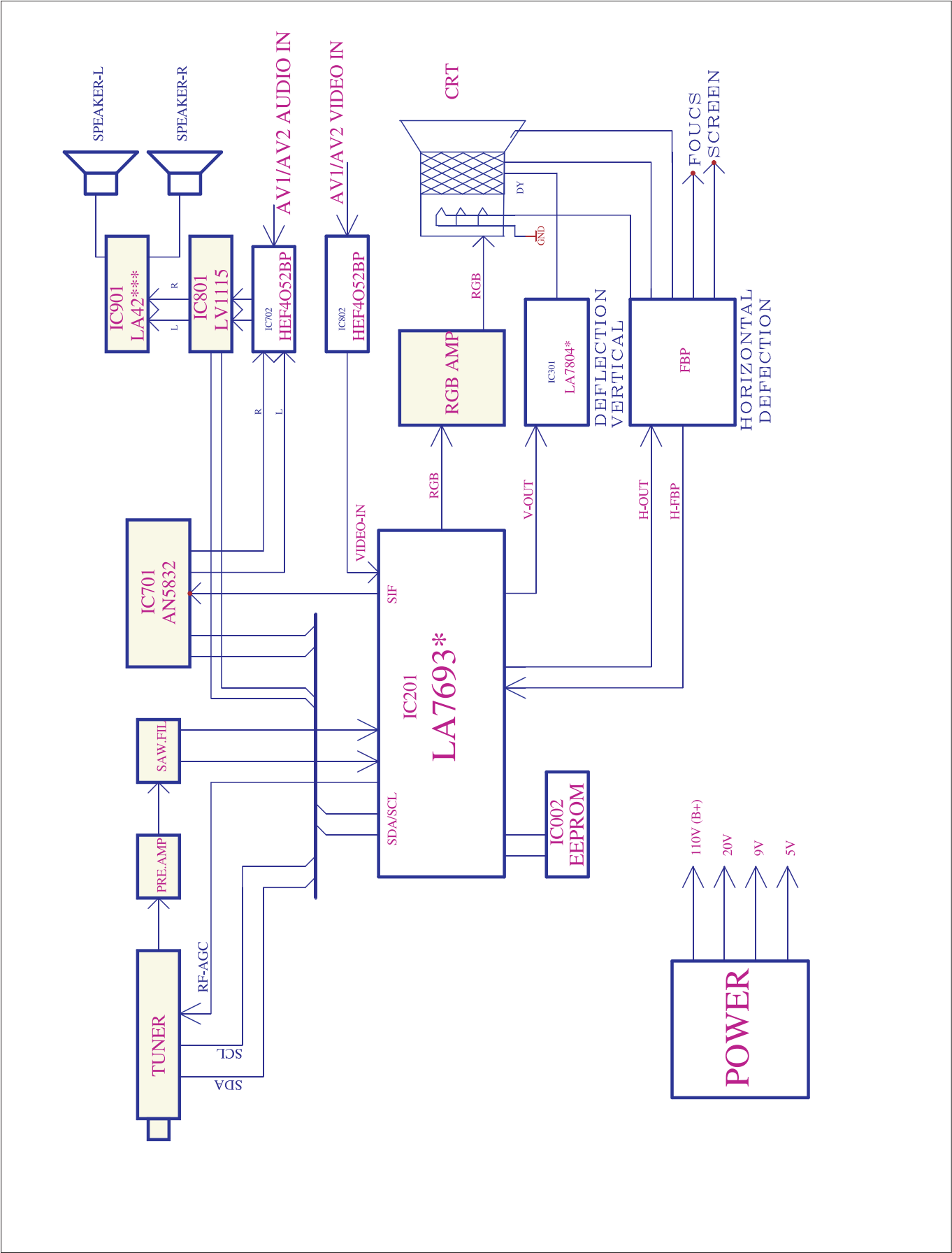
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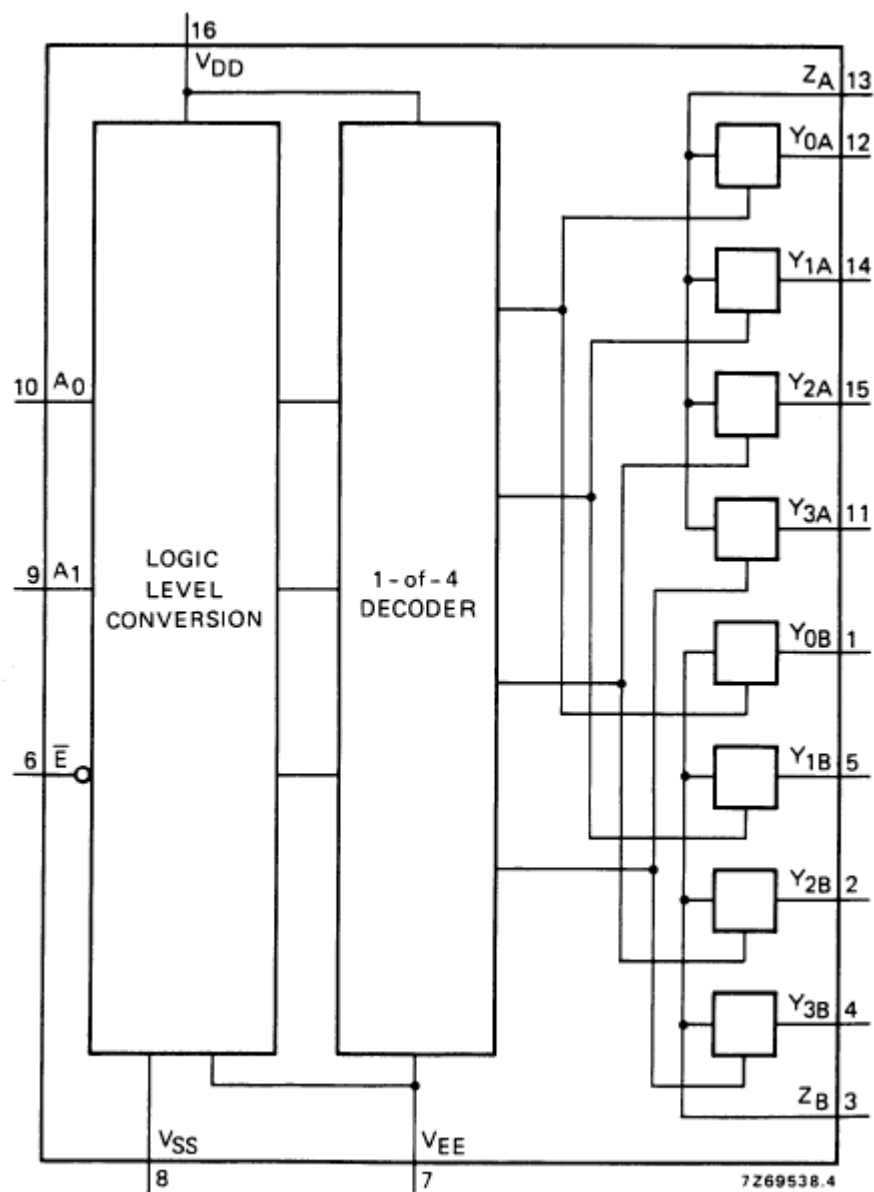
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Chassis Block Diagram



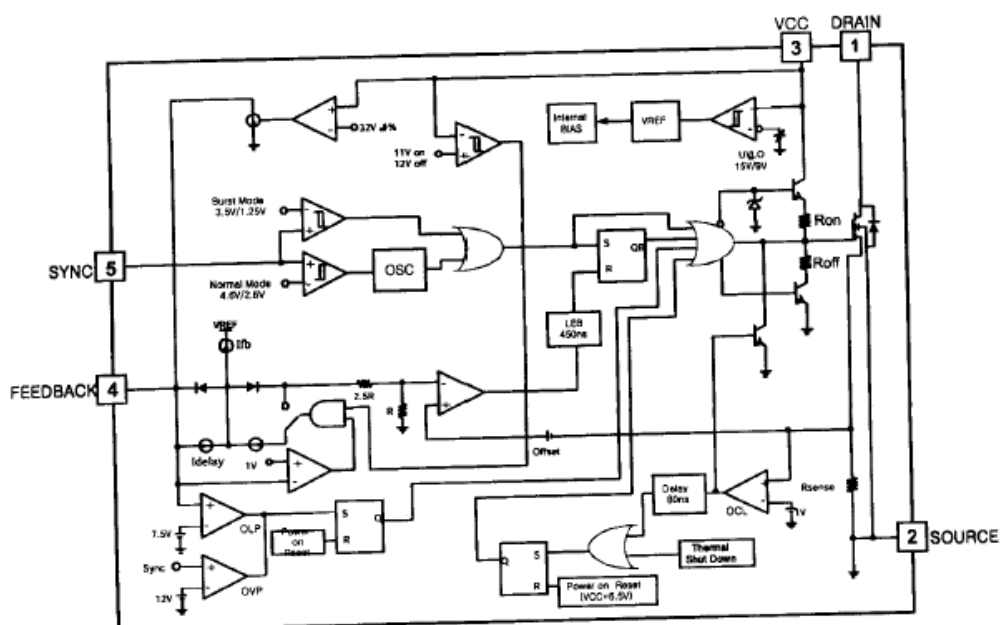
IC Block Diagram

IC 702 & 802 (HEF 4052B)

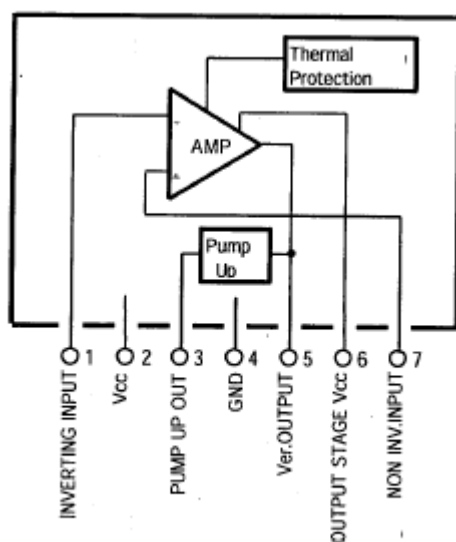


IC Block Diagram

IC500 (CQ0765)

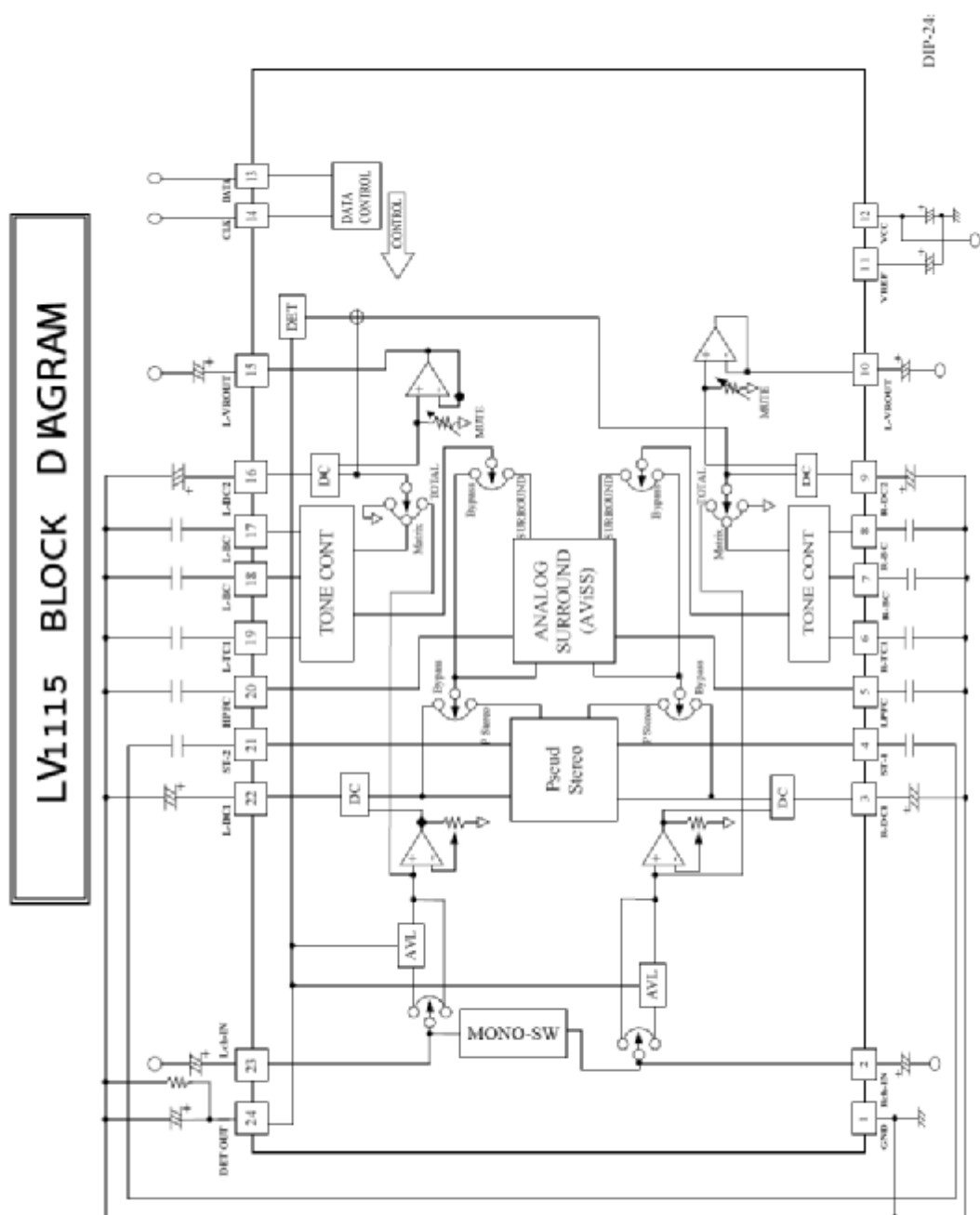


IC 301(LA7804*)



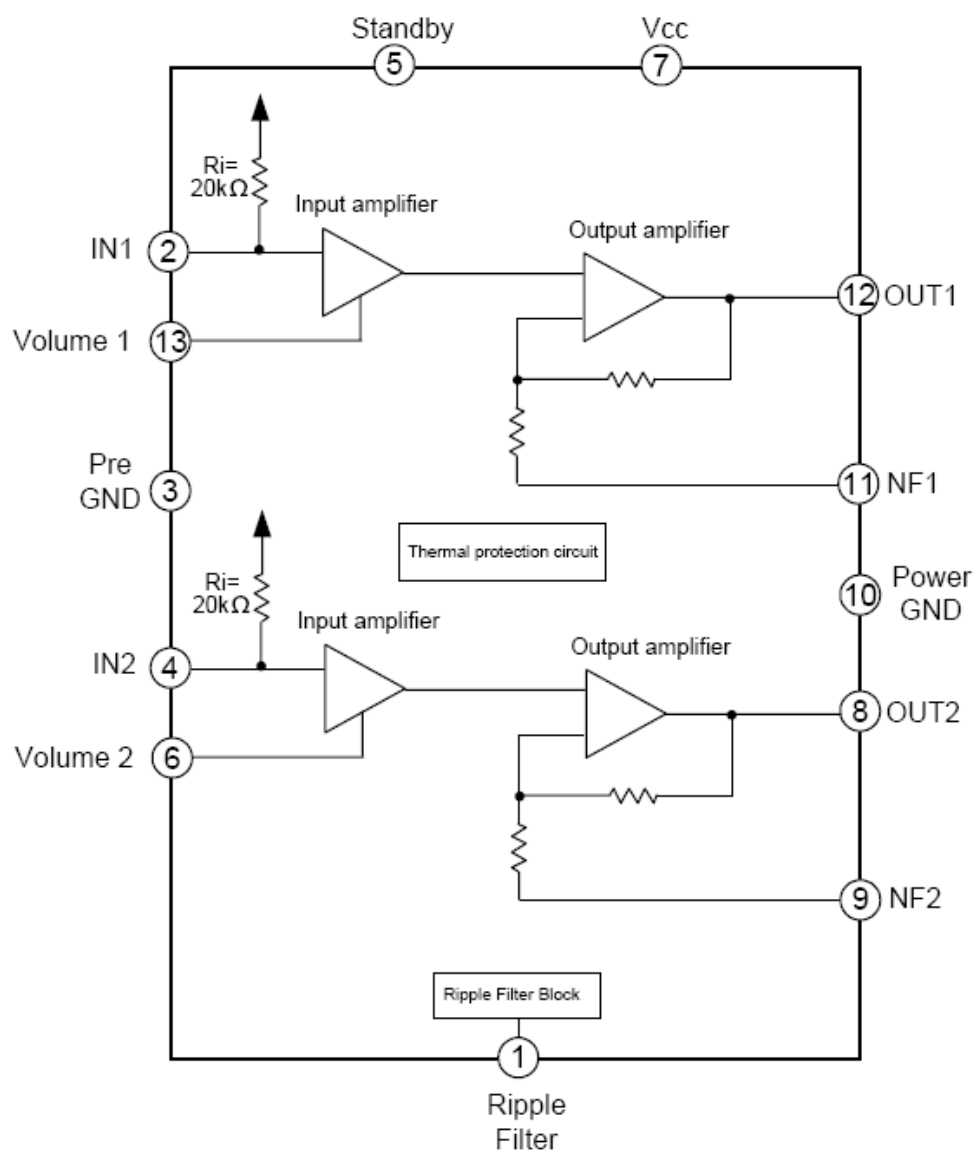
IC Block Diagram

IC 801 (LV1115)

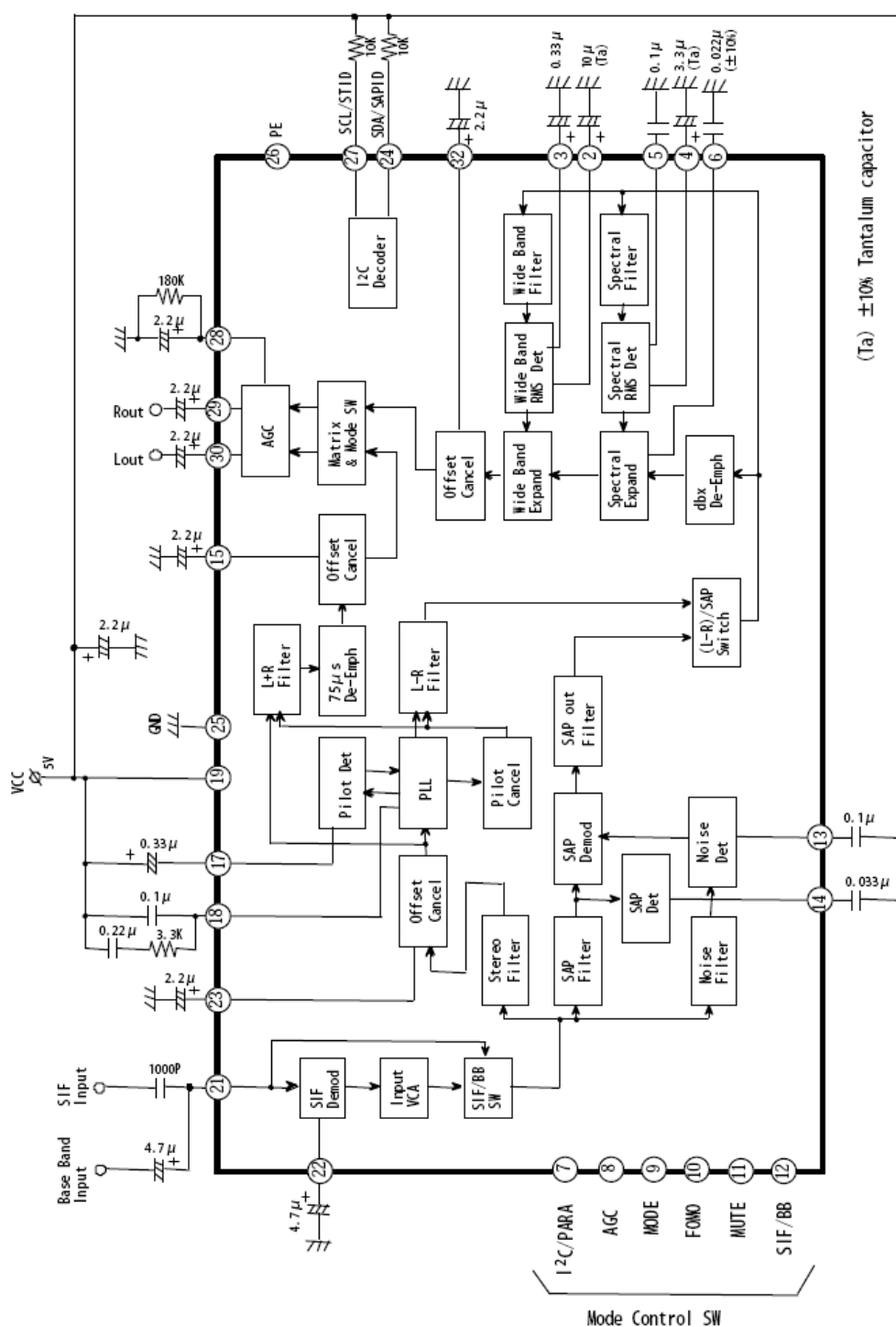


IC Block Diagram

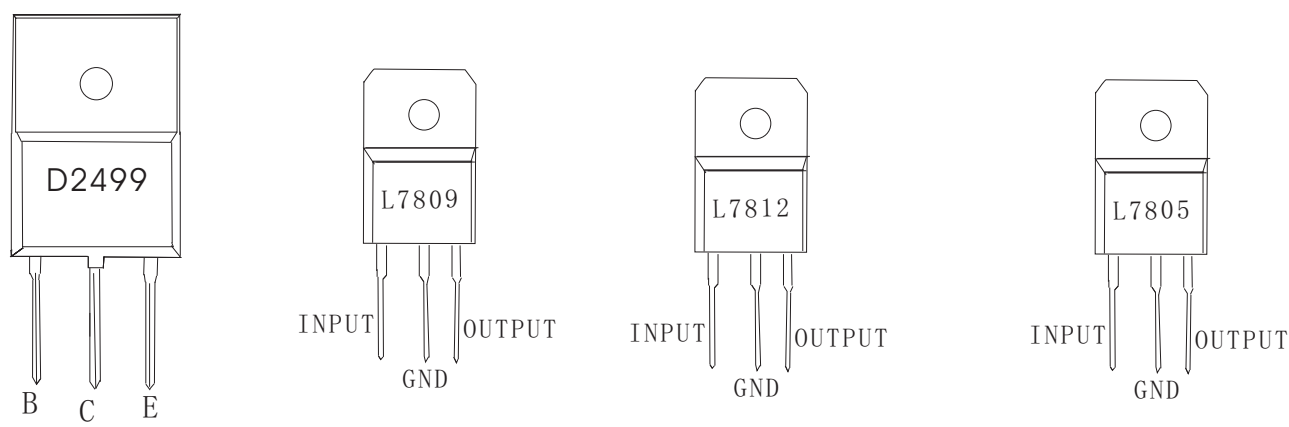
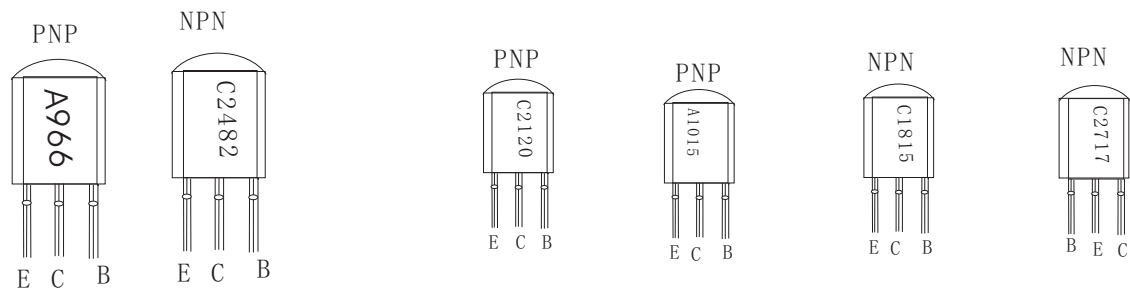
IC 901 (LA42***)



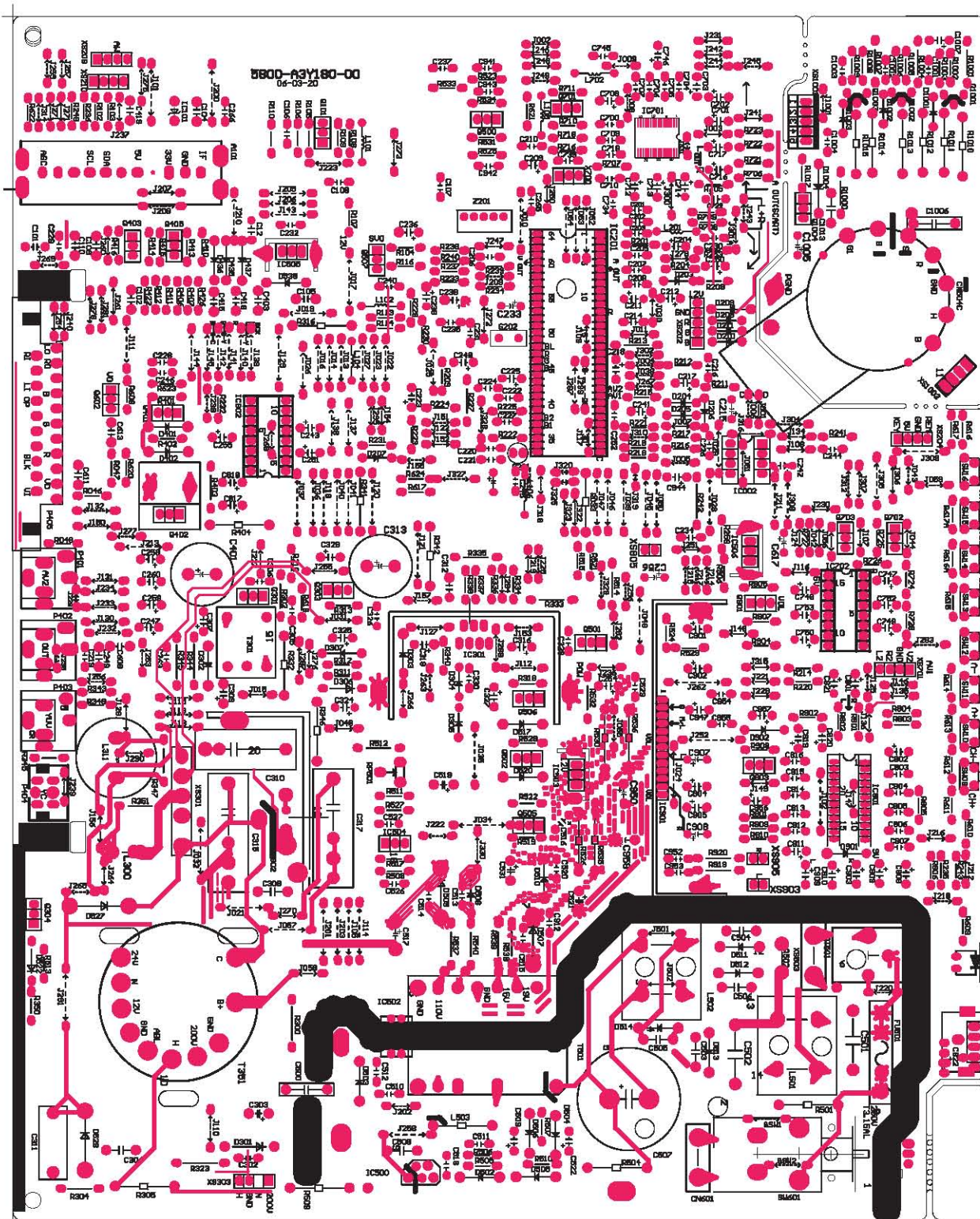
IC 701(AN5832SA)



Transistor Mark

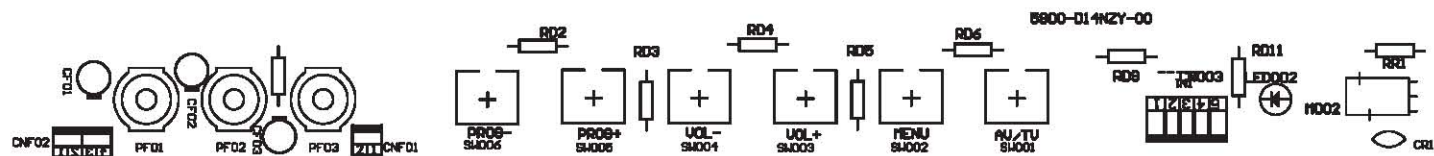


MAIN PCB BOTTOM Layer



CRT&FRONT AV&CONTROL PCB Top Layer

FRONT AV & CONTROL PCB TOP LAY



ALIGNMENT INSTRUCTION (3Y18)

1、Please notice the following before Servicing

- 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 disconnect the power plug from the wall outlet before servicing.
- 1-4、For safety reasons, all components equipped or replaced should be identical with BOM.
- 1-5、Before alignment, ensure the TV set has been heated for at least 30 minutes and degauss the CRT thoroughly with demagnetizer.
- 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、 Digital Voltmeter
- 2-5、 DC Regulated power supply.
- 2-6、 Sweep Signal Generator.
- 2-7、 20MHz 2-channel Oscilloscope.
- 2-8 、 Signal condition(Skyworth factory debug signal):

Item	Logo	Picture carrier	Pattern	System	Sound mode	Remark
1	CHN-1CH	49.75	PHILIPHS Picture	PAL—I	1KHZ	
2	WE-6CH	182.25MHz	Red filed	PAL—BG	L: R: 400HZ	A2 STEREO /TELETEXT
3	CHN-12CH	695.25MHZ	Grey/ Half color bar	SECAM-D/K	BTSC	
4	CHN-13CH	471.25	Cross hatch	PAL—D/K	1KHZ	
5	USA-3CH	61.25	Color bar	NTSC—M	1KHZ	
6		751.25	Monoscope	PAL—I	A: BTSC B: MUSIC C: 1KHZ	I NICAM
7	WE-S20CH	294.25	Half color bar	PAL—BG	A: 400HZ B: 1KHZ	STEREO
8		224.25	PHILIPHS Picture	PAL—BG	A: BTSC B: MUSIC C: 1KHZ	B/G NICAM
9		85.25	Cross hatch	PAL—DK	BTSC	16:9
10		199.25	Cross hatch	NTSC—M	BTSC	MTS

Service Adjustments

11	USA-31CH	573.25	Monoscope	NTSC—M	1KHZ	
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3、Adjust for main PCB

3-1、Power check

TESTING OF EACH VOLTAGE				
Item	Main voltage	Rating voltage	Power voltage	Testposition (positive pole of the capacitor)
1	B+ Power supply	110V \pm 1V	70V	C517
2	TFA Power supply (load)	192V	— —	C521
3	UOC Main resistance	15 \pm 1V	— —	C531
4	Memorizer power supply	5V \pm 0.5V	5V \pm 0.5V	
5	Tuner power supply	5V \pm 0.5V	0V	TUNER
6	Tune voltage	33V \pm 0.5V	— —	C104
7	Vertical power supply	26V \pm 0.5V	0V	C318
8	RGB power supply	200V \pm 10V	0V	C303

3-2、AGC adjustment

Method : Receive 60dB、471.25MHZ monoscope pattern, after pressing “MENU+Q.VIEW+MUTE” key three times TV SET will go to factory mode. Then pressing the “MUTE” key three times to go to P5, Select RF.AGC by pressing “PROG+” and “PROG-” keys. Adjust “VOL+” and “VOL-” key to obtain the clearest picture. press “MENU” key to exit the factory mode.

4、COMPLETE MACHINE GENERAL ADJUSTMENT:

4-1 、 Set TV to factory mode before aging line.

Method: Press “MENU+Q.VIEW+MUTE ” key to entering factory menu, And press “Q.VIEW” key to entering HEAT.RUN。 Press “MENU” key to exit factory mode !

4-2 、 Focus Adjustment.

4-2-1、Receive monoscope pattern.

4-2-2、Set TV to work in RICH status.

4-2-3、Adjust the focus knob of FBT to get the clearest picture.

4-3 、 Screen Voltage Adjustment :

4-3-1、Set TV at “TV” / “STANDARD” mode, no signal input;

4-3-2、Press key “MENU+Q.VIEW+MUTE” to enter factory mode P3 “V.KILL”.

Service Adjustments

4-3-3、 Press “VOL+ “button on Remote Control ;

4-3-4、 Adjust the screen knob of FBT to set the horizontal line just be seen, then press “MENU ”tton to return other factory menu .

4-4、 Horizontal Center and EW Adjustment

4-4-1、 Receive 60HZ cross hatch pattern . Set TV standard status . factory menu P2-60

Adjust H.PHASE to obtain picture’s horizontal center at the center of CRT screen in

factory menu60 HZ EW . Receive cross hatch pattern . Set TV standard status ,.Adjust EW.DC60、 EW AMP60、 EW.TILE60、 EW.COR. BOT60、 EW.COR.TOP60、 EW.COR.SW、 PORT TILTto obtain picture’s horizontal redisplay ratio more than 90% in factory menu 60 HZ EW.

EW.DC60	60HZ Horizontal amplitude
EW AMP60	60HZ EW width
EW.COR. TOP 60	60HZ EW upper corner parabola
EW .COR.BOTTOM60	60HZ EW lower corner parabola

4-4-2、 Receive 50HZ cross hatch pattern. Set TV standard status, Adjust H. PHASE

to obtain picture’s horizontal center at the center of CRT screen in factory menu P1-50. Adjust EW.DC50、 EW AMP50、 EW.TILE50、 EW.COR. BOT50、 EW.COR.TOP50、 EW.COR.SW、 PORT TILTto obtain picture’s horizontal redisplay ratio more than 90% in factory menu 50 HZ EW.

EW.DC50	50HZ Horizontal amplitude
EW.AMP50	50HZ EW width
EW.COR. TOP50	50HZ EW upper corner parabola
EW.COR. BOT50	50HZ EW lower corner parabola

4-5 、 Vertical size and Linearity Adjustment

4-5-1、 Receive 50HZ monoscope PATTERN. Set TV standard status. Adjust V.LINE、

V.SC and V. SHIFT to obtain vertical center at the center of CRT screen in factory menu P1-50.

4-5-2、 Receive 50HZ monoscope PATTERN. Set TV standard status. Adjust V.SIZE to obtain picture’s vertical redisplay ratio more than 90% in factory MENU.

V.LINE	50HZ Vertical linearity
V.SC	50HZ Vertical S-correction
V.SHIFT	50HZ Vertical center
V.SIZE	50HZ Vertical amplitude

Service Adjustments

4-5-3、Receive 60HZ monoscope PATTERN. Set TV standard status. Adjust V.LINE

and V.SC to change vertical size. Adjust V.SHIFT to obtain vertical center at

the center of CRT screen in factory menu P2-60 .

4-5-4、Receive 60HZ monoscope PATTERN. Set TV standard status. Adjust V.SIZE to obtain picture's vertical redisplay ratio more than 90% in factory MENU.

V.LINE 60HZ Vertical linearity

V.SC 60HZ Vertical S-correction

V.SHIFT 60HZ Vertical center

V.SIZE 60HZ Vertical amplitude

4-5-5、If necessary, adjust Horizontal Center and EW again.

4-6、 White Balance Adjustment

4-6-1、Set TV AV status and receive Black-White signal , connect the line to XS209, then go to auto white balance adjustment;

4-6-2、Disconnect the line when the adjustment is OK;

4-6-3、White Balance Adjustment (repairing)

4-6-4、Set TV AV status and receive Grey-White signal

4-6-5、The one sampling tube of CRT color analyzer (CA-100) covers on grey signal and the another covers on white signal;

4-6-6、Go to factory mode,. Obtain Grey signal X=281 , Y=311 by adjusting R-BIA、GBIA、B-BIA . Obtain White signal X=281 , Y=311 by adjusting R-DRV、G-DRV、B-DRV. Obtain both X=281 and Y=311 by adjusting the two status repeatedly .

4-6-7 Be this machine to take When the function of YUV and white balances be partial to, need the white balance adjustment of carry on the appearance of YUV.

Method: Enter the factory menu, adjust the YUV B- Y DC, the YUV R- Y DC to adjust to try again and again, make the white equilibrium the best.

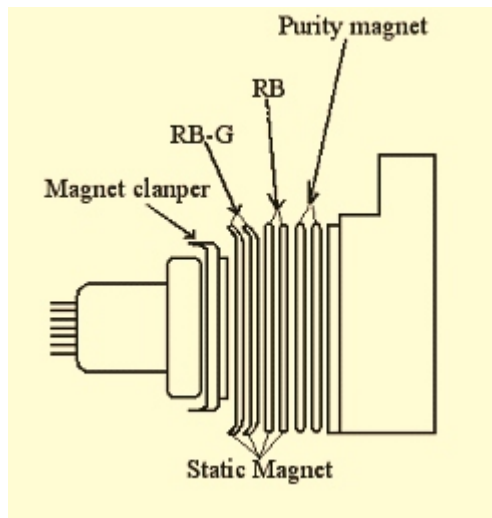
4-7、 CONVERGENCE ADJUSTMENT:

4-7-1、 Receive a dotted pattern. Set the TV receiver dynamic;

4-7-2 、 Loose the convergence magnet clamper and make red with blue dots at the

Service Adjustments

- center of the screen by rotating (R, B) static convergence magnets;
- 4-7-3、 Align Red/Blue with green dots at the center of the screen by rotating (RB-G) static convergence magnet;
- 4-7-4、 Remove the DY wedges and slightly tilt the deflection yoke horizontally and vertically to obtain the good edge convergence. Fix them after the good overall convergence got.
- 4-7-5、 Fix the convergence magnets in turn of Left-Low, Right-Low Right-Up , Left-Up
- 4-7-6 、 If purity error is found , adjust color purity.



4-8、 SUB BRIGHT ADJUSTMENT:

Receive the gray scale . Get into the menu of factory mode. Then adjust the SUB.BRI option to get a scale to be seen a little brightness(Only one-two rows can be seen).

5、 E2PROM Adjustment(Department of engineering adjustment)

5-1、 E2PROM Initializtion:

- 5-1-1、 When in repairing, we can replace E2PROM by other empty or unempty E2PROM,but you must initialize E2PROM to avoid unknown things.
- 5-1-2、 When in manufacturing, first you read the data from a master E2PROM 24C08, then write to other E2PR0M 24C08.

5-2、 Function adjustment (Department of engineering djustment)

Press remote control button MENU+Q.VIEW+MUTE to entering factory adjust mode. Press MUTE button to set up its function according as the order form.

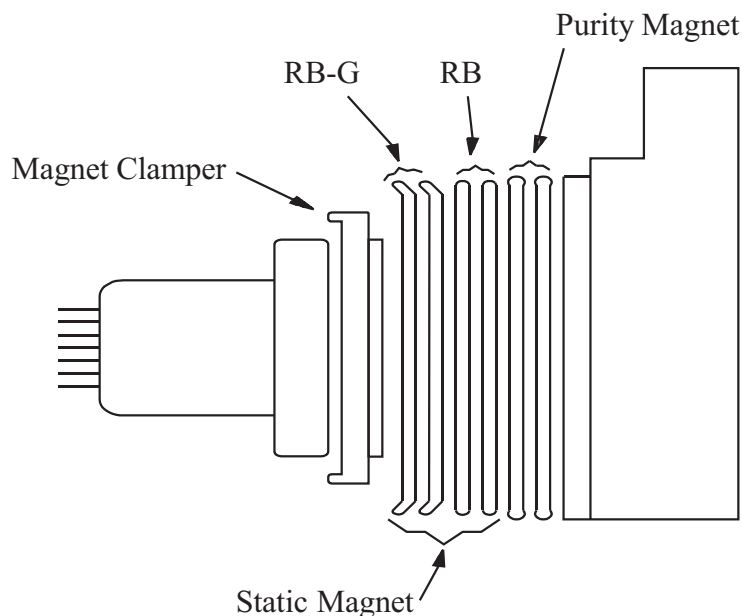
Purity and Convergence Adjustment

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

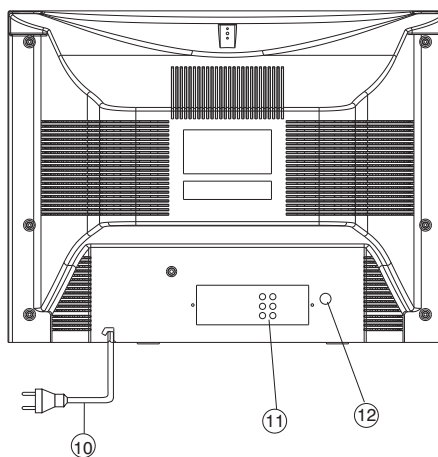
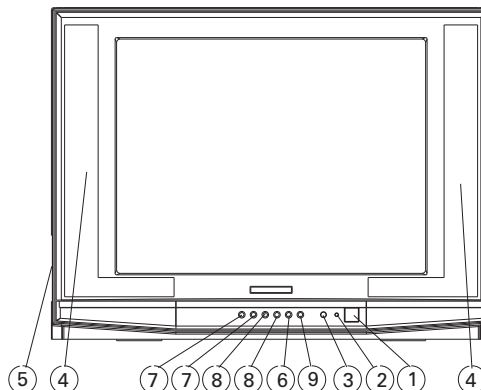
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- (5) Fix purity error is found, follow PURITY ADJUSTMENT instructions.



Control Location

CONTROL LOCATION

1. Power (Standby) Button
2. Standby Indicator
3. Remote Control Sensor
4. Speakers
5. Side AV In (Option)
6. Menu Button
7. Channel Down / Up Button
8. Volume Down / Up Button
9. AV/TV Button
10. AC Power Cord
11. Audio/Video - In/Out (Option)
12. Antenna Input Socket (75 ohm)



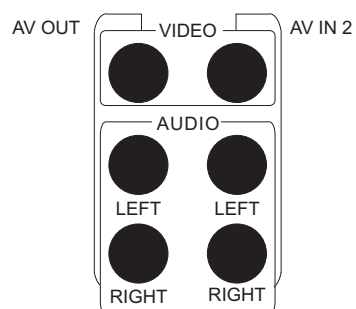
Input and Output Terminals

INPUT AND OUTPUT TERMINALS (OPTION)

VIDEO AND AUDIO INPUT/OUTPUT TERMINALS

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

*Please keep AC cord unplugged when connecting TV system.



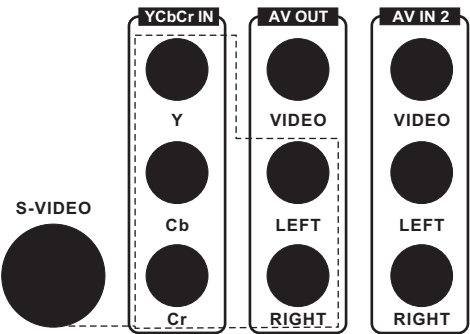
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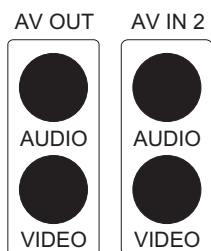
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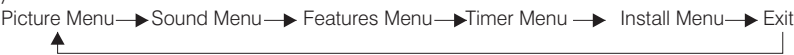
Operation Instructions

OPERATION INSTRUCTIONS

Turn the TV set on, then power indicator will light up. Press the program up or down button on the TV set, or press the on/off button on the remote control. The picture will appear after a few seconds. (If tuned on) The program number is displayed on the top right-hand corner of the screen.

MENU BUTTON

1. Press this button to select menu. PICTURE, SOUND, PRESET, TIME and SYSTEM can be selected cyclically.



2. After entering each menu, you can select the item which you will adjust by PROG. +/- buttons, and adjust this item by VOL. +/- buttons.

*The item which you select will change blue.

Picture menu

PICTURE	
CONTRAST	54
BRIGHTNESS	55
COLOR	60
SHARPNESS	50
TINT	00

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

*TINT is displayed only for NTSC and is not available for PAL or SECAM.

Sound menu (Option)

SOUND	
VOLUME	10
TREBLE	00
BASS	00
BALANCE	00
SURROUND	OFF
SOUND MODE	USER

In this menu you can adjust the tone of the TV output.

1. VOLUME

In this item, you can control the magnitude of the speakers output.

2. TREBLE

You can change the treble of the speakers output.

3. BASS

You can change the bass of the speakers output.

4. BALANCE

You can control the balance of the two speakers output.

5. SURROUND

You can get the surround effect by turning this item on.

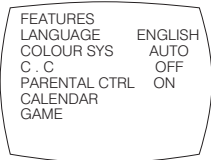
6. SOUND MODE

You can select present sound mode in this item.

Operation Instructions

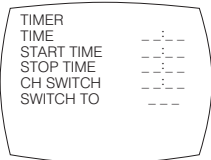
OPERATION INSTRUCTIONS

Features menu



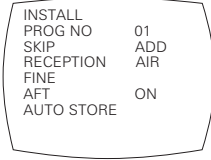
1. LANGUAGE
You can change language menu in this item.
2. COLOUR SYS
You can change present color system in this item.
3. C.C
Set the CCD OFF or ON.
4. PARENTAL CTRL
Input the password 1980 to call up V-CHIP, MPAA and TVPG item.
5. CALENDAR
(1) press VOL+ button to enter into CALENDAR menu.
(2) press VOL+ button to select YEAR, MONTH, DATE, and press VOL +/- button to adjust them.
6. GAME (Option)
You can play the game on TV.

Timer menu



1. TIME
You can adjust the currently time by this item. Press the VOL+ button set hour, and the VOL- button set minute.
2. START TIME
Set the time when the TV set turn on.
3. STOP TIME
Set the time when the TV set turn off.
4. CH SWITCH
Set the time when channel replace.
5. SWITCH TO
Set the program to switch to when the switch timer expires.

Install menu



1. PROG NO
In this item, you can store the channel number which are watching, and change the channel number by VOL. +/- Buttons (or number keys).
2. SKIP
You can set "ON" by VOL. +/- Buttons if you want to cancel the channel number which you are watching.
3. RECEPTION
You can select AIR, CATV-STD, CATV-IRC or CATV-HRC.
4. FINE
If fine item is selected, frequency data is fine tuned in upward or downward by the VOL. +/- buttons.
5. ATF
You can select on or off.
6. AUTO STORE
Press VOL. +/- Buttons, then the TV set will automatically search from V-L band to band.

Operation Instructions

OPERATION INSTRUCTIONS

SELECTING PROGRAM


Use 0-9 digit buttons to call directly on the program number that you want. If you want to select a double digits program number, firstly press "-/-" button, then input the two digits.

Program number can also be changed by "PROGRAM DOWN" and "PROGRAM UP" buttons. Press "PROGRAM UP" button, program number will increase. Press "PROGRAM DOWN" button, program number will decrease.

CHILD LOCKED

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

SET CHILD LOCKED:

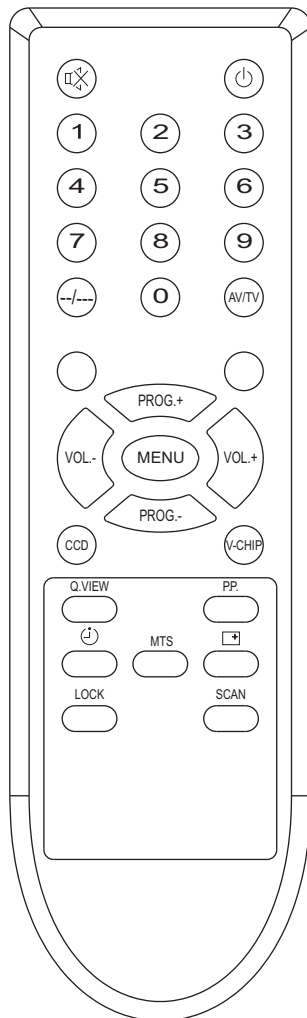
Press the "LOCK" button on remote unit. The key locked () is displayed on the screen. Then the symbol will disappear after five seconds and enter child locked mode. You can't use any key on the TV set.

RELEASE CHILD LOCKED:

You can cancel this mode by pressing the "LOCK" button again.

Operation Instructions

LOCATION OF CONTROL (REMOTE HANDSET UNIT)



STAND BY BUTTON ()

Press this button to turn the TV on/off. Press any Number Button or Program Up/Down Button, picture and sound will come on within a few seconds.

MUTE BUTTON()

Press once to mute the sound, press again to return to previously set sound level.

SOUND SYSTEM BUTTON (SYS.)

Press this button to select the correct sound system.

5.5M → 4.5M → 6.5M → 6.0M

PROGRAM SELECTION BUTTONS (0-9, -/--)

Push the number for your desired program and the program indicator will be displayed on the screen.

Press -/-- key to select one digit or two digit entry, to select program 0-9, use one digit entry, to select 10-99 use two digits entry.

Press number key 0-99 for program selection.

PROGRAM UP/DOWN BUTTON (PROG. +/-)

Press the Program Up Button to select the program forwards.

Press the Program Down Button to select the program backwards.

Operation Instructions

LOCATION OF CONTROL (REMOTE HANDSET UNIT)

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

Press Volume Up/Down Buttons to adjust sound level.


PERSONAL PRESETS BUTTON (P.P.)

You can select DYNAMIC, MILD, COLORFUL, STANDARD and CUSTOM by pressing this button.

RECALL BUTTON ()

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

SLEEP BUTTON ()

This key is used to set the sleep timer in 15 minutes step up to two hours. When the preset time runs to 0, TV set will go into stand by mode. To switch off this function, press this key step by step until "  -" is displayed on the screen.

LOCK BUTTON

The key is to prevent a child watching the TV, please refer to page 5 for the details.

QUICK VIEW BUTTON (Q.VIEW)

Press this button to return to the previously viewed program.

AV/TV BUTTON

Press this button to display external video signal such as VCR or CD video player. AV will be displayed on the screen. Press this button again to switch back to TV signal from AV.

MENU BUTTON (MENU)

Use "MENU" button for tuning procedure, please refer to page 4-5 for the details.

SCAN BUTTON

Press this button, you can automatically browse the every channels which you have.

MTS BUTTON

Press the MTS button, you can select MONO STEREO SAP if this Program signal have been STEREO and SAP signal.

CCD BUTTON

Press the "CCD" button you can enter the CCD menu.

V-CHIP BUTTON

Press the "V-CHIP" button you can enter the V-CHIP menu.

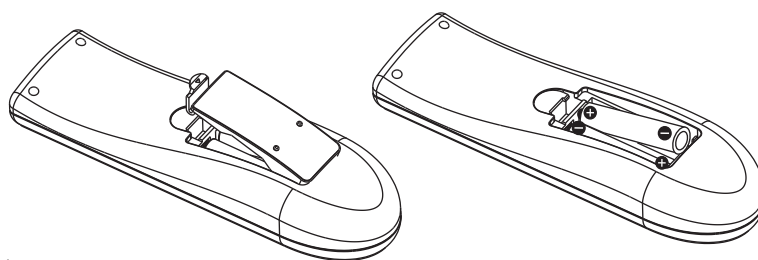
Operation Instructions

BATTERY INSTALLATION (REMOTE CONTROL UNIT)

1. Remove the battery cover.
2. Insert the 2 UM4-AAA 1.5V batteries making sure the polarity (+ or -) of the batteries matches the polarity marks inside the unit.
3. Replace the battery cover.

Replace with new batteries when the TV set begins to show the following symptoms:

Operation is unsteady or erratic. Sometimes the TV set does not function with Remote Control Unit.



Remark:

- 1) Alkaline Batterie Recommended
- 2) Remove batteries when they are exhausted or if the remote control is not to be used for a long time.

THE CAUSES OF INTERFERENCE

Incorporated in your TV receiver are the most up-to-date devices to eliminate interference. Local radiation however, can create disturbances which visibly affect your picture. Proper installation, a good aerial are your best safe-guards against these disturbances.

RF INTERFERENCE

Moving ripples across the screen are caused by nearby transmitting or receiving-short-wave radio equipment.

DIATHERMY

Herringbone pattern and partial picture loss can result from the operation of diathermy equipment from a nearby doctor's surgery or hospital.

SNOW

Weak TV signals from long distant stations result in an instead picture and give the effect of falling snow. An antenna adjustment or antenna amplifier may be needed.

GHOST

Multiple image caused by TV signals reflected back from surrounding buildings, hills, aircraft, etc. is minimized by correct aerial positioning.

CAR IGNITION

Nearby cars and electrical motors can cause small streaks across the picture or make the picture roll.

Mechanical Disassemblies

CABINET BACK REMOVAL

1. Refer to Figure 1, remove 7 screws.
2. Pull off cabinet back and remove.

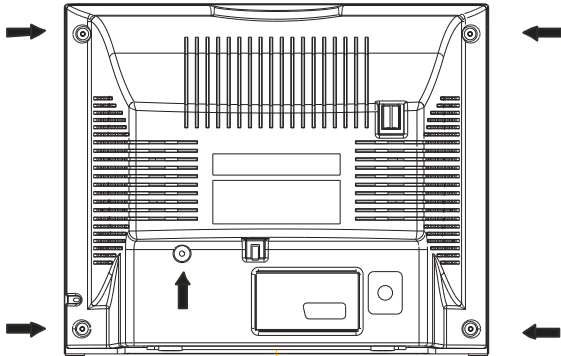


Figure 1. Cabinet Back Removal

CHASSIS REMOVAL

1. Remove cabinet back.
2. Discharge the picture tube anode (2nd anode lead) to the degaussing (picture tube grounding lead).
3. Disconnect Degaussing coil socket (KE), Picture tube socket, Deflection yoke connector (KDY), Speaker connectors (KL and KR), and 2nd anode lead.
4. Remove chassis completely by sliding it straight back.

PICTURE TUBE REMOVAL

CAUTION: Do not disturb the deflection yoke or magnet assembly on the picture tube Neck. Care must be taken to keep these assemblies intact, unless the picture tube is being replaced. Discharge the picture tube to the coating before handling the Tube.

1. Remove chassis, referring to Chassis Removal instructions.
2. Place cabinet front faced down on the soft surface.
3. Remove the screw on each corner of the picture tube and GENTLY lift the picture tube out of the cabinet.
4. Install a replacement picture tube in reverse order.

Properly install the degaussing coil and picture tube grounding lead on the picture tube. See Figure 2.

Note: If the Picture Tube is being replaced, mount the Degaussing Coil on the picture tube. See following..

