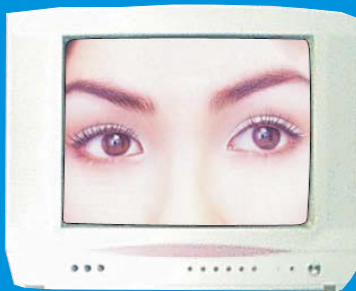


HT-3768

COLOUR TELEVISION

Service Manual



1. Technical specifications & Safety precautions.....	2
2. Servicing precautions.....	3
3. Functions & Location of controls.....	8
4. Brief operation instructions.....	10
5. Disassembly instructions.....	11
6. Specific information.....	13
7. Electrical adjustment.....	30
8. Information of Resistors and capacitors.....	32
9. Damageable parts list.....	34
10. Appendix.....	35

■ Features

- 37cm super flat picture tube
- Auto search 218 programs presetting and memory
- Child Lock & On Screen Help Function

Haier group

Contents

1. Technical specifications & Safety precautions	3
2. Servicing precautions	4
3. Functions & Location of controls	10
4. Brief operation instructions	12
5. Disassembly instructions	13
A. Important notes	12
B. Precautions for handling of picture tube	12
C. Exploded of cabinet parts	12
6. Specific information	15
A. Principle integrated circuits	15
B. Service mode and adjusting items and data	20
C. Error detection process	22
7. Electrical adjustment	25
8. Information of Resistors and capacitors	27
9. Damageable parts list	
Replacement parts list	28
10. Appendix	30
Circuit block diagram	
Circuit diagrams	

I. TECHNICAL SPECIFICATION & SAFETY PRECAUTIONS

POWER SUPPLY: AC150-AC 250V, 50 /60Hz

- Tuning system: voltage synthesized type auto-search fine tuning system
- IF: 38.9MHz
- Power consumption: $\leq 70W$
- Antenna input impedance: 75Ω
- Receiving system:
 - a) Color system: PAL/NTSC3.58MHz/4.43MHz
 - b) Broadcast TV system: B/G
- Language displayed: English
- Video input: $1.0V_{P-P}$ (75Ω)
- Audio input: $436m V_{rms}$ ($40K\Omega$)

SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical identify these parts and mechanical parts in this chassis have special safety-related characteristics! In the Schematic Diagram and Replacement Parts List.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.

Do not modify the original design without permission of the manufacturer.

General Guidance

An Isolation Transformer should always be used during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents that might result in personal injury caused by electrical shocks.

It will also protect the receiver and it's components from being damaged by accidental shorts of the circuitry that might be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with a specified one.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep

the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to the high vacuum and large surface area of the picture tube, extreme care should be taken in handling the Picture Tube. Do not lift the Picture Tube by its Neck.

X-RAY Radiation

Warning:

The source of X-RAY RADIATION in this TV receiver is the High Voltage Section and the Picture Tube.

For continued X-RAY RADIATION protection, the replacement tube must be of the same type as specified in the Replacement Parts List.

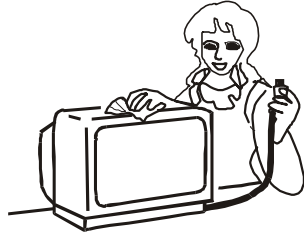
Before returning the receiver to the customer,

Always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to make sure that the set is safe to operate without any danger of electrical shock.

II. SERVICING PRECAUTIONS

Warning and Cautions

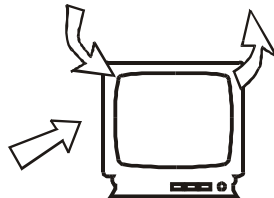
1. When you clean the TV set, please pull out the power plug from AC outlet. Don't clean the cabinet and the screen with benzene, petrol and other chemicals.



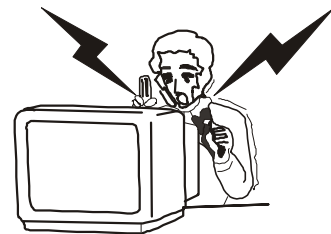
4. To prevent the TV set from firing and electric shock, don't make the TV set rain or moisture.



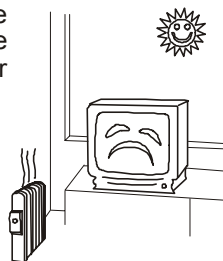
2. In order to prolong the using life of the TV set, please place it on a ventilated place.



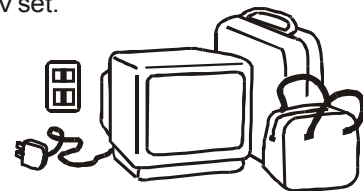
5. Don't open the back cover, otherwise it is possible to damage the components in the TV set and harm you.



3. Don't place the TV set in the sunshine or near heat source.



6. When the TV set isn't going to be used for long time or it is in thunder and lightning, please pull out the plug from AC outlet and the antenna plug from the cover of the TV set.



Explanation on the display tube

Generally, it is not needed to clean the tube surface. However, if necessary, its surface can be cleaned with a dry cotton cloth after cutting off the power. Don't use any cleanser. If using hard cloth, the tube surface will be damaged.

CAUTION: Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the **SAFETY PRECAUTIONS**.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

Remember: Safety First.

General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before:
 - a. Removing or reinstalling any component, circuit board module or any other assembly of the receiver.
 - b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
 - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.

CAUTION: A wrong substitution part or incorrect installation polarity of electrolytic capacitors may result in an explosion hazard.

- d. Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage-measuring device (DVM, FETVOM, etc.) equipped with a suitable high voltage probe. Do not test high voltage by “drawing an arc”.
3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do not spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)

CAUTION: This is a flammable mixture.

Unless specified otherwise in this service manual, lubrication of contacts is not required.

6. Do not defeat any plug / socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.

Always remove the test receiver ground lead last.

9. Use with this receiver only the test fixtures specified in this service manual.

CAUTION: Do not connect the test fixture ground strap to any heat sink in this receiver.

Electrostatic ally Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components are usually called Electrostatic ally Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type folder removal device. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise even some normally harmless motions such as mutual brushing of your clothes’ fabric or lifting of your foot from a carpeted floor might generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range of 500 °F to 600 °F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.

3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a mall wire bristle (0.5 inch, or 1.25cm) brush with a metal handle. Do not use freon-propelled spay-on cleaners.
5. Use the following unsoldering technique
 - a. Allow the soldering iron tip to reach normal temperature. (500° F to 600° F)
 - b. Heating the component lead until the solder melts.
 - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device with solder braid.

CAUTION: Work quickly to avoid overheating the circuit board printed foil.

6. Use the following unsoldering technique
 - a. Allow the soldering iron tip to reach normal temperature. (500° F to 600° F)
 - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.
 - c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.

CAUTION: Work quickly to avoid overheating the circuit board printed foil.

- d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

Remove /Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are of slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined.

Removal

Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.

Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

Carefully insert the replacement IC in the circuit board.

Carefully bend each IC lead against the circuit foil pad and solder it.

Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

“Small-Signal” Discrete Transistor Removal/Replacement

Remove the defective transistor by clipping its leads as close as possible to the component body.

Bend into a “U” shape the end of each of three leads remaining on the circuit board.

Bend into a “U” shape the replacement transistor leads.

Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the “U” with long nose pliers to insure metal to metal contact then solder each connection.

Power Output, Transistor Device Removal/Replacement

Heat and remove all solder from around the transistor leads.

Remove the heat sink mounting screw (if so equipped).

Carefully remove the transistor from the heat sink of the circuit board.

Insert new transistor in the circuit board.

Solder each transistor lead, and clip off excess lead.

Replace heat sink.

Diode Removal/Replacement

Remove defective diode by clipping its leads as close as possible to diode body.

Bend the two remaining leads perpendicularly to the circuit board.

Observing diode polarity, wrap each lead of the new diode round the corresponding lead on the circuit board.

Securely crimp each connection and solder it.

Inspect (on the circuit board copper side) the solder joints of the two “original” leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections

CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds foil to the circuit board causing the foil to separate from or “lift-off” the board. The following guidelines and procedures should be followed

whenever this condition is encountered.

At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

At other connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife.
Remove at least 1/4 inch of copper, to insure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side.

Carefully crimp and solder the connections.

CAUTION: Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

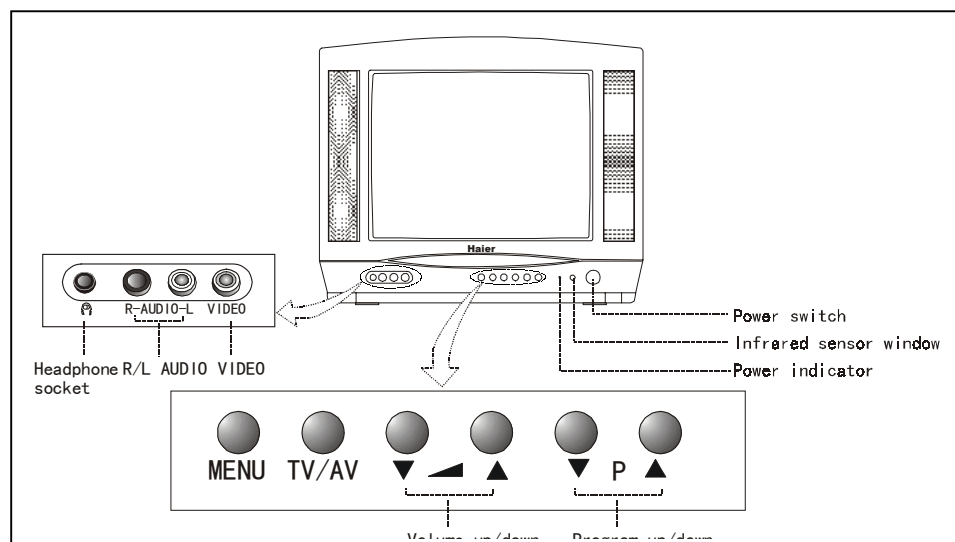
III. FUNCTIONS & LOCATION OF CONTROLS

- ALL-BAND CATV (470MHz)

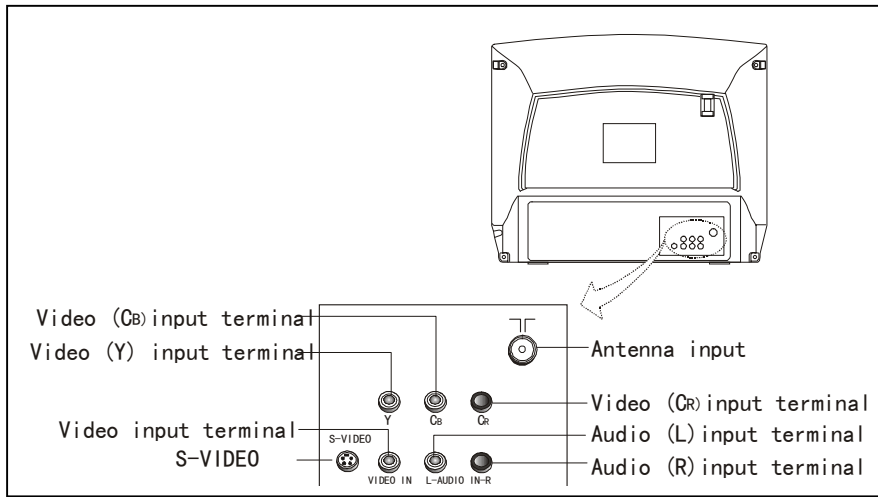
- I²C bus control
- Auto-manual tuning
- Audio/video input t interfaces
- Multiple picture modes selection
- Screen saver when no signal
- 218 programs Preset
- Slide curtain power on/off display, improved eye protection

Location of controls

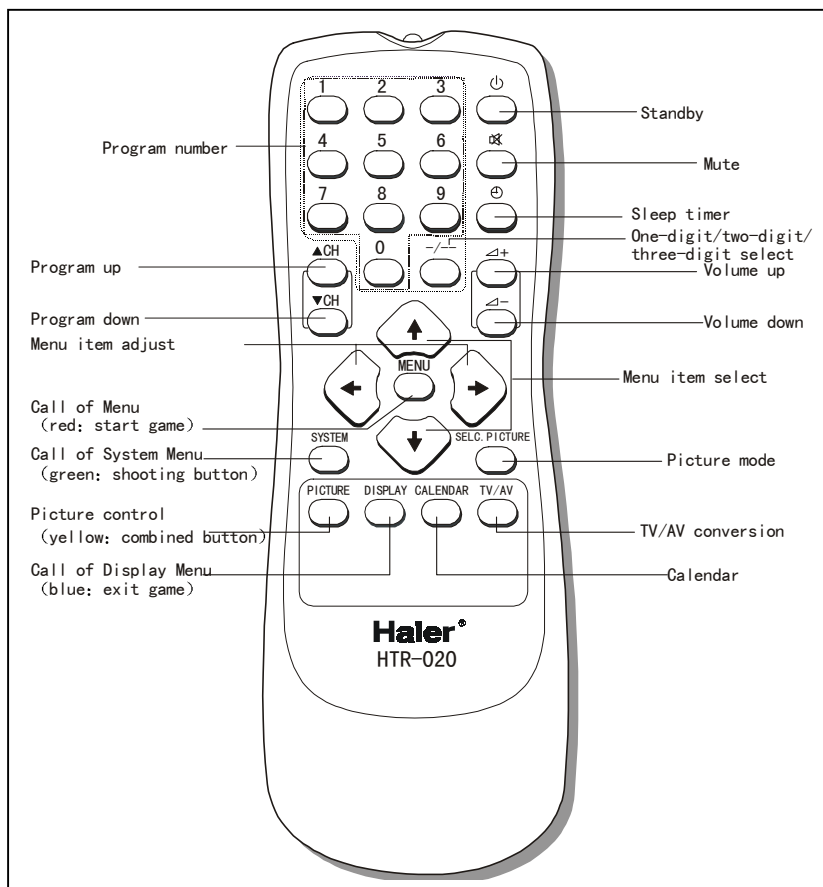
Front panel of the TV set




Rear panel of the TV set



Remote Controller








IV. BRIEF OPERATION INSTRUCTIONS





Insert the power plug into the power line socket and insert the antenna plug into the antenna socket on the rear panel. Press down the power switch of the TV set. The red indicator light goes on. If no picture appears, press the button  on the remote controller. Follow the steps below.

A. Program preset





1. Auto searching and storing program

Press MENU button on the remote controller then use the “” key to call up the “tune program” menu on the screen. Then Press the menu”  “ item to select it. Use the “” key to select the bar “auto search program” then press the “” to make sure. If you want to stop ,press the key “”.

2. Manual search and fine tune

Press MENU button then use the “” key to call up the “tune program” menu on the screen. Then Press the menu”  “ item to select it. Use the “” key to select the bar “Manual search program” then press the “” to make sure.

3. Deleting channel number

Press Program up/down buttons to select a channel to skip. Press MENU to call Menu. then use the “” key to call up the “tune program” menu on the screen. Then Press the menu”  “ item to select it. Use the “” key to select the bar “Cannal number” then press the “” to make sure. Enter the number that you do not want to see .Then Then select “SKIP” and select SKIP to ON. Now the program number is deleted. Repeat the above steps and select SKIP to OFF, the deleted program number can be resumed.

B. Volume tuning

Press VOLUME buttons  - to increase and  + to decrease the volume.

C Personal preference settings

Picture modes

Press SELC PICTURE repeatedly to change among MEMORY 1, MEMORY2, MEMORY3, to chang the Picture Mode.

V. DISASSEMBLY INSTRUCTIONS

A. Important note

This set is disconnected from the power supply through the converter transformer. An isolating transformer is necessary to service operations on the primary side of the converter transformer.

B. Back Cabinet Removal

Remove the screw residing on the back cabinet and carefully separate the back cabinet from the front cabinet.

C. Picture tube handling caution

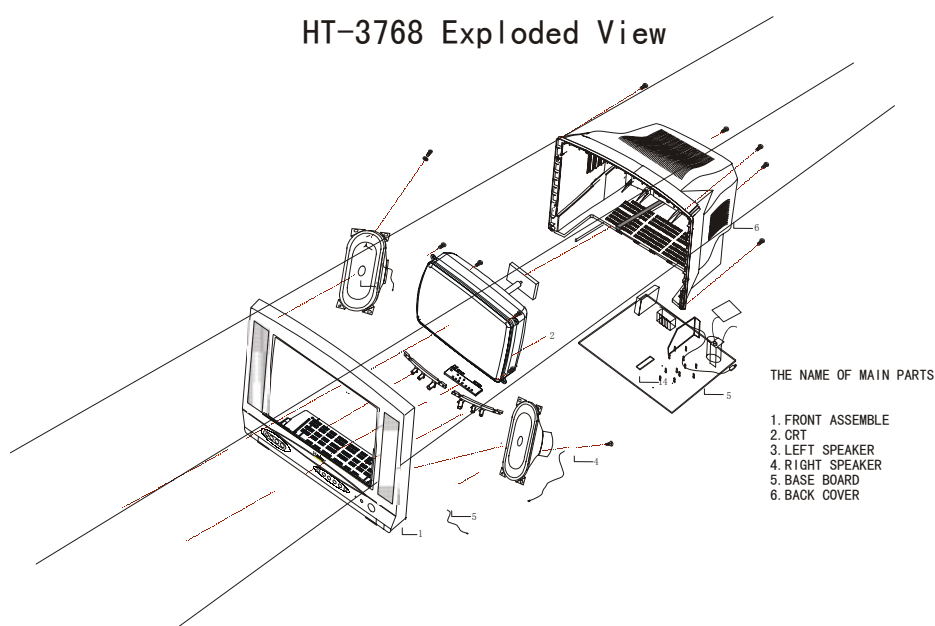
Due to high vacuum and large surface area of picture tube, great care must be exercised when handling picture tube. Always lift picture tube by grasping it firmly

around faceplate.

NEVER LIFT TUBE BY ITS NECK! The picture tube must not be scratched or subjected to excessive pressure as fracture of glass may result in an implosion of considerable violence that can cause personal injury or property damage.

EXPLODED VIEW OF CABINET PARTS

Model: HT-3768(PAL/BG)



Exploded view parts list

Model: HT-3768

NO.	Name of part	Part specialized code	QTY.
1	Power button	0090201538	1
2	Front frame	0090202354	
3	Jiggle button	0090201537	1
4	Light conductive pole	0090201536	1
5	Color picture tube	0094000202	1

6	Rear cover	0090202355	1
---	------------	------------	---

VI. SPECIFIC INFORMATIONS

A. Principle integrated circuits

A1. HT-3768 color TV set composed of the following sections

- (1) Small signal processing: super monolithic integrated circuits N204(TMPA8803CSN). and memory N901 (AT24C08).
- (2) Sound power amplifying: integrated circuits N701 (TDA2611).
- (3) Horizontal and Vertical scan output circuits: Vertical output integrated circuits N402 (LA7840), Horizontal output transistor V411 (2SD2499), Horizontal flying back transformer T402 (JF0501-19908).
- (4) Switch power supply: switch transformer T501 (BCK-08A6), power transistor V503 (2SC4584).
- (5) AV switch integrated circuits N203 (TC24C08).

A2. Main integrated circuits:

- | | |
|-----------------|---|
| (1) TMPA8803CSN | Microprocessor
Picture IF/sound IF/video processing/H and V
Scan/color decoding |
| (2) TDA2611 | Vertical output integrated circuits |
| (3) LA7840 | Sound power amplifying integrated circuits |

A3. Electrical circuit analysis

1、Microprocessor and Small signal processing: super monolithic integrated circuits : TMPA8803CSN

TMPA8803CSN is super large integrated circuit decoder, containing intermediate image amplifying, intermediate sound amplifying, horizontal and vertical scan, small signal processing, color decoding, hi-pressure tracing and over-load protection, I²C bus control.

Information introducing functions and testing data for maintenance is listed in Table 1.

Table 1

Step	Function	Working Voltage (V)	Ground Resistance (R)	
			Positive (Ω)	Negative (Ω)
1	BAND1	0	600	5000

2	BAND2	1.8	600	5000
3	KEY INPUT	5	600	15000
4	DIGITAL GND	0	0	0
5	CPU RESET	5	600	10000
6	CPU CLOCK	2.3	600	1000
7	CPU CIOCK	2.0	600	15000
8	TEST	0	0	0
9	+5 VCC	5	400	4500
10	GND	0	0	0
11	SIGNAL GND	0	0	0
12	HORIZONTAL SYNC SIGNAL INPUT	1	750	150
13	HORIZONTAL RETURN PULSE SIGNAL INPUT CHARACTER HORIZONTAL LOCATION	1.7	500	550
14	HORIZONTAL AGC	6.3	750	1400
15	VERTICAL SIGNAL PRODUCE LOCATION	4.3	750	1500
16	VERTICAL RETURN PULSE SIGNAL INPUT CHARACTER VERTICAL LOCATION	5.3	750	1300
17	HORIZONTAL VCC	8.7	100	100
18	NC	0	700	900
19	Cb SIGNAL INPUT	2.4	750	5000
20	Y SIGNAL INPUT	2.4	750	5000
21	Cr SIGNAL INPUT	2.4	700	4500
22	TV GND	0	0	0
23	COLOR SIGNAL INPUT	0	0	0
24	EXTERIOR VEDIO SIGNAL INPUT2	2.4	700	4500
25	TV VCC	3.4	320	300
26	VEDIO SIGNAL INPUT	2.6	750	5000
27	AUTOMATIC BRIGHT CONTROL	4.5	750	5000
28	AUDIO OUTPUT	3.5	750	1400
29	+9 VCC	8.8	100	100
30	IF SIGNAL OUTPUT	3.6	700	950
31	SIF SIGNAL OUTPUT	1.8	700	2100
32	EXTERIOR SIGNAL INPUT	4.3	750	1400
33	SIF SIGNAL INPUT AND LEVEL REVIS	2.9	750	5000
34	DC FEEDBACK	2.2	750	1400
35	PIF PLL	2.4	500	1500
36	+5 VCC	5	750	1100
37	FLITE RIPPLE	2.1	750	4000
38	DEEMPHA	4.4	700	1400
39	IF AGC	1.7	0	5000
40	IF GND	0	650	0
41	IF INPUT	0	650	4500
42	IF INPUT	0	750	4500
43	RF AGC	3.5	500	1400
44	Y/C VCC +5	5	600	1100
45	MONITOR OUTPUT	1.9	650	2200
46	BLACK EXTEND	1.8	750	5000

47	COLOR DECODE PLL	2.5	0	5000
48	GND	0	100	0
49	+9V VCC	8.7	750	100
50	RED SIGNAL OUTPUT	2.9	750	1100
51	GREEN SIGNAL OUTPUT	2.9	750	1100
52	BLUE SIGNAL OUTPUT	3.1	0	1100
53	TV SIMULATE GND	0	0	0
54	GND	0	400	0
55	+5V VCC	5.1	600	4500
56	MUTE	0	600	7500
57	I ² C SERIAL BUS DATA LINE 0	0	600	12500
58	I ² C SERIAL BUS COLOCK LINE 0	0	600	12500
59	NC	0.1	600	12500
60	TUNE VOLTAGE	4.4	600	10000
61	AV CHOICE CONTROL	0.2	600	10000
62	HORIZONTAL SYNCHRONIZATION SIGNAL	4.5	600	12500
63	REMOTE CONTROL INPUT	5	600	12500
64	SLEEP CONTROL	3.6	600	8000

2. Analysis of common path circuits

High frequency television signals, received via an antenna (or transmitted through a cable TV system) to the input terminal of the high frequency tuner A101, are processed for tuning and high frequency amplifying and mixing, then a 38.9MHz image intermediate frequency and 34.4MHz and intermediate frequency signal will be released at the IF terminal of Z101 to b of the transistor V101 , where signals are amplified to compensate for the insertion losses of the sound surface wave filter. Single or dual-ended input is used for the sound surface wave filters Z101 of this appliance according to system properties. Intermediate frequency signals will be transmitted to (41) and (42) of N204(TMP8803SN). The mixed signals of picture video signals and secondary sound intermediate frequency signals output from (31) of N204, After sound carrier frequency is trapped by the trap filter, intermediate frequency signals are amplified and PLL image decoded, The AGC time constant is dependent on C205 (0.22u) connected to (39) of N204 (TMP8803SN),.

3. Analysis of sound power amplifying circuits

Sound power amplifying circuits are composed of integrated circuits TDA2611 and peripheral components. TDA2611 is an integrated electrical circuit . Information introducing functions and testing data for TDA2611 maintenance is listed in Table 4. T if a cylindrical color card is installed then a fluke III digital multimeter is used.

Table 4

No.	Function	Working Voltage (V)	Grounding Resistance (R)	
			Positive (Ω)	Negative (Ω)
1	+16V POWER SUPPLY	16	0.43	1.8
2	AMPLIFIED AUDIO SIGNAL OUTPUT	7.5	0.58	1.6
3	GROUND	0	0	0
4	RIPPLE FILTER	5.1	0.66	1
5	GROUND	0	0	0
6	AUDIO SIGNAL INPUT	1.7	0.76	2
7	NEGATIVE FEEDBACK	2.05	0.78	1.9

3. Analysis of vertical sync and vertical scan output circuits

The field sync signals segregated from compound sync signals are used to activate the vertical frequency segregation system which commences when a set amount of vertical sync pulse signals are tested. Of the sync pulse frequencies obtained from segregation, some are transmitted to the vertical tooth wave generator. The vertical frequency tooth wave, after geometric processing, is transmitted from (16) of N204 (TMP8803SN) to (5) of vertical scan output IC N402 (LA7840). The external resistor R443 (5.6K Ω) of N204 (16) provides a reference current to the vertical tooth wave generator. The external capacitor C244 (0.1 μ F) of pin (2) forms the vertical ramp wave. The vertical ramp wave is sending the pin (4) of the vertical scan output integrated circuit N402 that is a complete bridge current drive output circuit. After shaped and amplified the vertical ramp wave is output from pin (2) of N402.

Information introducing functions and testing data for LA7840 maintenance is listed in Table 4. if a cylindrical color card is installed then a fluke III digital multimeter is used.

Table 5

No.	Function	Working Voltage (V)	Grounding Resistance (R)	
			Positive (Ω)	Negative (Ω)
1	GROUND	0	0	0
2	VERTICAL SCAN WAVE OUTPUT	13	0.45	1.9
3	PUMP UP OUT	25	0.5	∞
4	VERTICAL RAMP WAVE INPUT	0.95	0.9	1.25
5	WAVE CORRECTION	0.75	0.68	1.75
6	+25V POWER SUPPLY	25	0.5	2.95
7	VERTICAL SYNC DETECT	0.83	0.65	1.3

4. Analysis of horizontal sync and horizontal scan output circuits

As the horizontal oscillation circuit is installed inside N204 (TMP8803SN), . Some

brightness signals including compound sync signals are transmitted to the internal sync segregation circuits, where horizontal sync and vertical sync pulses are segregated. R321 (10K), R462 (12K) ,C452 (3900pF) ,VD436 and T402 are connected to N204 (13) are phase-lock loop filters. Horizontal pumping signals are transmitted from (13) of N204 to horizontal promotion transistor V444 (2SC2383), and then drive the H-DRIVE transformer. After being amplified through it switches power transistor V411 (2SD2499) to control the horizontal scan of the electronic-beam.C412 is a horizontal S correction capacitor and L414 is for horizontal linear inductor. T402 is a horizontal output transformer. The horizontal return pulse output from (8) of T402 is transmitted to pin (27) of N204 who controls ABL circuits. ABL avoid high-voltage over rated value that will cause X-ray and affect your health.

5. Analysis of video amplifying circuits

The video amplifying circuits are comprised of V601, V611, V621 and peripheral components. B, G and R signals output from N204 (50), (51) and (52), 3 video power transistor are available for amplifying the input R, G, B. White balance adjustment is completed through N901 under control of an I²C serial bus control system.

6. Analysis of switching mode power circuits

The installed switching mode power source is a typical autonomous pulse switch power source. The circuits are comprised of switching transistor V513, switching mode transformer T501, bridge-rectifier components. When the switch is set to on, the pulse voltage of the 220V voltage rectified by VD501 rectifier is filtered by the capacitor C507 (150uF) to obtain +300V direct current, which is added through (3)-(4) of the switching mode transformer T501 to the collective polar of switching transistor V513 (2SC4584). V503, Primary coil 3-7 and feedback coil 1-2 form a self-actuated oscillator. When the appliance is first switched on. Some 560Vp-p voltage oscillating pulses will come into being and the duty ratio is controlled by C515. The shut down time of V513 is controlled by V512. The current passed V512 is larger and the operating time of V513 is shorter and the output voltage is smaller. The coupler VD515 (PC817B inlet) functions to control voltage, and the voltage tolerance information from RP501 and V506 are transmitted to V501 to control the switch velocity and hold the output voltage normal.

The pulse voltage output from the secondary (12) of the switching mode transformer T501, rectified and filtered by VD556 and C563 is +110V direct current voltage which is the main voltage. The pulse voltage output from (13) is rectified and filtered by VD555 and C561 and the resultant +180V direct current voltage is supplied. The pulse voltage output from (16) is rectified and filtered by VD516 and C552 and the resultant +19V direct current voltage is supplied to the sound power amplifying circuits. The pulse voltage output from (15) is rectified

and filtered via VD515 and C542 to obtain +25V direct current voltage to supply the vertical scan IC. The pulse voltage output from (14) is rectified and filtered via VD513 and C532 to obtain +15V direct current voltage. +12V direct current voltage output from N506 (3), after rectification of the secondary source, +9V and +5v are supplied to the decoder chip. And CPU. The voltage of VT comes from the main voltage.

B. Service mode and adjusting items and data

1.Factory adjustment information

Operation method: after the appliance is switched on, make the volume value to zero. Then press “◀” key on the TV set and press the DISP button on remote controller at the same time to enter the S state. Press DISP button one times and “S” will disappear, Repeat the first step, you will enter the D mode. Now one “D” is displayed on the TV screen.

Press PRO- and PRO+ buttons to select items for adjustment.

Press VOL- and VOL+ buttons to adjust selected items.

Press the POWER button to switch off the appliance and go back to the normal state.

Maintenance menu (Table 8)

Item	Specifications	Default Value	Variable Mark
RCUT	RED CUT OFF BALANCE	20	*
GCUT	GREEN CUT OFF BALANCE	20	*
BCUT	BLUE CUT OFF BALANCE	20	*
GDRV	GREEN DRIVE BALANCE	40	*
BDRV	BLUE DRIVE BALANCE	40	*
CNTX	CONTRAST MAX VALUE	3F	
BRTC	BRIGHTNESS	48	
COLC	NTSC COLOUR CENTER VALUE	40	
TNTC	TINT CENTER VALUE	40	
COLP	PAL COLOUR CENTER VALUE	20	
COLS	SECAM COLOUR CENTER VALUE	40	
SCNT	SUB CONTRAST	0B	
CNTC	SUB CONTRAST CENTER VALUE	30	
CNTN	SUB CONTRAST MIN VALUE	00	
BRTX	SUB BRIGHTNESS MAX VALUE	30	
BRTN	SUB BRIGHTNESS MIN VALUE	30	
COLX	SUB COLOUR MAX VALUE	35	
COLN	SUB COLOUR MIN VALUE	00	
TNTX	SUB TINT MAX VALUE	28	
TNTN	SUB TINT MIN VALUE	28	

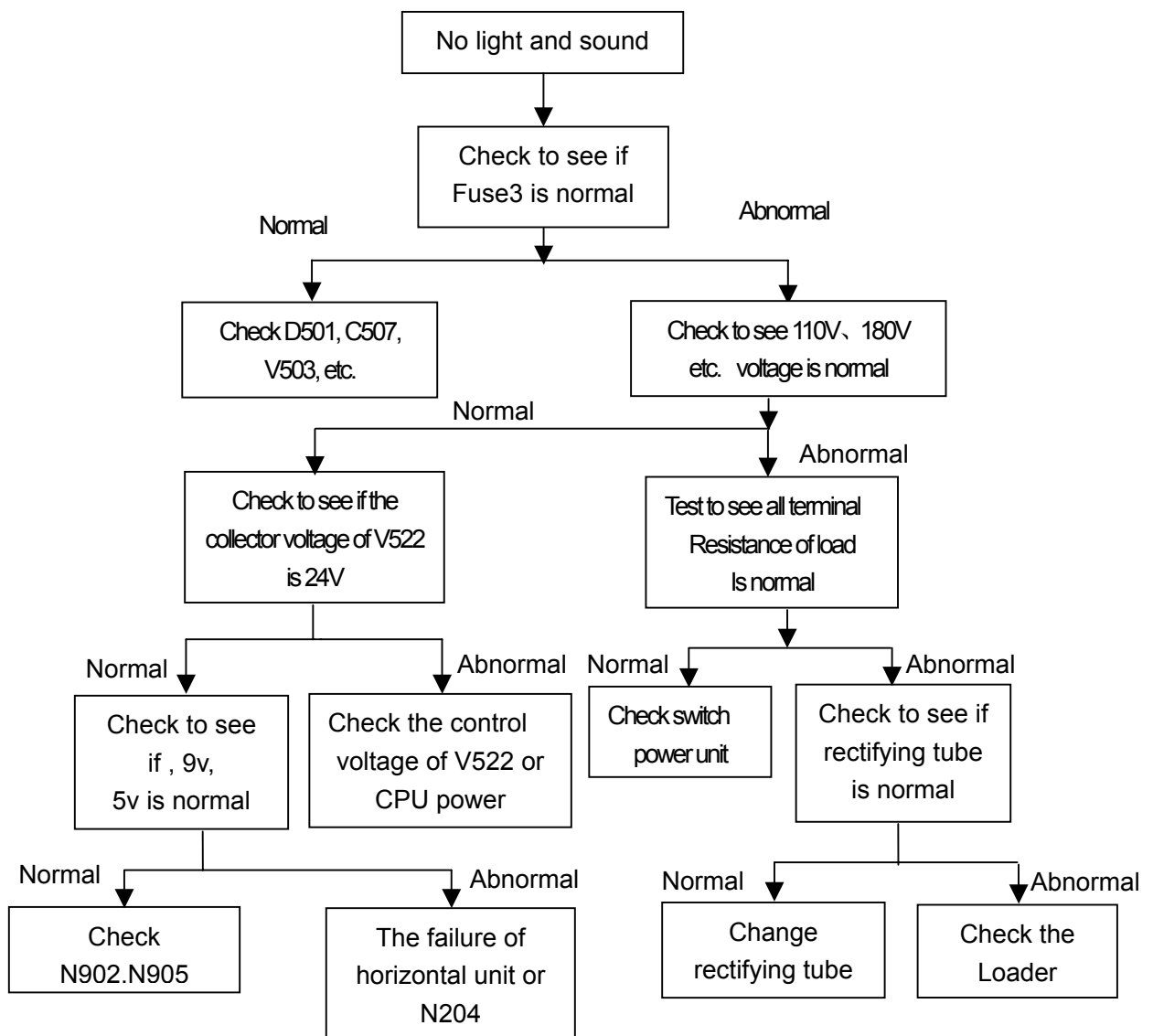
ST3	TV-3.58 SHARPNESS	25	
SV3	AV-3.58 SHARPNESS	25	
ST4	TV-4.43 SHARPNESS	25	
SV4	AV-4.43 SHARPNESS	25	
SHPX	SHARPNESS MAX VALUE	35	
SHPN	SHARPNESS MIN VALUE	35	
TXCX	OSD CONTRAST MAX VALUE	35	
RGCN	OSD CONTRAST MIN VALUE	25	
VM0	VCD DATUM0	0E	
VM1	VCD DATUM1	00	
HPOS	50Hz HORIZONTAL POSITION	00	*
VP50	50Hz VERTICAL POSITION	00	*
HIT	50Hz VERTICAL HEIGHT	14	*
HPS	50/60Hz HORIZONTAL POSITION	03	*
VP60	60Hz VERTICAL POSITION	00	*
HITS	50/60Hz VERTICAL HEIGHT	01	*
VLIN	50Hz VERTICAL LINEAR CORRECTION	0C	*
VSC	VERTICAL S CORRECTION	06	*
VLIS	50/60Hz VERTICAL LINEAR CORRECTION	FE	*
DPC	50Hz PINCUSHION CORRECTION	00	
DPCS	50/60Hz PINCUSHION CORRECTION	00	
KEY	50Hz TRAPEZIUM CORRECTION	00	
KEYS	50/60Hz TRAPEZIUM CORRECTION	00	
WID	50Hz HORIZONTAL WIDTH	00	
WIDS	50/60Hz HORIZONTAL WIDTH	00	
VCP	VERTICAL COMPENSATION	00	
CNR	CONNER CORRECTION	00	
HCP	HORIZONTAL COMPENSATION	00	
SBY	SECAM B-Y	08	
SRY	SECAM R-Y	08	
RAGC	RADIO FREQUENCY AGC	23	
AFT	AUTO FREQUENCY TRACE	15	
HAFC	HORIZONTAL AUTO FREQUENCY CONTROL	00	
V25	25 PERCENT OF VOLUME	25	
V50	50 PERCENT OF VOLUME	50	
BRTS	SUB BRIGHTNESS	00	
VM2	SYS	30	
MOD0	MODE0	00	
MOD1	MODE1	02	
MOD2	MODE2	0C	
SELF	ROM DATA CHECK SELF	00	
SELF VOC	VCO CHECK SELF	80	
SELF AGC	AGC CHECK SELF	80	
SELF BRTC	BRIGHTNESS CENTER VALUE CHECK SELF	75	
SELF CNTC	CONTRAST CENTER VALUE CHECK SELF	23	
SELF TNTC	TINT CENTER VALUE CHECK SELF	00	

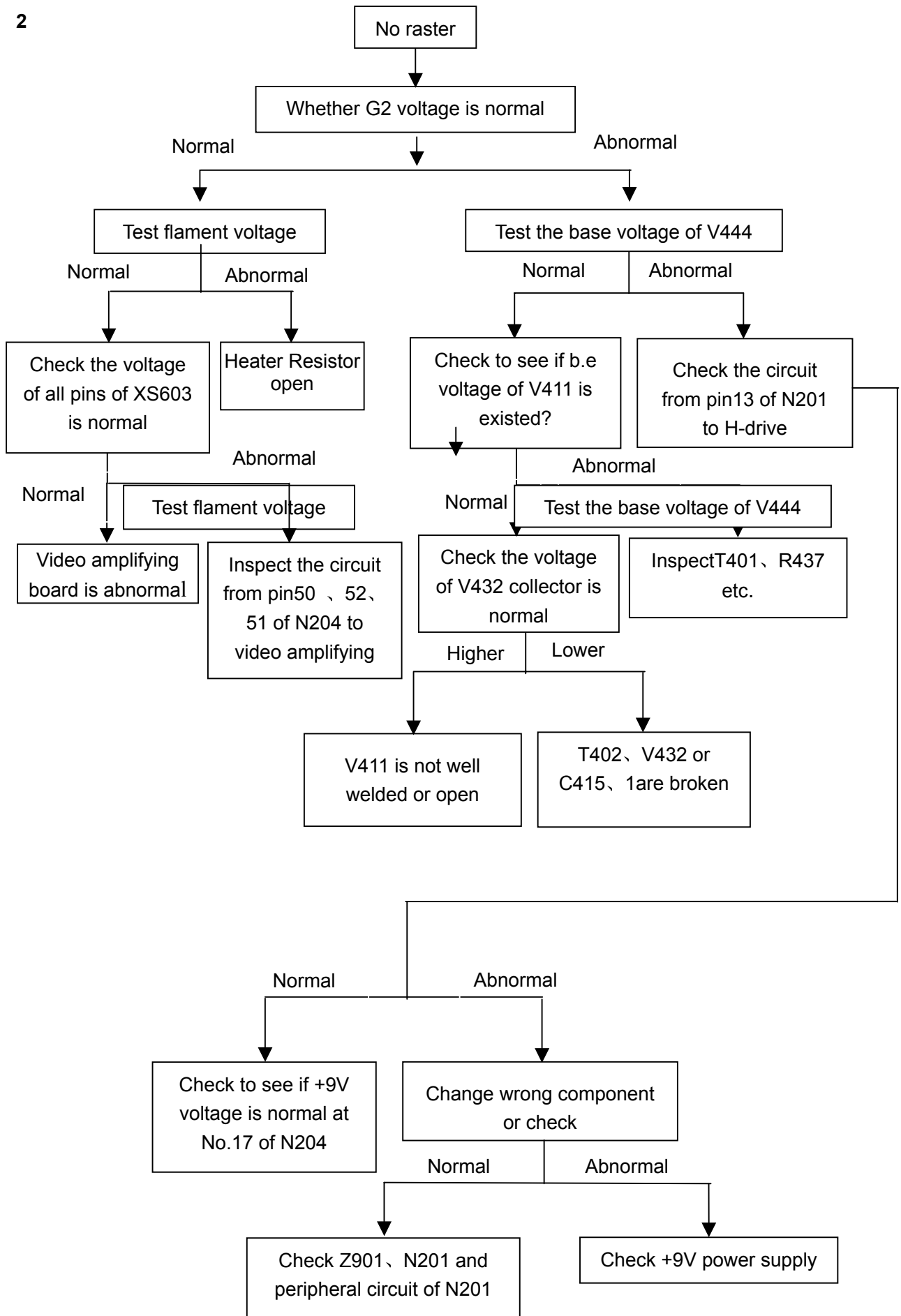
SELF COL	COLOUR CENTER VALUE CHECK SELF	20	
OSD	OSD POSITION	07	
OPT	OPTION	07	

You can change the DATA with “*” mark when necessary.

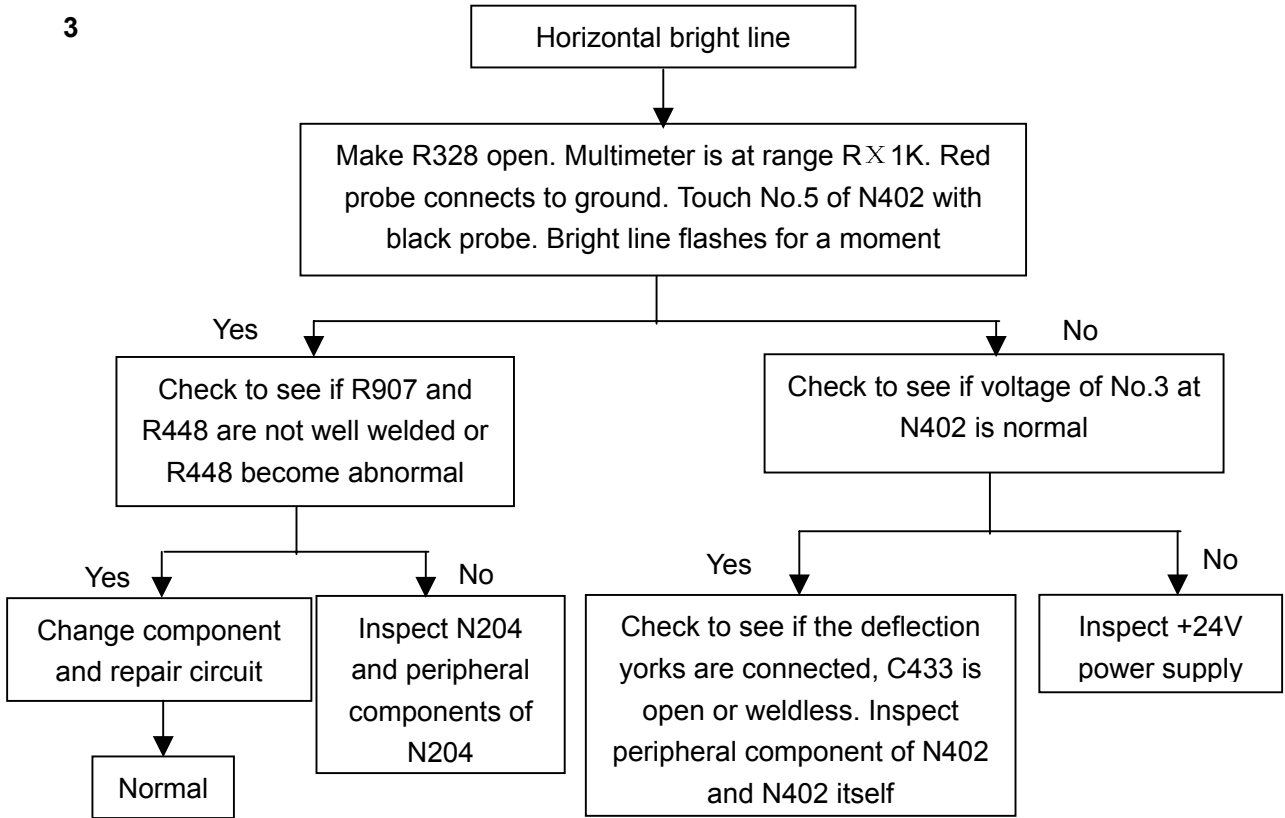
C. Error Detection Process

1.

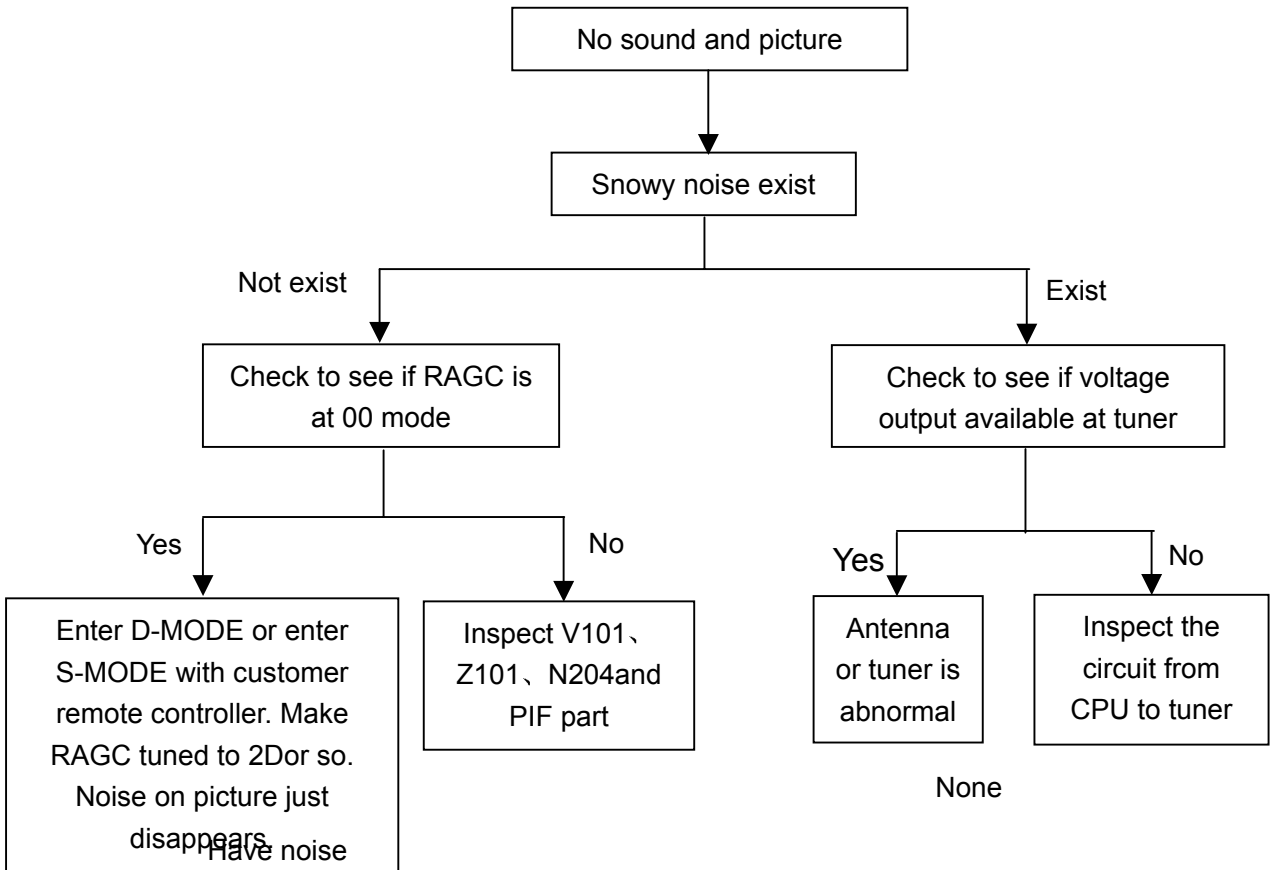




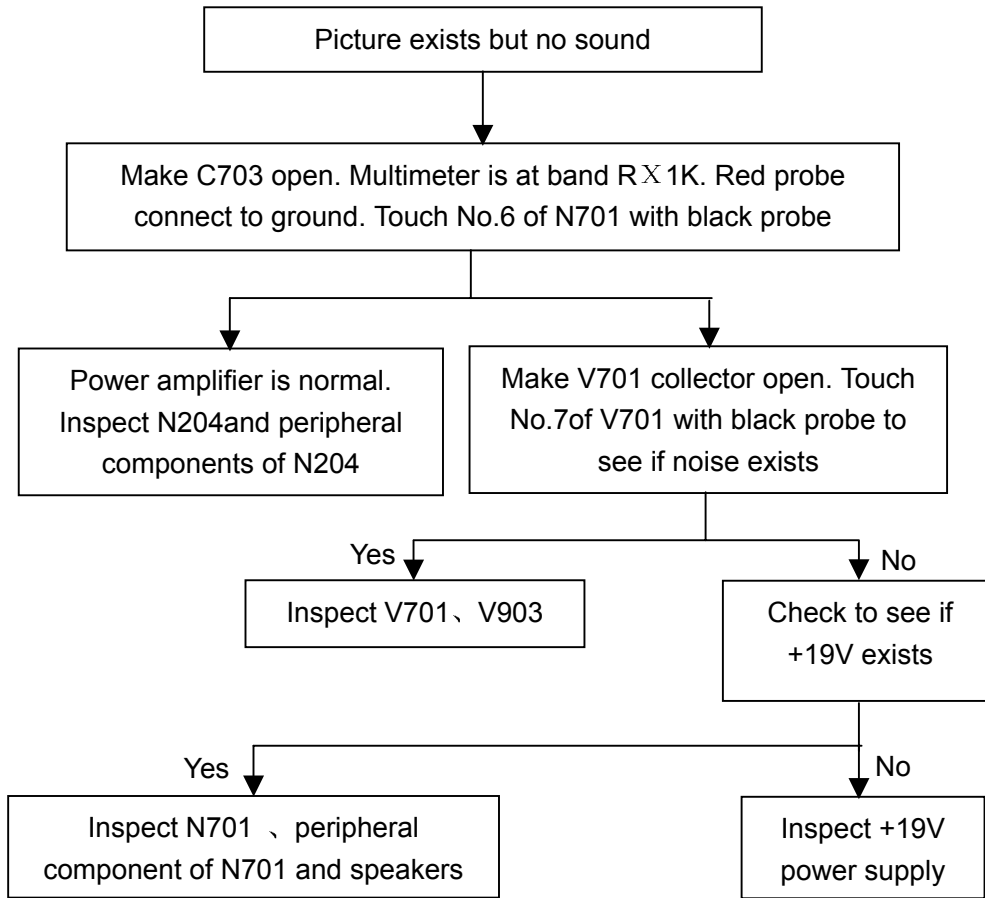
3



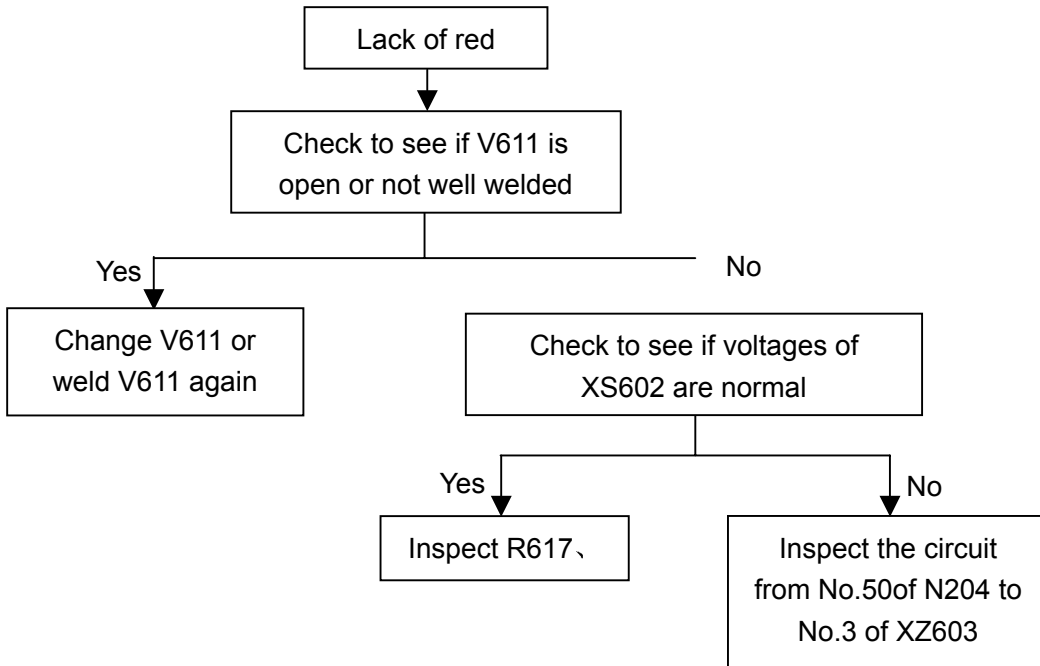
4



6



7



VII. ELECTRICAL ADJUSTMENT

A. Safety precautions

1. It is safe to adjust after using insulating transformer between the power supply and chassis input to prevent the risk of electric shock and protect the instrument.
2. Never disconnect leads while the TV receiver is on.
3. Don't short any portion of circuits while power is on.
4. The adjustment must be done by the correct appliances. But this is changeable in view of productivity.

B. Adjustment procedure

The chassis of this TV set uses Toshiba IC with the latest digital bus processing technology. The adjustment points are fewer and the adjustment is simpler. The adjustment method is as follows:

1. +B: $115\pm 0.3V$ adjustment.
 - 1) Switch on the power and connect PAL circular signals to the tuner.
 - 2) Adjust variable resistor RP501 until the voltage of the main power is $115\pm 0.3V$.
2. Screen voltage adjustment.
 - 1) Switch on the power and receive PAL system circular signal. Warm up the TV set for 15 min.
 - 2) Enter the adjustment D state. Press the “-/--” button, then a bright horizontal line appears. Adjust screen potentiometer to let the horizontal line just appears.
3. Focus adjustment.
 - 1) Receive electronic circular signal.
 - 2) Set picture mode on standard mode.
 - 3) Adjust focus potentiometer until the optimum picture is achieved.
4. White balance adjustment.
 - 1) Set the picture mode on standard mode.
 - 2) Enter the D state and adjust RCUT, GCUT, BCUT, GDRV and BDRV.
 - 3) Coordinate of reference white color: (X=0.281, Y=0.311).
6. Adjustment of horizontal and vertical position and size.
 - 1) Switch on the power and connect the signals to the tuner to receive PAL/NTSC system circular signal.
 - 2) Enter the D state. Adjust HPOS to change the horizontal position and VP50 to change the vertical position. Adjust HIT to change the vertical size until the vertical size is 90-92%. Horizontal size is related to the capacitor C416. Hold the

horizontal size is 90-92%.

8. Adjustment of character positions

Adjust OSD for the horizontal positions of the screen menu.

VIII. INFORMATION OF RESISTORS AND CAPACITORS

RESISTORS & CAPACITORS-PARTS NO.CODE

Notes: 1. part numbers are indicated on most mechanical parts.

Please use this part number for parts orders.

2. The unit of resistance is Ω (ohm). K=1000 Ω , M=1000K Ω

3. The unit of capacitance is μ F (microfarad). 1pF=10⁻⁶ μ F.

Numbering system of Capacitor

Example

<u>CL42</u>	----	<u>17</u>	----	<u>50V</u>	----	<u>2F4</u>	----	<u>104 *</u>	----	<u>Z</u>
Type				Voltage				Value (pF)		Tolerance
<u>CL21X</u>	----	<u>100V</u>	----	<u>223 *</u>	----	<u>J</u>				
Type		Voltage		Value (pF)		Tolerance				
<u>CL110X</u>	----	<u>25V</u>	----	<u>100 μ F</u>		<u>±</u>		<u>20%</u>		
Type		Voltage		Value		Tolerance				

* 104 = 10 × 10⁴ 223 = 22 × 10³

Numbering system of resistor

Example

<u>RY17S</u>	----	<u>2W</u>	----	<u>390</u>	----	<u>J</u>	----	<u>05-E-A</u>
Type		Wattage		Value(Ω)		Tolerance		
<u>RS11</u>	----	<u>1/2W</u>	----	<u>1.8K</u>	----	<u>K</u>		
Type		Wattage		Value		Tolerance		

ABBREVIATION OF PART NAME AND DESCRIPTION

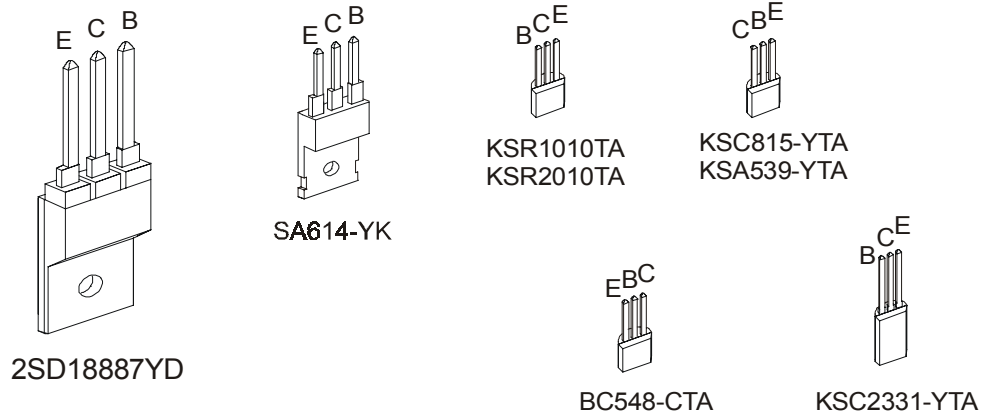
RESISTOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
T	Carbon	F	±1%
S	Solid	J	±5%
J	Metal	K	±10%
Y	Oxide	M	±20%
F	Fuse	G	±2%

CAPACITOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
C	Ceramic	J	±5%
T	Ceramic	K	±10%
L	Film	L	±15%
D	Electrolytic	M	±20%
A	Tantalum	P	+100%-0%
		Z	+80%-0%

Terminal view of transistors



IX. DAMAGEABLE PARTS LIST REPLACEMENT PARTS LIST

Location Code	Part Name	Specification	Stock Number
XS601	CRT SOCKET	GZS8-6-5	0094300098
V613	SWITCH transistor	2SC4584	0094400663
FU501	FUSE	T2.5A-250V	0094000150
C507	al electrolytic capacitor	400-USR-150uF-M	0094201434
N902	IC	KSA24C04	0094400542
N402	IC	TA8403K	0094400352
SW501	SWITCH	KDC-A06	0094000370
A901	RECEIVE	HS0038A2	0094000136
U101	TUNER	TDC-3G2-9V	0094000151
V432	H transistor	2SD1651	0094400465

BOM

serial number	haier 126 parts code	element list module	amount	compact code:000854 PCB place code
	large module 1RC	carbon film resistance		
1	D10B4R7J-T	1/6W 4.7	1	R444
2	D10B4R7J-T		1	R701
3	D10B330J-T	1/6W 33	1	R113
4	D10B101J-T	1/6W 100	1	R204
5	D10B101J-T	1/6W 100	1	R205
6	D10B101J-T	1/6W 100	1	R206
7	D10B101J-T	1/6W 100	1	R207
8	D10B101J-T	1/6W 100	1	R208
9	D10B101J-T	1/6W 100	1	R209
10	D10B101J-T	1/6W 100	1	R210
11	D10B101J-T	1/6W 100	1	R211
12	D10B101J-T	1/6W 100	1	R212
13	D10B101J-T	1/6W 100	1	R213
14	D10B101J-T	1/6W 100	1	R214
15	D10B101J-T	1/6W 100	1	R215
16	D10B101J-T	1/6W 100	1	R216
17	D10B101J-T	1/6W 100	1	R217
18	D10B151J-T	1/6W 150	1	R218
19	D10B151J-T	1/6W 150	1	R219
20	D10B221J-T	1/6W 220	1	R220
21	D10B221J-T	1/6W 220	1	R221
22	D10B221J-T	1/6W 220	1	R222
23	D10B221J-T	1/6W 220	1	R223
24	D10B221J-T	1/6W 220	1	R224
25	D10B271J-T	1/6W 270	1	R225
26	D10B271J-T	1/6W 270	1	R226
27	D10B271J-T	1/6W 270	1	R227
28	D10B271J-T	1/6W 270	1	R228
29	D10B391J-T	1/6W 390	1	R229
30	D10B471J-T	1/6W 470	1	R230
31	D10B561J-T	1/6W 560	1	R231
32	D10B561J-T	1/6W 560	1	R232
33	D10B681J-T	1/6W 680	1	R233
34	D10B681J-T	1/6W 680	1	R234
35	D10B681J-T	1/6W 680	1	R235
36	D10B681J-T	1/6W 680	1	R236
37	D10B102J-T	1/6W 1K	1	R237
38	D10B102J-T	1/6W 1K	1	R238
39	D10B102J-T	1/6W 1K	1	R239
40	D10B102J-T	1/6W 1K	1	R240
41	D10B102J-T	1/6W 1K	1	R241
42	D10B102J-T	1/6W 1K	1	R242
43	D10B102J-T	1/6W 1K	1	R243
44	D10B102J-T	1/6W 1K	1	R244
45	D10B122J-T	1/6W 1.2K	1	R245
46	D10B152J-T	1/6W 1.5K	1	R246
47	D10B152J-T	1/6W 1.5K	1	R247
48	D10B152J-T	1/6W 1.5K	1	R248
49	D10B152J-T	1/6W 1.5K	1	R249
50	D10B222J-T	1/6W 2.2K	1	R250
51	D10B222J-T	1/6W 2.2K	1	R251
52	D10B332J-T	1/6W 3.3K	1	R252
53	D10B332J-T	1/6W 3.3K	1	R253
54	D10B332J-T	1/6W 3.3K	1	R254
55	D10B332J-T	1/6W 3.3K	1	R255
56	D10B392J-T	1/6W 3.9K	1	R256
57	D10B392J-T	1/6W 3.9K	1	R257
58	D10B392J-T	1/6W 3.9K	1	R258
59	D10B392J-T	1/6W 3.9K	1	R259
60	D10B392J-T	1/6W 3.9K	1	R260
61	D10B392J-T	1/6W 3.9K	1	R261
62	D10B472J-T	1/6W 4.7K	1	R262
63	D10B472J-T	1/6W 4.7K	1	R263
64	D10B472J-T	1/6W 4.7K	1	R264
65	D10B472J-T	1/6W 4.7K	1	R265
66	D10B562J-T	1/6W 5.6K	1	R266
67	D10B562J-T	1/6W 5.6K	1	R267
68	D10B562J-T	1/6W 5.6K	1	R268
69	D10B562J-T	1/6W 5.6K	1	R269
70	D10B822J-T	1/6W 8.2K	1	R270
71	D10B822J-T	1/6W 8.2K	1	R271
72	D10B103J-T	1/6W 10K	1	R272
73	D10B103J-T	1/6W 10K	1	R273
74	D10B103J-T	1/6W 10K	1	R274
75	D10B103J-T	1/6W 10K	1	R275
76	D10B103J-T	1/6W 10K	1	R276

77	D10B103J-T	1/6W 10K	1	R277	
78	D10B103J-T	1/6W 10K	1	R278	
79	D10B103J-T	1/6W 10K	1	R279	
80	D10B103J-T	1/6W 10K	1	R280	
81	D10B103J-T	1/6W 10K	1	R281	
82	D10B103J-T	1/6W 10K	1	R282	
83	D10B103J-T	1/6W 10K	1	R283	
84	D10B103J-T	1/6W 10K	1	R284	
85	D10B103J-T	1/6W 10K	1	R285	
86	D10B103J-T	1/6W 10K	1	R286	
87	D10B103J-T	1/6W 10K	1	R287	
88	D10B103J-T	1/6W 10K	1	R288	
89	D10B103J-T	1/6W 10K	1	R289	
90	D10B123J-T	1/6W 12K	1	R290	
91	D10B123J-T	1/6W 12K	1	R291	
92	D10B153J-T	1/6W 15K	1	R292	
93	D10B153J-T	1/6W 15K	1	R293	
94	D10B153J-T	1/6W 15K	1	R294	
95	D10B153J-T	1/6W 15K	1	R295	
96	D10B153J-T	1/6W 15K	1	R296	
97	D10B153J-T	1/6W 15K	1	R297	
98	D10B153J-T	1/6W 15K	1	R298	
99	D10B153J-T	1/6W 15K	1	R299	
100	D10B223J-T	1/6W 22K	1	R300	
101	D10B223J-T	1/6W 22K	1	R301	
102	D10B223J-T	1/6W 22K	1	R302	
103	D10B223J-T	1/6W 22K	1	R303	
104	D10B223J-T	1/6W 22K	1	R304	
105	D10B223J-T	1/6W 22K	1	R305	
106	D10B223J-T	1/6W 22K	1	R306	
107	D10B223J-T	1/6W 22K	1	R307	
108	D10B333J-T	1/6W 33K	1	R308	
109	D10B333J-T	1/6W 33K	1	R309	
110	D10B333J-T	1/6W 33K	1	R310	
111	D10B333J-T	1/6W 33K	1	R311	
112	D10B473J-T	1/6W 47K	1	R312	
113	D10B473J-T	1/6W 47K	1	R313	
114	D10B683J-T	1/6W 68K	1	R314	
115	D10B104J-T	1/6W 100K	1	R315	
116	D10B104J-T	1/6W 100K	1	R316	
117	D10B104J-T	1/6W 100K	1	R317	
118	D10B124J-T	1/6W 120K	1	R318	
119	D10B224J-T	1/6W 220K	1	R319	
120	D10B334J-T	1/6W 330K	1	R320	
121	D10B564J-T	1/6W 560K	1	R321	
122	D10C2R2J-T	1/4W 2.2	1	R322	
123	D10C330J-T	1/4W 33	1	R323	
124	D10C471J-T	1/4W 470	1	R324	
125	D10C182J-T	1/4W 1.8K	1	R325	
126	D10C272J-T	1/4W 2.7K	1	R326	
127	D10C392J-T	1/4W 3.9K	1	R327	
128	D10C472J-T	1/4W 4.7K	1	R328	
129	D10C153J-T	1/4W 15K	1	R329	
130	D10C153J-T	1/4W 15K	1	R330	
131	D10C473J-T	1/4W 47K	1	R331	
132	D10C473J-T	1/4W 47K	1	R332	
133	D10C154J-T	1/4W 150K	1	R333	
134	D10D221J-T	1/2W 220	1	R334	
135	D10D331J-T	1/2W 330	1	R335	
136	D10D331J-T	1/2W 330	1	R336	
137	D10D102J-T	1/2W 1K	1	R337	
138	D10D332J-T	1/2W 3.3K	1	R338	
139	D10D332J-T	1/2W 3.3K	1	R339	
140	D10D332J-T	1/2W 3.3K	1	R340	
141	D10D332J-T	1/2W 3.3K	1	R341	
142	D10D472J-T	1/2W 4.7K	1	R342	
143	D10D123J-T	1/2W 12K	1	R343	
144	D10D473J-T	1/2W 47K	1	R344	
145	D10D224J-T	1/2W 220K	1	R345	
146	large module 1RF	insure resistance	1		
147	F10DR47J-C	1/2W 0.47	1	R558	
148	F10D1R0J-C	1/2W 1.0	1	R573	
149	F10D1R5J-C	1/2W 1.5	1	R550	
150	large module 1R0	oxidation film resistance	1		
151	S10E1R8J-C	1W 1.8	1	R445	
152	S10E124J-C(A)	1W 120K (span 12.5mm)	1	R520	
153	S10E124J-C(A)	1W 120K (span 12.5mm)	1	R521	
154	S10F2R0J-C	2W 2.0	1	R631	
155	S10F680J-C	2W 68	1	R525	
156	S10F680J-C	2W 68	1	R580	
157	S10F151J-C	2W 150	1	R574	
158	S10F271J-C	2W 270	1	R437	

159	S10F123J-C	2W 12K	1	R553	
160	S10F183J-C	2W 18K	1	R606	
161	S10F183J-C	2W 18K	1	R626	
162	S10F183J-C	2W 18K	1	R616	
163	S10F223J-C	2W 22K	1	R565	
164	large module 1RS	resistance	1		
165	C10D126K-T	1/2W 12M	1	R531	
166	large module 1RT	au	1		
167	P10X180J-C	PTC 180HM(degauss nimble to heat 3 pin)	1	PS501	
168	large module 1RW	line circle resistance	1		
169	W10J3R9K	6W 3.9	1	R502	
170	W10J270K	6W 27	1	R534	
171	W11H3R9K	5W 3.9(span 15mm) stand module	1	R449	
172	large module 1VR	electricity place ware	1		
173	V11D202B	2KB	1	RP551	
174	2CC	porcelain capacitance	1		
175	C2BF181K-T	50V 180p	1	C235	
176	C2BF221K-T	50V 220p	1	C908	
177	C2BF221K-T	50V 220p	1	C912	
178	C2BF221K-T	50V 220p	1	C909	
179	C2BF331K-T	50V 330p	1	C602	
180	C2BF331K-T	50V 330p	1	C622	
181	C2BF331K-T	50V 330p	1	C612	
182	C2BF102K-T	50V 1000p	1	C203	
183	C2BF102K-T	50V 1000p	1	C934	
184	C2BF102K-T	50V 1000p	1	C551	
185	C2BF152K-T	50V 1500p	1	C246	
186	C2BF272K-T	50V 2700p	1	C234	
187	C2CF200J-T	50V 20p	1	C902	
188	C2CF270J-T	50V 27p	1	C901	
189	C2CF330J-T	50V 33p	1	C247	
190	C2FF103Z-T	50V 0.01u	1	C112	
191	C2FF103Z-T	50V 0.01u	1	C210	
192	C2FF103Z-T	50V 0.01u	1	C208	
193	C2FF103Z-T	50V 0.01u	1	C202	
194	C2FF103Z-T	50V 0.01u	1	C120	
195	C2FF103Z-T	50V 0.01u	1	C114	
196	C2FF103Z-T	50V 0.01u	1	C113	
197	C2FF103Z-T	50V 0.01u	1	C310	
198	C2FF103Z-T	50V 0.01u	1	C304	
199	C2FF103Z-T	50V 0.01u	1	C309	
200	C2FF103Z-T	50V 0.01u	1	C233	
201	C2FF103Z-T	50V 0.01u	1	C232	
202	C2FF103Z-T	50V 0.01u	1	C225	
203	C2FF103Z-T	50V 0.01u	1	C929	
204	C2FF103Z-T	50V 0.01u	1	C924	
205	C2FF103Z-T	50V 0.01u	1	C915	
206	C2FF103Z-T	50V 0.01u	1	C913	
207	C2FF103Z-T	50V 0.01u	1	C635	
208	C2FF103Z-T	50V 0.01u	1	C903	
209	C2FF103Z-T	50V 0.01u	1	C211	
210	C2FF103Z-T	50V 0.01u	1	C574	
211	C2FF103Z-T	50V 0.01u	1	C930	
212	C2BP102K-T	500V 1000p	1	C402	
213	C2BP392K-T	500V 3900p	1	C403	
214	C2BP392K-T	500V 3900p	1	C452	
215	C2SP100D-T	500V 10p	1	C448	
216	C2BW102K-O	1KV 1000p	1	C503	
217	C2BW102K-O	1KV 1000p	1	C506	
218	C2BW102K-O	1KV 1000p	1	C505	
219	C2BW102K-O	1KV 1000p	1	C504	
220	C2EX222Z-O	2KV 2200P	1	C630	
221	C2RX221K-O	2KV 220p (span 7.5mm)	1	C556	
222	C2RX471K-O	2KV 470p	1	C555	
223	C2RX681K-O	2KV 680p	1	C516	
224	C2EM102M-O	AC 250V 1000p	1	C535	
225	large module 2CE	aluminum electrolysis capacitance	1		
226	E20C4R7M	16V 4.7u	1	C291	
227	E20C4R7M	16V 4.7u	1	C296	
228	E20C4R7M	16V 4.7u	1	C292	
229	E20C100M	16V 10u	1	C293	
230	E20C100M	16V 10u	1	C570	
231	E20C100M	16V 10u	1	C306	
232	E20C100M	16V 10u	1	C294	
233	E20C220M	16V 22u	1	C704	
234	E20C470M	16V 47u	1	C238	
235	E20C470M	16V 47u	1	C914	
236	E20C470M	16V 47u	1	C632	

237	E20C470M	16V 47u	1	C307	
238	E20C470M	16V 47u	1	C295	
239	E20C470M	16V 47u	1	C244	
240	E20C470M	16V 47u	1	C240	
241	E20C470M	16V 47u	1	C920	
242	E20C470M	16V 47u	1	C916	
243	E20C101M	16V 100u	1	C230	
244	E20C101M	16V 100u	1	C928	
245	E20C101M	16V 100u	1	C927	
246	E20C101M	16V 100u	1	C302	
247	E20C101M	16V 100u	1	C243	
248	E20C221M	16V 220u	1	C102	
249	E20C471M	16V 470u	1	C105	
250	E20C471M	16V 470u	1	C311	
251	E20C471M	16V 470u	1	C209	
252	E20C471M-H	16V 470u(high temperature)	1	C571	
253	E20D100MN	25V 10u(non polarity)	1	C201	
254	E20D221M	25V 220u	1	C700	
255	E20D471M	25V 470u	1	C557	
256	E20D471M	25V 470u	1	C717	
257	E20D471M	25V 470u	1	C564	
258	E20D102M	25V 1000u	1	C433	
259	E20E470M-H	35V 47u(wide bound temperature quotiety)	1	C430	
260	E20E101M	35V 100u	1	C449	
261	E20E331MA	35V 330u(CD288)	1	C559	
262	E20E331M-H	35V 330uF(wide bound temperature quotiety)	1	C565	
263	E20FR22M	50V 0.22	1	C237	
264	E20FR22MR	50V 0.22(low creepage)	1	C205	
265	E20FR47M	50V 0.47u	1	C108	
266	E20FR47M	50V 0.47u	1	C308	
267	E20FR47M	50V 0.47u	1	C303	
268	E20FR47M	50V 0.47u	1	C301	
269	E20FR47M	50V 0.47u	1	C204	
270	E20FR47M	50V 0.47u	1	C110	
271	E20F1R0M	50V 1u	1	C215	
272	E20F1R0M	50V 1u	1	C245	
273	E20F1R0M	50V 1u	1	C236	
274	E20F1R0M	50V 1u	1	C217	
275	E20F1R0M	50V 1u	1	C216	
276	E20F2R2M	50V 2.2u	1	C103	
277	E20F2R2M	50V 2.2u	1	C926	
278	E20F2R2M	50V 2.2u	1	C703	
279	E20F2R2M	50V 2.2u	1	C443	
280	E20F2R2M	50V 2.2u	1	C300	
281	E20F4R7M	50V 4.7u	1	C101	
282	E20F4R7M	50V 4.7u	1	C705	
283	E20F4R7M	50V 4.7u	1	C206	
284	E21H1R0M	160V 1U	1	C411	
285	E20H100M-H	160V 10u(high temperature modulus)	1	C561	
286	E20H101M	160V 100u	1	C563	
287	E20K220M	250V 22u	1	C562	
288	large module 2CF	film capacitance	1		
289	F20G222J	100V 2200p	1	C231	
290	F20G222J	100V 2200p	1	C446	
291	F20G392J	100V 3900p	1	C708	
292	F20G822J	100V 8200p	1	C305	
293	F22G123J-T	CL21X 100V 0.012uF	1	C515	
294	F20G223K	100V 0.022u	1	C517	
295	F20G563K	100V 0.056uF	1	C447	
296	F20G104K	100V 0.1u	1	C104	
297	F20G104K	100V 0.1u	1	C514	
298	F20G104K	100V 0.1u	1	C461	
299	F20G104K	100V 0.1u	1	C460	
300	F20G104K	100V 0.1u	1	C444	
301	F20G104K	100V 0.1u	1	C421	
302	F20G104K	100V 0.1u	1	C413	
303	F20G104K	100V 0.1u	1	C923	
304	F20G104K	100V 0.1u	1	C922	
305	F20G104K	100V 0.1u	1	C701	
306	F20J394J	200V 0.39u	1	C412	
307	F20R224M	250VAC 0.22u	1	C501	
308	F20R224M	250VAC 0.22u	1	C502	
309	F20Z912J	1.6KV 9100p	1	C415	
310	large module 3LL	inductance	1		
311	LXX0037	horizontal line (0A 40)	1	L414	
312	TLXX0018	match inductance (D18)	1	T101	
313	L3X11R0K-T	1uH-K	1	L103	
314	L3X18R2K-T	8.2uH-K	1	L304	

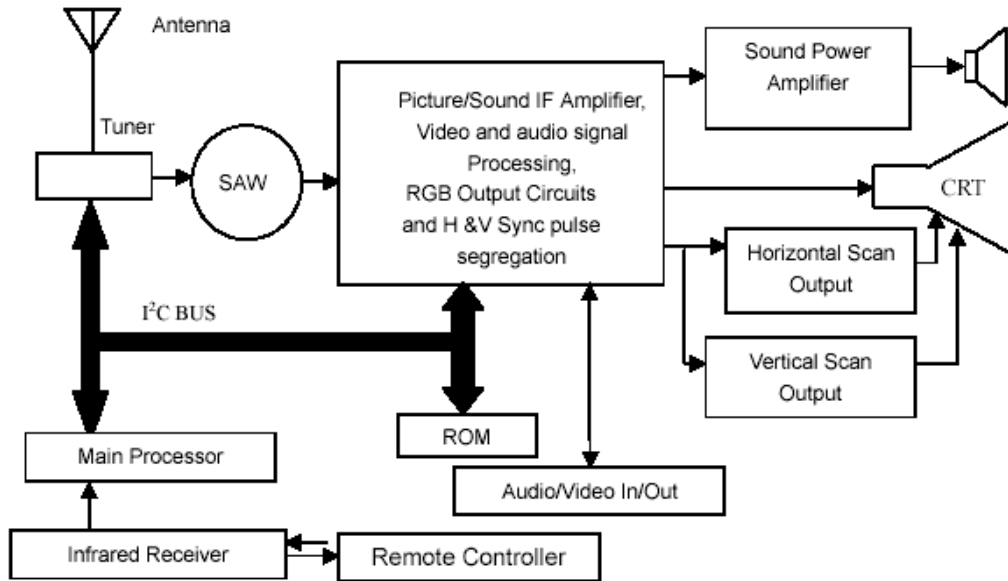
315	L3X1150K-T	15uH-K	1	L102	
316	L3X1150K-T	15uH-K	1	L901	
317	L3X1150K-T	15uH-K	1	L305	
318	L3X1150K-T	15uH-K	1	L302	
319	L3X1150K-T	15uH-K	1	L230	
320	L3X1150K-T	15uH-K	1	L201	
321	L3X1150K-T	15uH-K	1	L104	
322	large module 4DC	photoelectricity coupling ware	1		
323	RX0001XX	PC817B/C(ic)	1	VD515	
324	large module 4DL	LED	1		
325	DL0008XX	LED (RED 5mm)	1	VD923	
326	large module 4DR	diode	1		
327	DR0001XX-T	1S1555/IN4148A	1	VD230	
328	DR0001XX-T	1S1555/IN4148A	1	VD231	
329	DR0001XX-T	1S1555/IN4148A	1	VD232	
330	DR0001XX-T	1S1555/IN4148A	1	VD233	
331	DR0001XX-T	1S1555/IN4148A	1	VD401	
332	DR0001XX-T	1S1555/IN4148A	1	VD514	
333	DR0001XX-T	1S1555/IN4148A	1	VD516	
334	DR0001XX-T	1S1555/IN4148A	1	VD518	
335	DR0001XX-T	1S1555/IN4148A	1	VD558	
336	DR0001XX-T	1S1555/IN4148A	1	VD601	
337	DR0001XX-T	1S1555/IN4148A	1	VD611	
338	DR0001XX-T	1S1555/IN4148A	1	VD621	
339	DR0001XX-T	1S1555/IN4148A	1	VD901	
340	DR0003XX-T	FR105	1	VD433	
341	DR0003XX-T	FR105	1	VD517	
342	DR0003XX-T	FR105	1	VD557	
343	DR0009XX-T	GP10D/IN4004	1	VD434	
344	DR0010XX-T	FR107	1	VD413	
345	DR0015XX	RU4AM/TVR4N	1	VD503	
346	DR0015XX	RU4AM/TVR4N	1	VD506	
347	DR0015XX	RU4AM/TVR4N	1	VD505	
348	DR0015XX	RU4AM/TVR4N	1	VD504	
349	DR0017XX-T	RGP10J	1	VD552	
350	DR0017XX-T	RGP10J	1	VD553	
351	DR0018XX-T	RGP10D	1	VD554	
352	DR0020BXX-T	RGP15J(especially for GAOLUHUA)	1	VD556	
353	DR0031XX-T	TJ1010	1	VD555	
354	large module 4DZ	certain voltage diode	1		
355	DZ0001XX-T	RD6. 2EB3/HZ7A1	1	VD551	
356	DZ0002XX-T	RD5. 1EB2/HZ5C1	1	VD922	
357	DZ0004XX-T	RD10EB2/HZ11C1	1	VD436	
358	DZ0006XX-T	RD3. 6L/HZ4A2	1	VD501	
359	DZ0006XX-T	RD3. 6L/HZ4A2	1	VD902	
360	DZ0010XX-T	RD8. 2EB3/HZ9A2	1	VD519	
361	DZ0011XX-T	RD9. 1EB2/HZ9B2	1	VD202	
362	DZ0011XX-T	RD9. 1EB2/HZ9B2	1	VD203	
363	DZ0011XX-T	RD9. 1EB2/HZ9B2	1	VD204	
364	DZ0015XX-T	RD5. 6EB2/HZ6B1	1	VD921	
365	large module 4IC	IC	1		
366	IXXX0045	LA7840(vertical integer circuit)	1	N402	
367	IXXX0079	TL24C08 (EEPROM 8K)	1	N901	
368	IXXX0080	uPC574J	1	N904	
369	IXXX0096	TDA 2611(sound amplifier)	1	N701	
370	IXXX0118	TA78M09 9Vsteady voltage	1	N902	
371	IXXX0120	LC4053B	1	N203	
372	IXXX0137	8803CPN-3GV1	1	N204	
373	large module 4TR	audion	1		
374	RXA1015X	2SA1015Y/2SA608/2SA733Q	1	V230	
375	RXA1015X	2SA1015Y/2SA608/2SA733Q	1	V232	
376	RXA1015X	2SA1015Y/2SA608/2SA733Q	1	V233	
377	RXA1015X	2SA1015Y/2SA608/2SA733Q	1	V302	
378	RXA1015X	2SA1015Y/2SA608/2SA733Q	1	V902	
379	RXB764XX	2SB764	1	V511	
380	RXB764XX	2SB764	1	V570	
381	RXB892XX	2SB892/2SB985T	1	V552	
382	RXC2216X	2SC2216	1	V101	
383	RXC2383X	2SC23830	1	V444	
384	RXC2688X	2SC2688K	1	V601	
385	RXC2688X	2SC2688K	1	V611	
386	RXC2688X	2SC2688K	1	V621	
387	RXC3807X	2SC3807 /2SC5070	1	V512	
388	RXC5586X	2SC5586	1	V513	
389	RXC945XX	2SC945/2SC1815/2SC536E	1	V102	
390	RXC945XX	2SC945/2SC1815/2SC536E	1	V630	
391	RXC945XX	2SC945/2SC1815/2SC536E	1	V103	
392	RXC945XX	2SC945/2SC1815/2SC536E	1	V203	
393	RXC945XX	2SC945/2SC1815/2SC536E	1	V231	

394	RXC945XX	2SC945/2SC1815/2SC536E	1	V551	
395	RXC945XX	2SC945/2SC1815/2SC536E	1	V571	
396	RXC945XX	2SC945/2SC1815/2SC536E	1	V572	
397	RXC945XX	2SC945/2SC1815/2SC536E	1	V701	
398	RXC945XX	2SC945/2SC1815/2SC536E	1	V901	
399	RXD2499X	2SD2499	1	V411	
400	RXD400XX	2SD400D	1	V905	
401	large module 50C	other element	1		
402	EARX0004	stand module stereo earphone socket	1	XZ1107	
403	FC0006XX	T 6.5M(fall wave implement)	1	Z304	
404	FS0008XX	Q1036C1 SAW FILTER(38M)	1	Z101	
405	FXXX0010	FUSE 2.5A 250V(fuse)	1	F501	
406	KXXX0050B	power switch	1	SW501	
407	KXXX0101	PUSH SW.horizontal module (5.0mm)	1	SW1001	
408	KXXX0101	PUSH SW.horizontal module (5.0mm)	1	SW1002	
409	KXXX0101	PUSH SW.horizontal module (5.0mm)	1	SW1003	
410	KXXX0101	PUSH SW.horizontal module (5.0mm)	1	SW1004	
411	KXXX0101	PUSH SW.horizontal module (5.0mm)	1	SW1005	
412	KXXX0101	PUSH SW.horizontal module (5.0mm)	1	SW1006	
413	RXXX0016	infrared reciever	1	A901	
414	XC0004XX-A	8.0M(with 20p) high precision crystal oscillatory	1	Z901	
415	large module 60L	lead and meet element	1		
416	LXXX0010C	power wire with plus(2m)	1	W501	
417	LXXX0146-H	2P LINE(250mm especially for haier)	1	XZ1106	
418	LXXX0176	co	1	XZ412	
419	LXXX0188	TD19 local control board wire(180mm)	1	XZ1004	
420	LXXX0189-R	vedio amplifier connet wire(265mm)	1	XS261	
421	LXXX0219	defend thunder wire(420mm)	1	A-A	
422	LXXX0223	7P LINE(180mm)	1	XZ214	
423	LXXX0307	speaker wire(haier)	1	XZ1105	
424	LXXX0315-R	Avconnect line(200mm)	1	XZ1104	
425	NXXX0027	14" rainbow brand CRT socket(insert and draw mode)	1	XZ601	
426	NXXX0034	S-VHSsocket (D8)	1	XZ203	
427	NXXX0056-H	A/V six core socket(for haier)	1	XZA201	
428	NXXX005S	three AV socket	1	*	
429	NXXX0070	AC SOCKET(2S large module)	1	XZ501	
430	NXXX0210	SPEAKER SOCKET(little module two core)	1	XZ701	
431	NXXX0210	SPEAKER SOCKET(little module two core)	1	XZ901	
432	NXXX0230	2S SOCKET(middle module) KEa	1	XZ500	
433	NXXX0242	3S minitype moudle	1	XZ213	
434	NXXX0242	3S minitype moudle	1	XZ218	
435	NXXX0250	DY SOCKET(middle module) DYa	1	XZ411	
436	sta	transformer	1		
437	LFXX0016	power filter (LCL0608TL)	1	L502	
438	LFXX0016	power filter (LCL0608TL)	1	L503	
439	TXXX0027	15" switch transform(haier)	1	T501	
440	TXXX0040	H-DRIVER(HORIZONTAL driver transformer)	1	T401	
441	large module 8PB	PCB	1		
442	PAEX0077	two in one haier14"	1	ZZ023	
443	PAEX0376A	haier 14" loacl control board	1	ZZ024	
444	PAEX0376B	haier 14" AV board	1	*	
445	large module 8SM	made by self element	1		
446	FGXX0011G	fuse socket	1	F501a	
447	FGXX0011G	fuse socket	1	F501b	
448	GCLX0011	fixation card(radiator)	1	ZZ004	
449	GCLX0020	prick wire(lock close module) 100mm	1	*	
450	GCLX0020	prick wire(lock close module) 100mm	1	ZZ005	
451	HXXX0011	power radiator(0048 board)	1	Z01-02	
452	HXXX0021C	frame, horizontal radiator	1	Z03-04	
453	HXXX0030A	sound amplifier radiator(have lack corner)	1	MN701	
454	HXXX0048	9V radiator	1	MN902	
455	NDL002XX	irradiance diode bracket(short)	1	A902	
456	PTSX0010	TESTING POINT(testing socket)	1	TP101	
457	PTSX0010	TESTING POINT(testing socket)	1	TP603	
458	PTSX0010	TESTING POINT(testing socket)	1	TP606	
459	large module 9SD	stande element	1		
460	MCXX0010	M3(nut)	1	ZZ017	
461	MCXX0010	M3(nut)	1	ZZ018	
462	MCXX0010	M3(nut)	1	ZZ019	
463	MCXX0010	M3(nut)	1	ZZ020	
464	PNXX0010	D2.5*3.5rivet	1	P27	
465	PNXX0010	D2.5*3.5rivet	1	P28	
466	PNXX0010	D2.5*3.5rivet	1	P29	
467	PNXX0010	D2.5*3.5rivet	1	P50	
468	PNXX0010	D2.5*3.5rivet	1	P51	
469	PNXX0010	D2.5*3.5rivet	1	P52	
470	PNXX0010	D2.5*3.5rivet	1	P53	

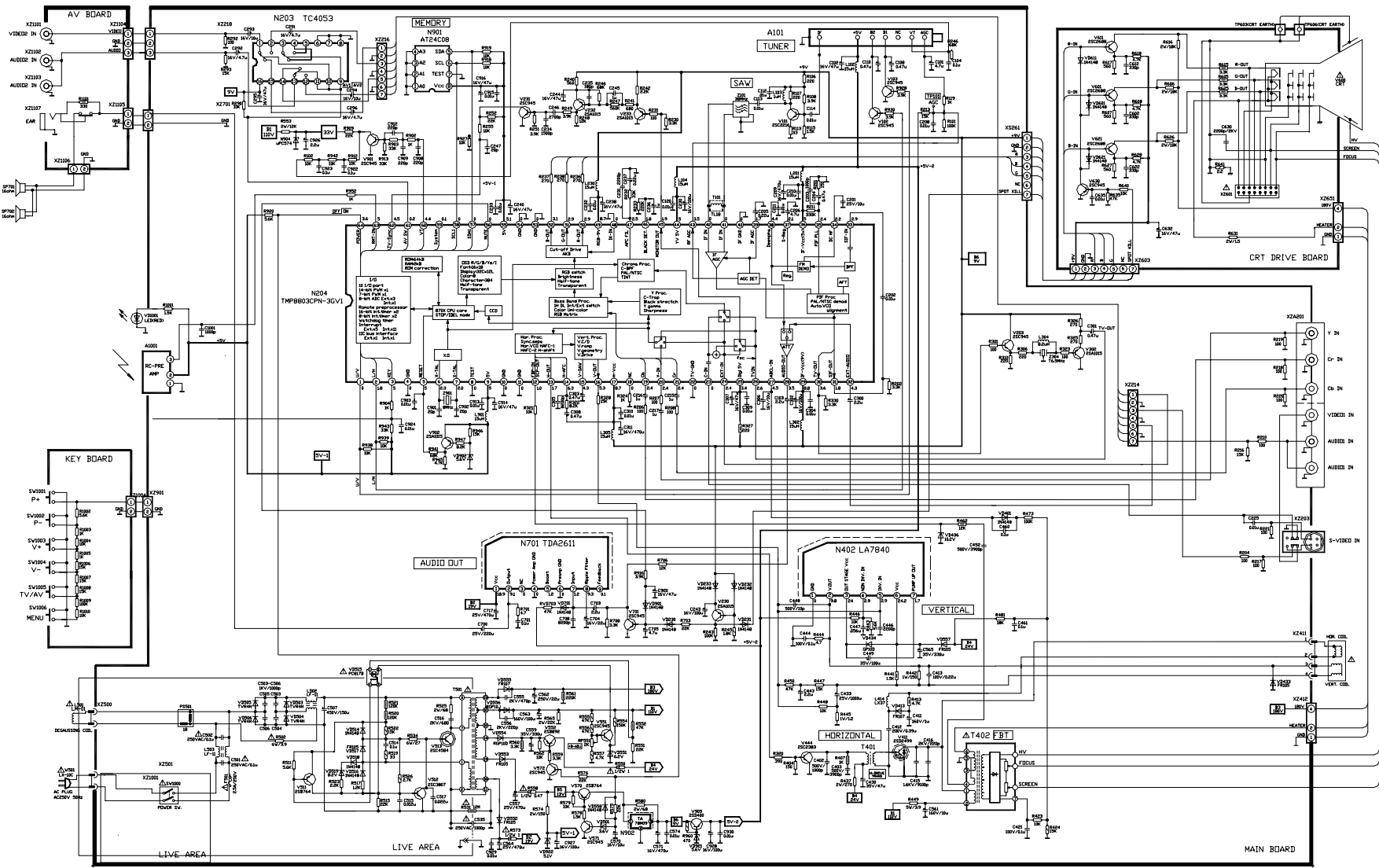
471	PNXX0010	D2. 5*3. 5rivet	1	P54	
472	PNXX0010	D2. 5*3. 5rivet	1	P63	
473	PNXX0010	D2. 5*3. 5rivet	1	P64	
474	PNXX0020	D1. 6*3. 0rivet	1	P12	
475	PNXX0020	D1. 6*3. 0rivet	1	P15	
476	PNXX0020	D1. 6*3. 0rivet	1	P18	
477	PNXX0020	D1. 6*3. 0rivet	1	P19	
478	PNXX0020	D1. 6*3. 0rivet	1	P2	
479	PNXX0020	D1. 6*3. 0rivet	1	P21	
480	PNXX0020	D1. 6*3. 0rivet	1	P24	
481	PNXX0020	D1. 6*3. 0rivet	1	P25	
482	PNXX0020	D1. 6*3. 0rivet	1	P26	
483	PNXX0020	D1. 6*3. 0rivet	1	P30	
484	PNXX0020	D1. 6*3. 0rivet	1	P31	
485	PNXX0020	D1. 6*3. 0rivet	1	P4	
486	PNXX0020	D1. 6*3. 0rivet	1	P40	
487	PNXX0020	D1. 6*3. 0rivet	1	P41	
488	PNXX0020	D1. 6*3. 0rivet	1	P42	
489	PNXX0020	D1. 6*3. 0rivet	1	P43	
490	PNXX0020	D1. 6*3. 0rivet	1	P44	
491	PNXX0020	D1. 6*3. 0rivet	1	P45	
492	PNXX0020	D1. 6*3. 0rivet	1	P46	
493	PNXX0020	D1. 6*3. 0rivet	1	P47	
494	PNXX0020	D1. 6*3. 0rivet	1	P48	
495	PNXX0020	D1. 6*3. 0rivet	1	P5	
496	PNXX0020	D1. 6*3. 0rivet	1	P6	
497	PNXX0020	D1. 6*3. 0rivet	1	P7	
498	PNXX0020	D1. 6*3. 0rivet	1	P8	
499	PNXX0020	D1. 6*3. 0rivet	1	P9	
500	PNXX0020	D1. 6*3. 0rivet	1	P56	
501	PNXX0020	D1. 6*3. 0rivet	1	P57	
502	PNXX0020	D1. 6*3. 0rivet	1	P58	
503	PNXX0020	D1. 6*3. 0rivet	1	P59	
504	PNXX0020	D1. 6*3. 0rivet	1	P60	
505	PNXX0020	D1. 6*3. 0rivet	1	P61	
506	PNXX0020	D1. 6*3. 0rivet	1	P62	
507	PNXX0020	D1. 6*3. 0rivet	1	P65	
508	PNXX0020	D1. 6*3. 0rivet	1	P66	
509	PNXX0020	D1. 6*3. 0rivet	1	P67	
510	PNXX0020	D1. 6*3. 0rivet	1	P68	
511	PNXX0020	D1. 6*3. 0rivet	1	P69	
512	PNXX0020	D1. 6*3. 0rivet	1	P70	
513	PNXX0020	D1. 6*3. 0rivet	1	P71	
514	SCXX002S	M3*8 (bolt)	1	ZZ031	
515	SCXX319S	M3*10 bolt with tray	1	ZZ025	
516	SCXX319S	M3*10 bolt with tray	1	ZZ026	
517	SCXX319S	M3*10 bolt with tray	1	ZZ027	
518	SCXX320S	M3*8 bolt with tray	1	ZZ028	

X. APPENDIX

A. Circuit Block Diagram



B. Circuit Diagrams



Sincere Forever



Haier Group

Tel :86-532-8938356

Web site : <http://www.haier.com>