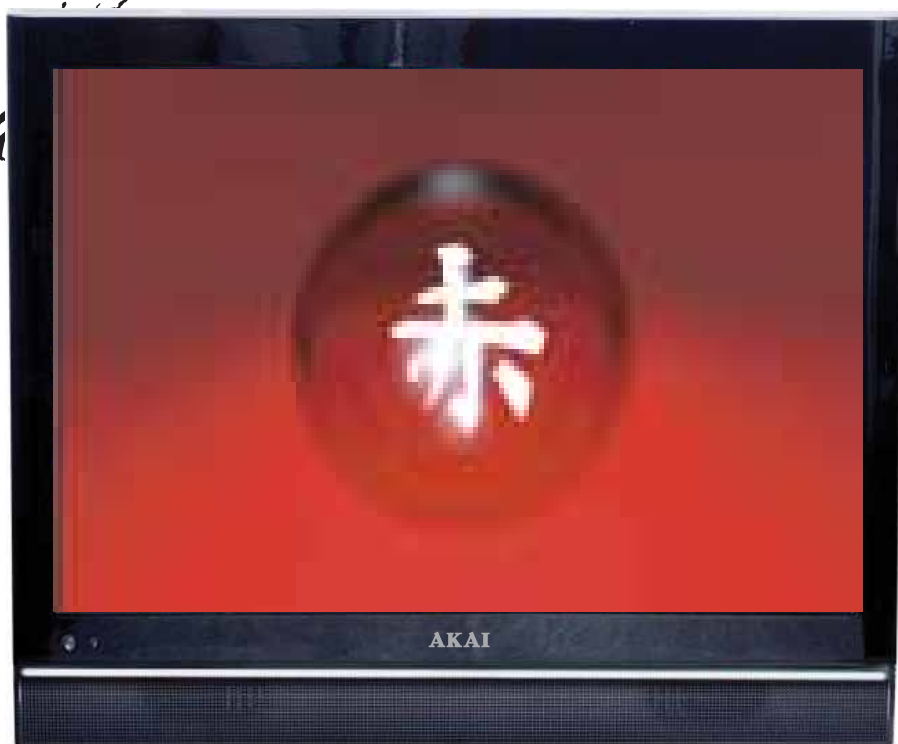


AKAI

Multisystem LCD TV set

LTA-16S5X3M



Service manual

AKAI

LTA-16S5X3M

SERVICE MANUAL

Only For Professional Service Personnel Using

CONTENTS

1. OPERATION PARTS -----	2
2. SYMPTOMS and CORRECTIONS -----	5
3. MANI BOARD FAULT JUDGMENT-----	6
4. SOFTWARE UPGRADE -----	16
5. SOFTWARE DATA'S RESTORATION AND ADJUSTMENT ---	18
6. MAIN ELECTRIC PARTS LIST -----	19
7. SPECIFICATIONS -----	20
8. ACCESSORIAL CIRCUITR DRAWING and CONFIGURATION DRAWING --	21

OPERATION PARTS

■ Top View of TV Set:

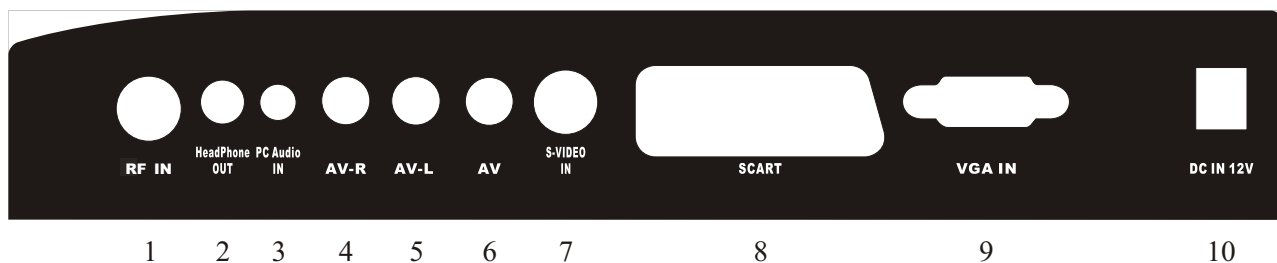


ITEM	BUTTON NAME	FUNCTION DESCRIPTION
1	-VOLUME+	Press to increase or decrease the sound level.
2	-CH+	Press to scan through channels. To scan Quickly channels, press and hold down Either +/- button.
3	MENU	Press to bring up the main menu to the Screen.
4	TV/AV	Press to select the input source.
5	STANDBY	Switch ON the LCD TV when at standby Mode or vice versa

■ Rear View of TV Set

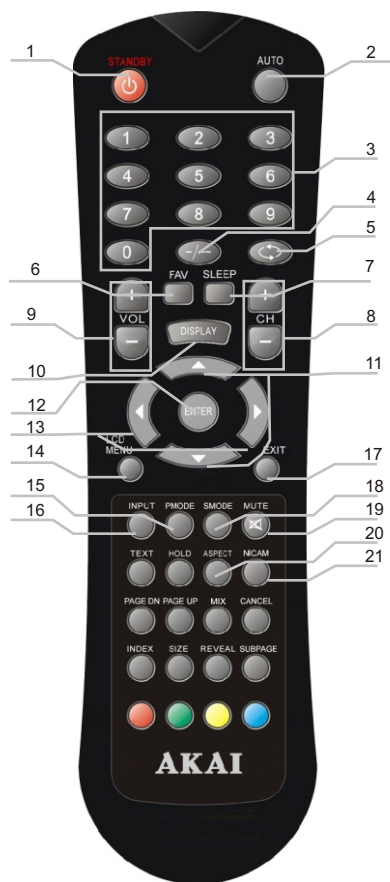
1. RF IN
2. HeadPhone OUT
3. PC Audio IN
4. AV-R
5. AV-L
6. AV
7. S-VIDEO IN

8. SCART
9. VGA IN
10. DC IN 12V



OPERATION PARTS

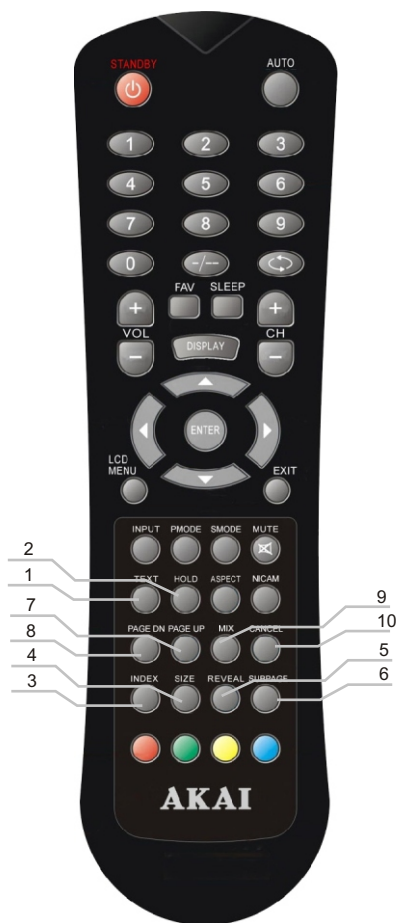
Remote Control Unit



1. STANDBY	Press this button to switch on the TV when in standby mode or to enter standby mode
2. AUTO	Press to do auto configuration directly for PC-RGB.
3. 0-9	Number selection.
4. -/--	To enter a program number for multiple program channel such as 2-1, etc.
5. ↺	Press to return to the previously viewed program.
6. FAV	Press to select the favorite channels.
7. SLEEP	Press to Set the sleeper timer for turning off into standby.
8. CH+ or CH-	Press these buttons to select channels in ascending or descending order.
9. VOL- or VOL+	Press these buttons to lower or raise the volume.
10. DISPLAY	Press to display program or channel's information.
11. ▲ / ▼	UP/DOWN
12. ENTER	Confirmation key
13. ◀ / ▶	LEFT/RIGHT
14. LCD MENU	LCD TV Menu enter/exit.
15. PMODE	Press to cycle through the different picture mode.
16. INPUT	Press to cycle through the input source to select TV, AV, S-VIDEO, SCART, PC.
17. EXIT	Exit menu operation.
18. SMODE	Press this button to select the desired sound mode.
19. MUTE	Mute or restore sound
20. ASPECT	Press to select Picture Ratio.
21. NICAM	Multi-sound mode selection.

OPERATION PARTS

TELETEXT OPERATIONS



1. TEXT	Switch on or off the teletext mode.
2. HOLD	Hold on or off for current page display.
3. INDEX	Request the index page.
4. SIZE	Change display size in teletext.
5. REVEAL	Reveal the teletext information.
6. SUB.PG	Sub page.
7. PAGE UP	Page up.
8. PAGE DN	Page down.
9. MIX	MIX the teletext and TV picture.
10. CANCEL	Cancel teletext information.

SYMPTOMS and CORRECTIONS

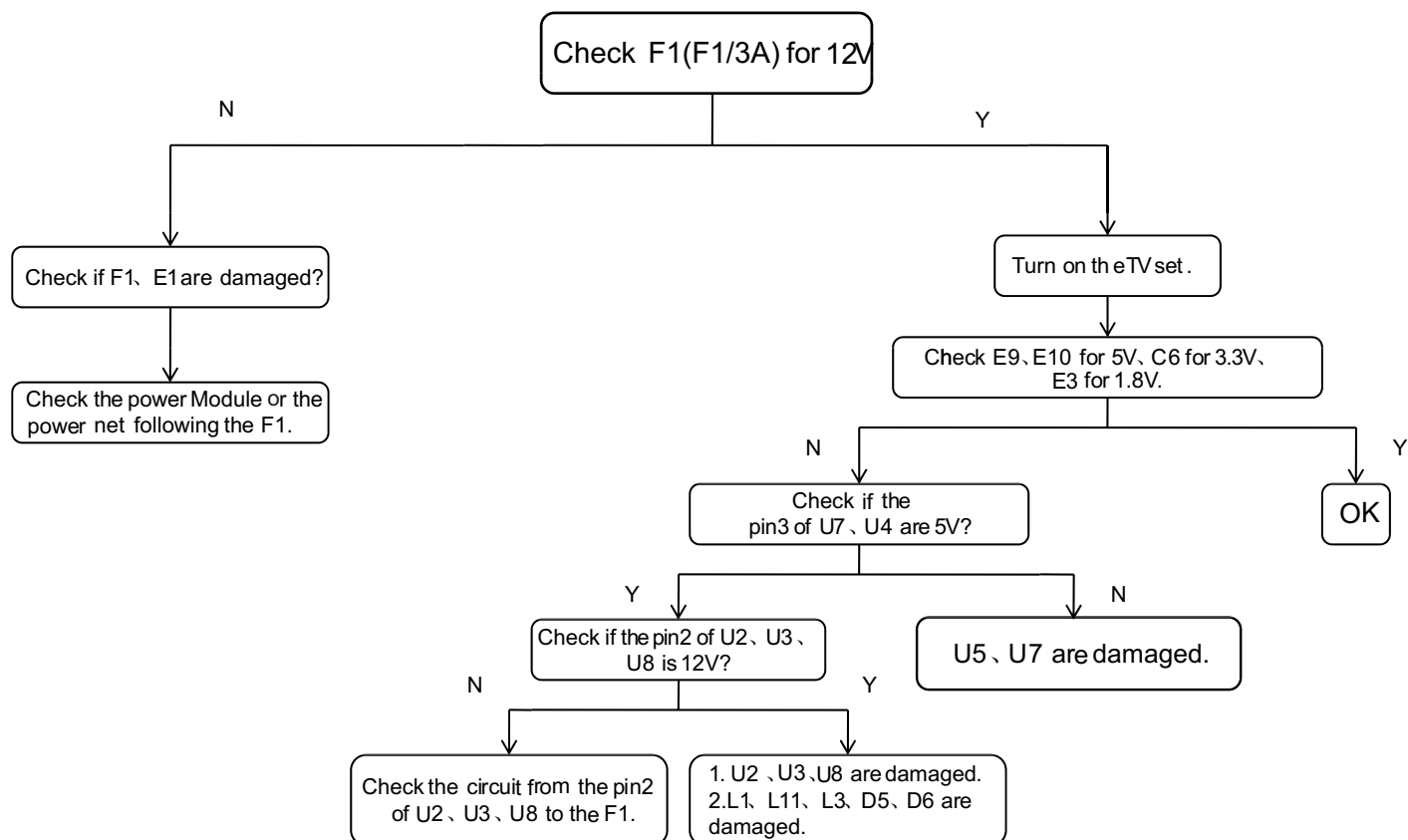
SYMPTOMS and CORRECTIONS for TV SET

Please make these simple checks as indicated (●) on the chart for the respective symptoms and their possible remedies.

Symptoms	Possible Remedies										
	Try different channel, if OK, probably station trouble	Check aerial connections on back of set	Check aerial for broken wires	Re-orient aerial (if indoor type)	Probably local interference, such as an appliance	Adjust fine tuning control	Adjust brightness control	Adjust contrast control	Check if station is broadcasting colour	Adjust colour control	Check if system is correctly set
No picture, no sound	●	●	●			●					●
Poor sound, picture OK	●			●	●	●					●
Poor picture, sound OK	●	●	●	●	●	●	●				●
Weak picture	●	●	●	●		●					●
Blurred picture	●		●	●		●					●
Double image	●	●	●	●		●					
Lines in picture	●		●	●	●	●					
Distorted picture	●		●	●		●					●
Weak reception on some channels	●	●	●	●	●	●					●
Horizontal bars			●	●	●						
Picture rolls vertically	●		●	●	●						●
Poor colour	●	●	●	●	●	●	●	●		●	●
No colour	●	●	●	●		●			●	●	●
Misoperation of Remote control											
Remote control unit no operation											
On Screen Display Control outside the screen											●

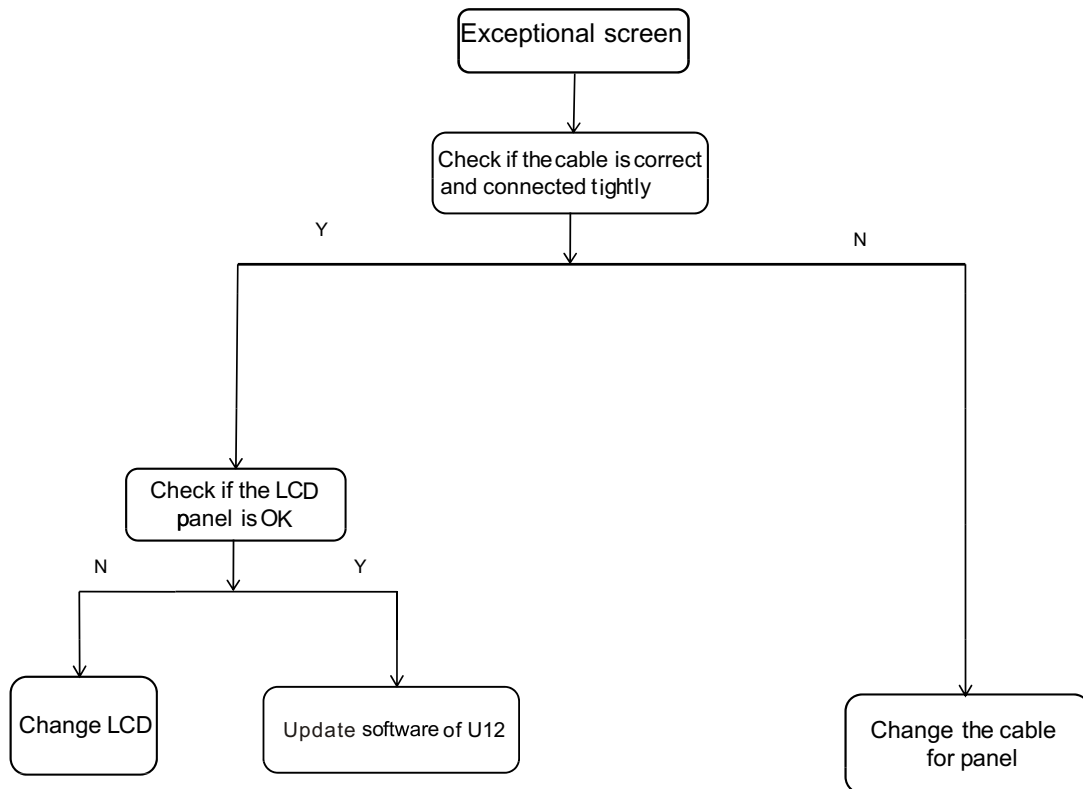
MANI BOARD FAULT JUDGMENT

1. Power supply trouble

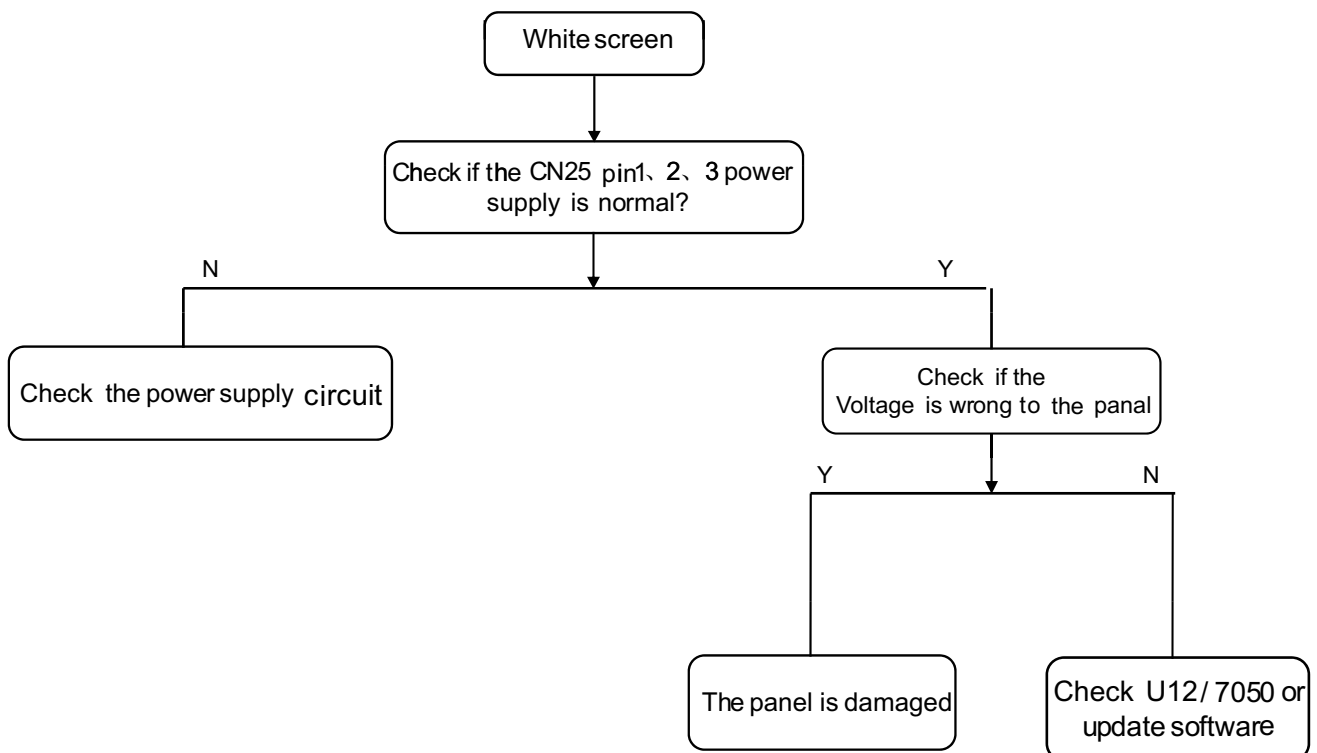


MANI BOARD FAULT JUDGMENT

2. Display Trouble(exceptional screen)

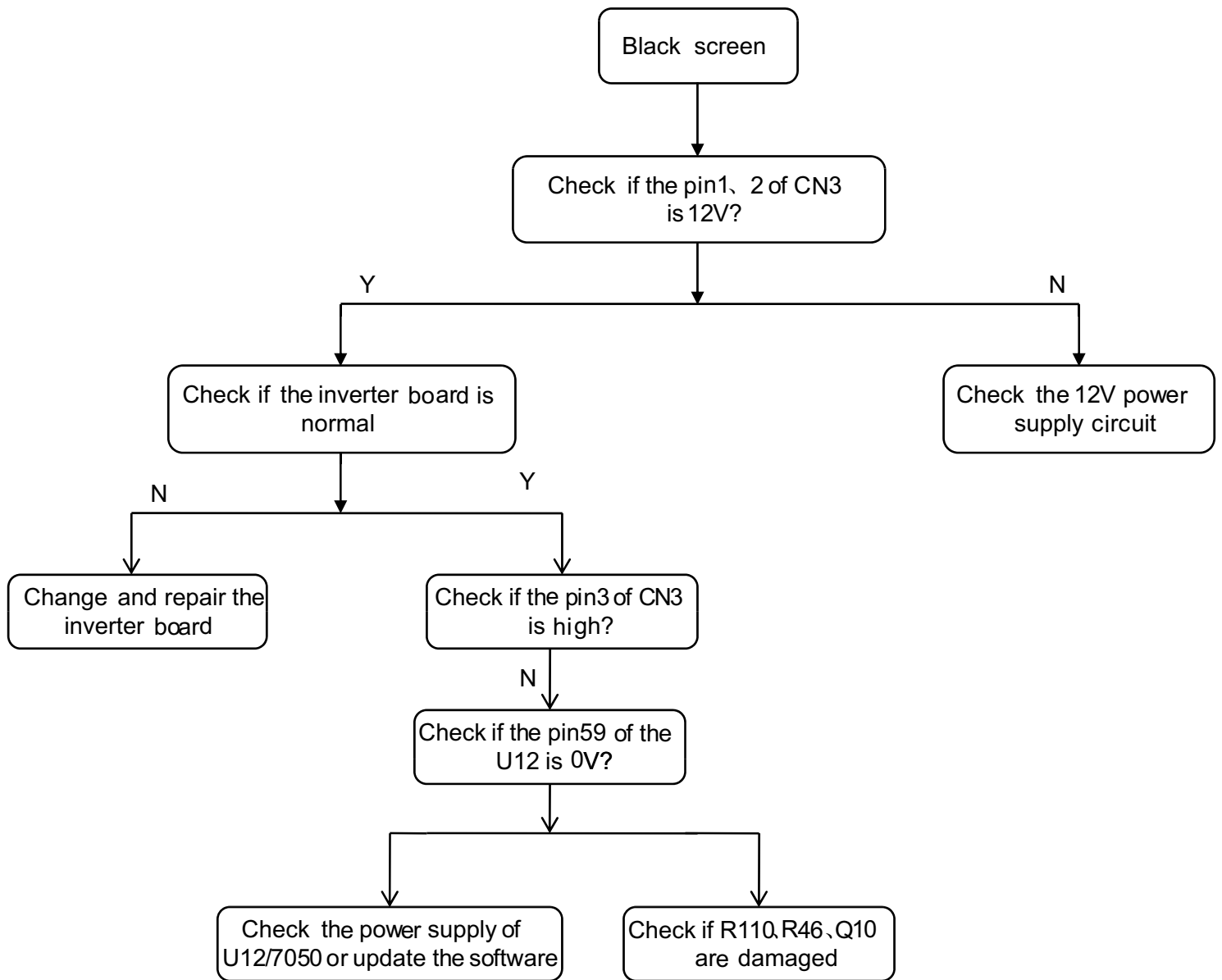


3. Display Trouble (white screen)



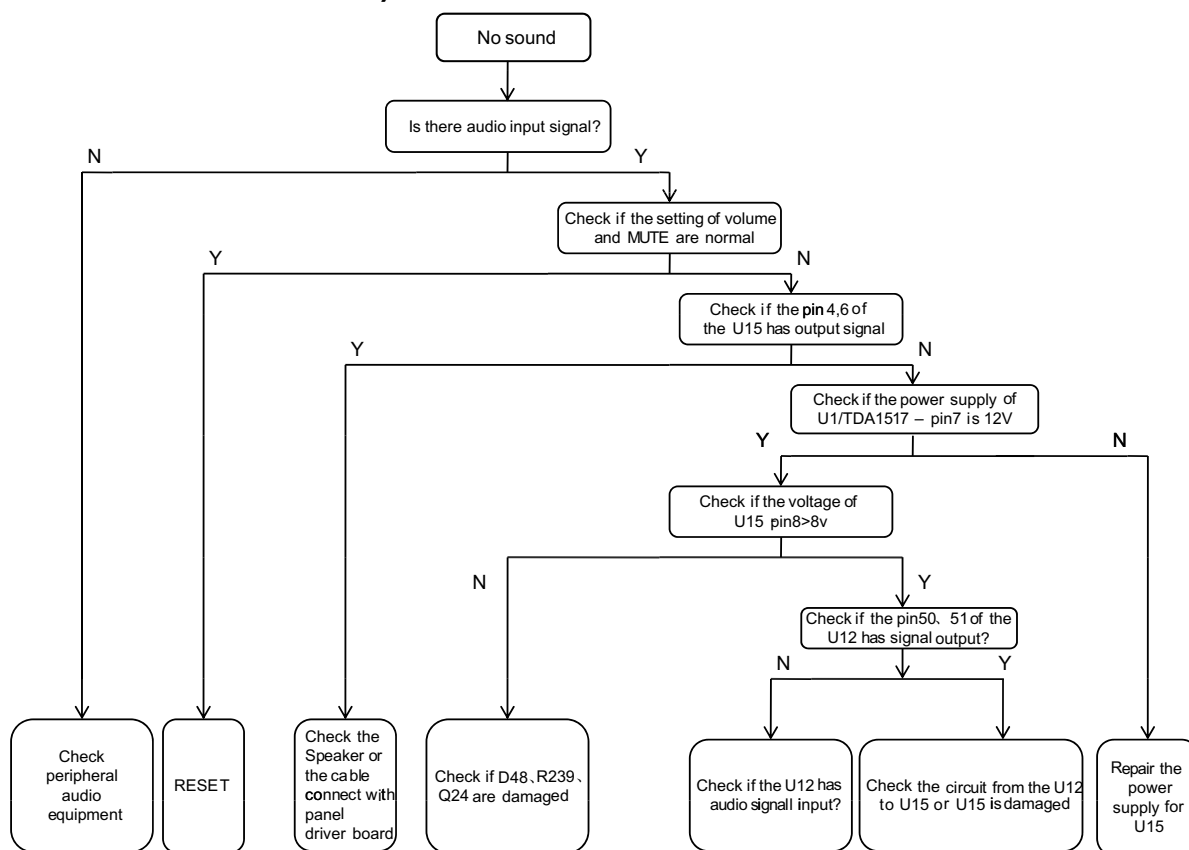
MANI BOARD FAULT JUDGMENT

4. Display Trouble (black screen)

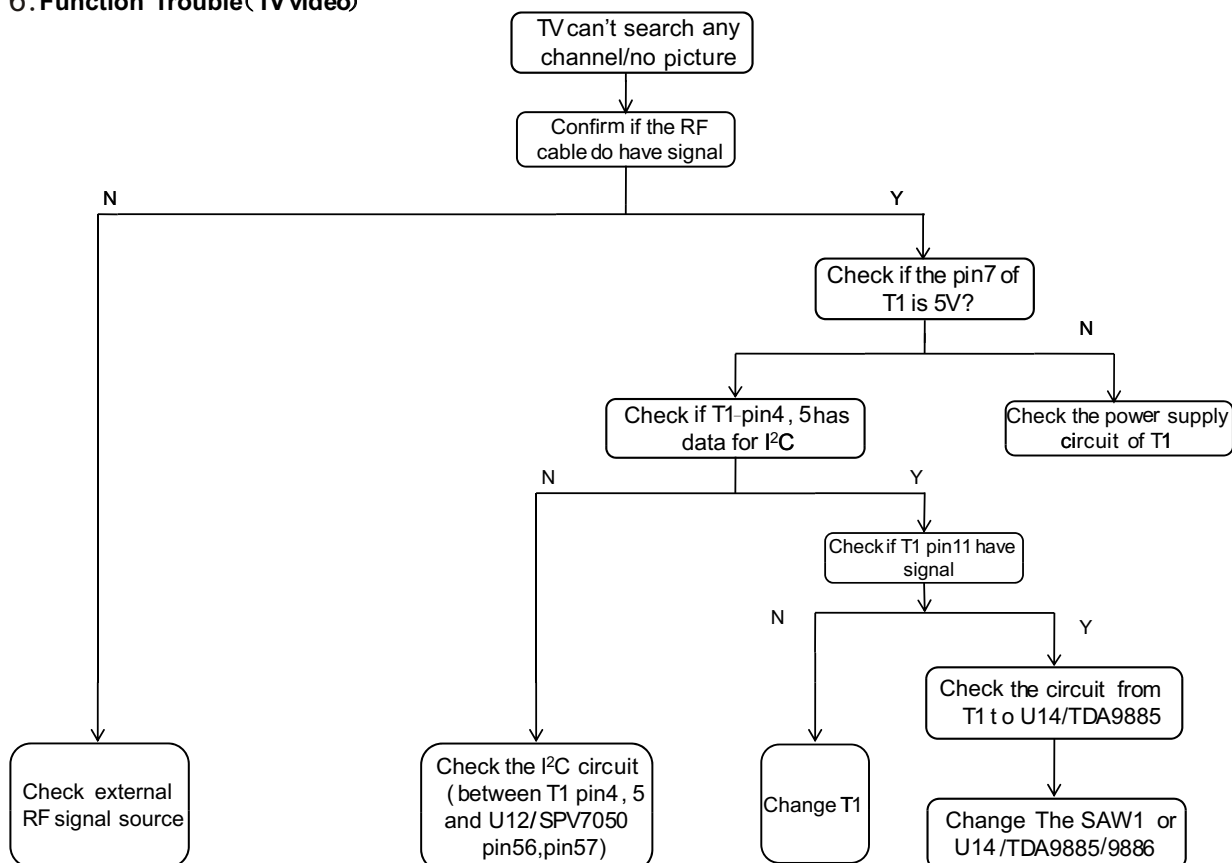


MANI BOARD FAULT JUDGMENT

5. Audio Trouble(No sound)

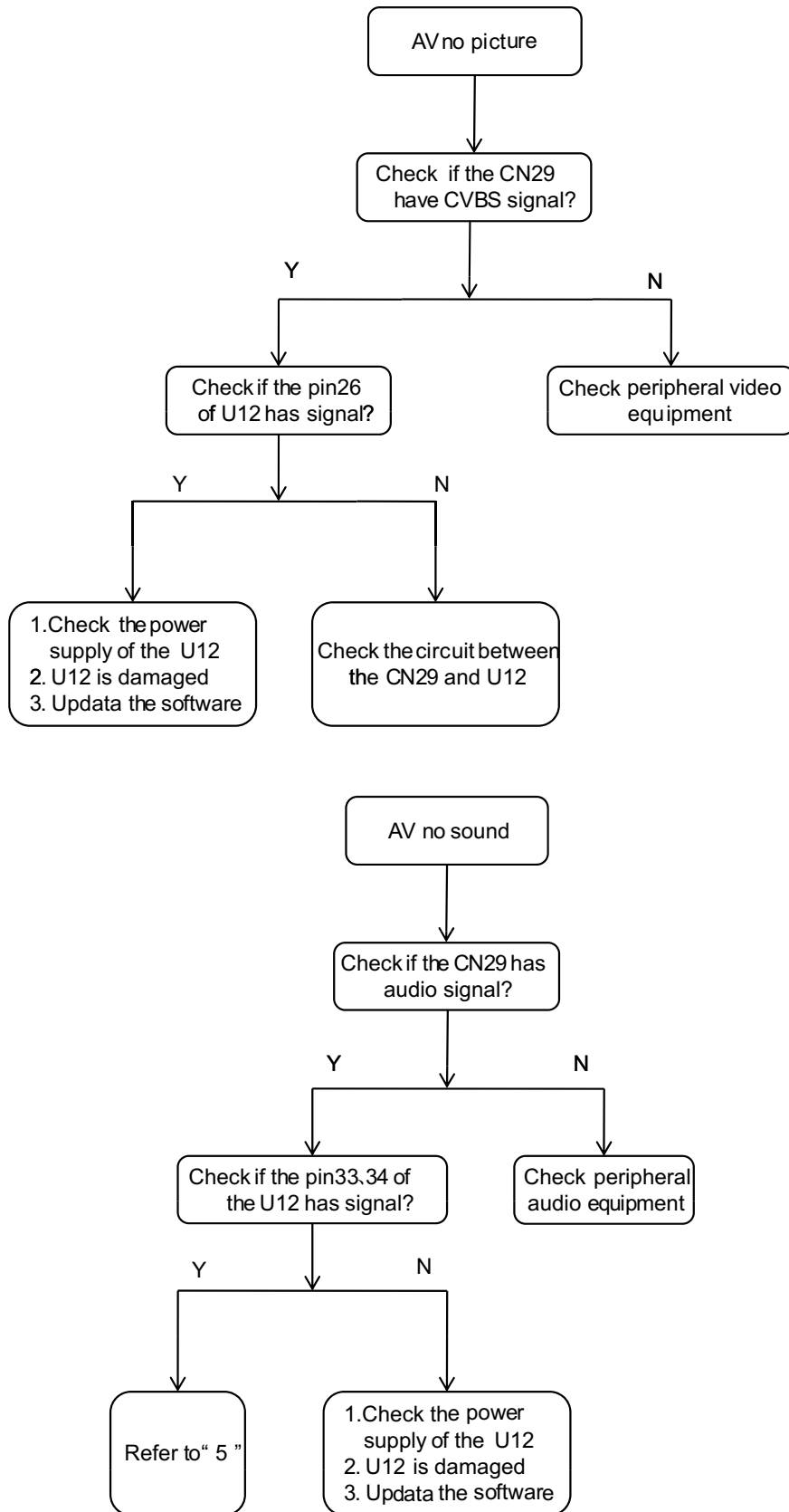


6. Function Trouble(TV video)



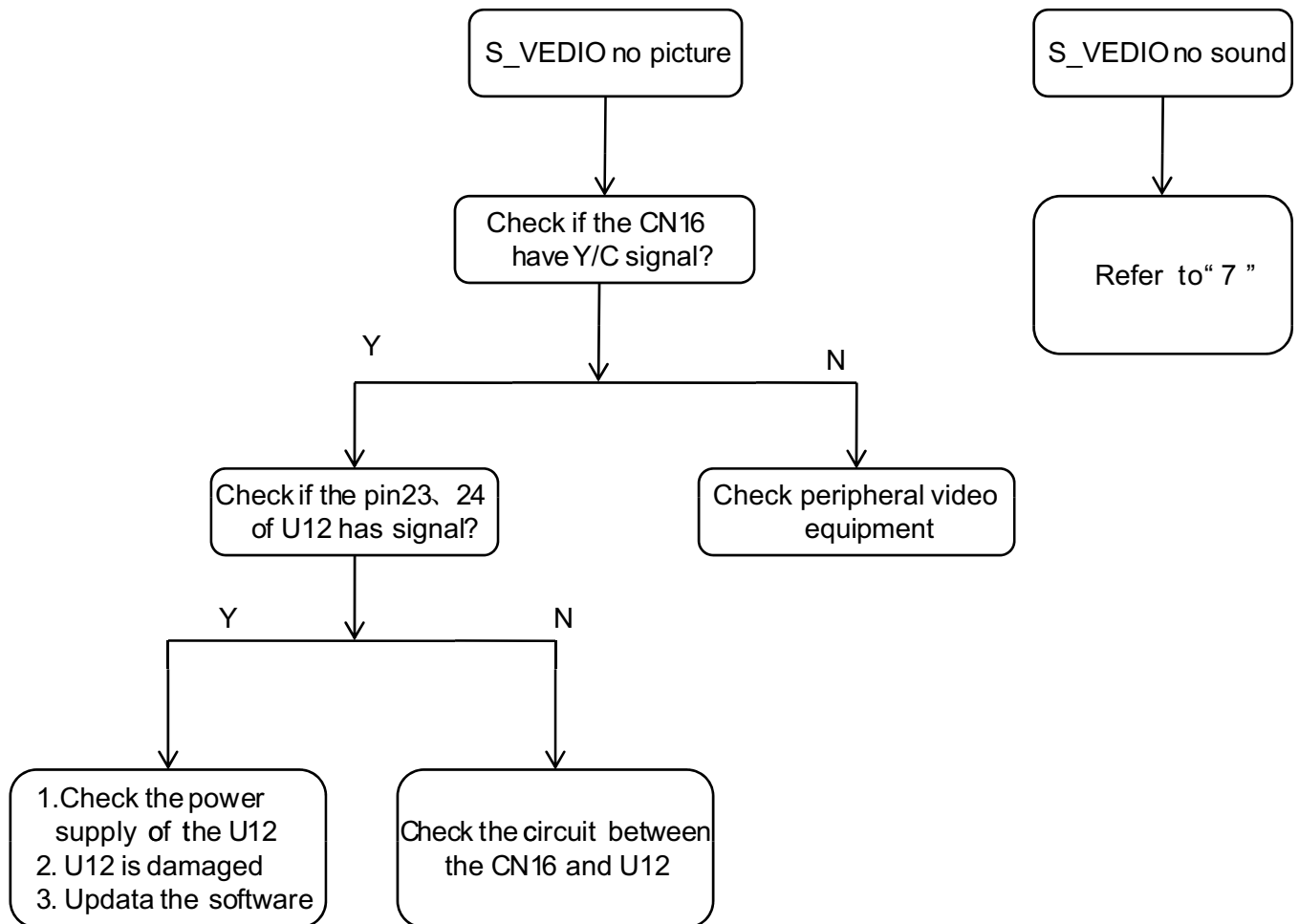
MANI BOARD FAULT JUDGMENT

7.Function Trouble(AV、S_VEDIO、SCART、HDMI、VGA)



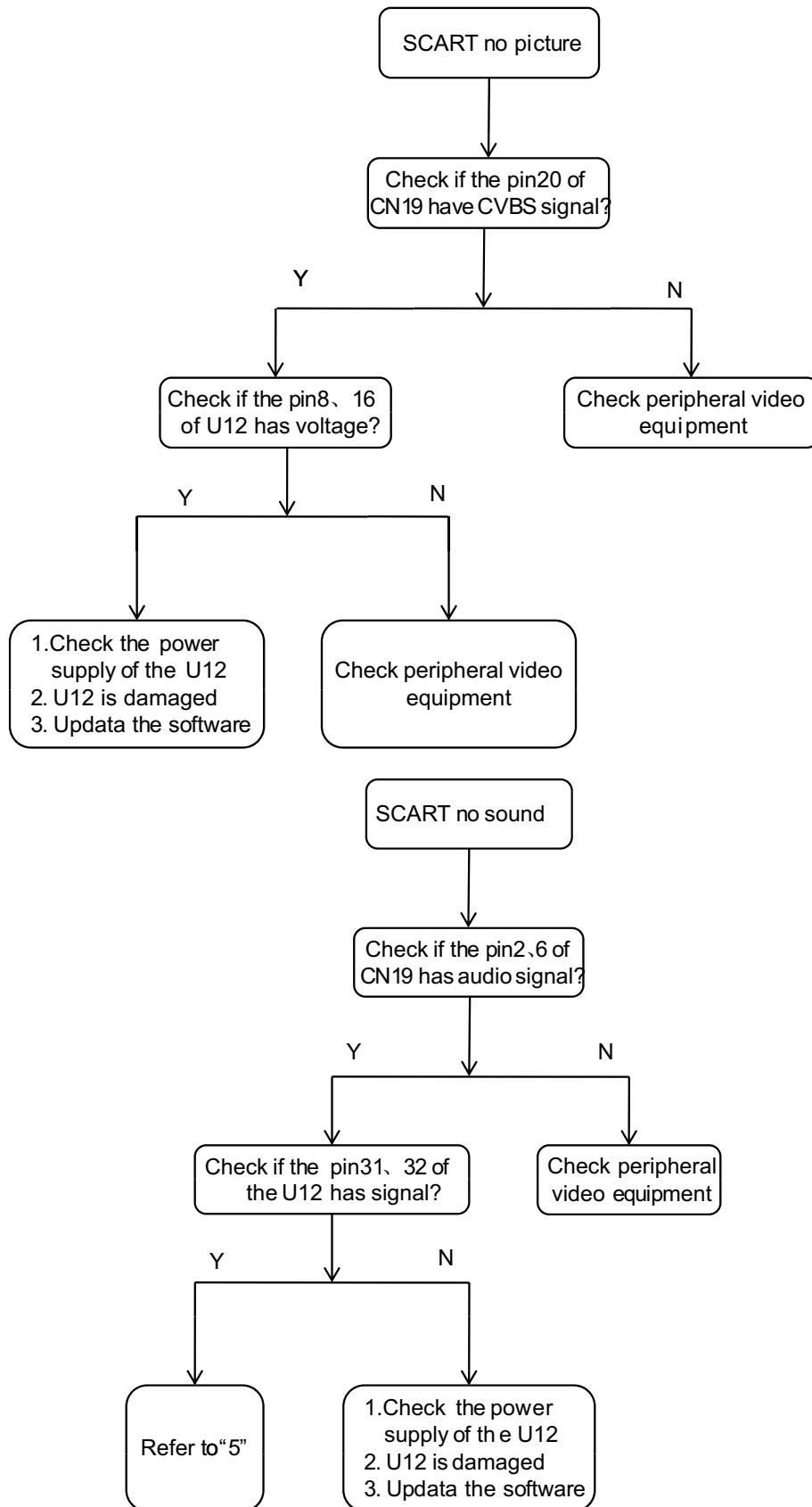
MANI BOARD FAULT JUDGMENT

8. Function trouble (S_VEDIO)



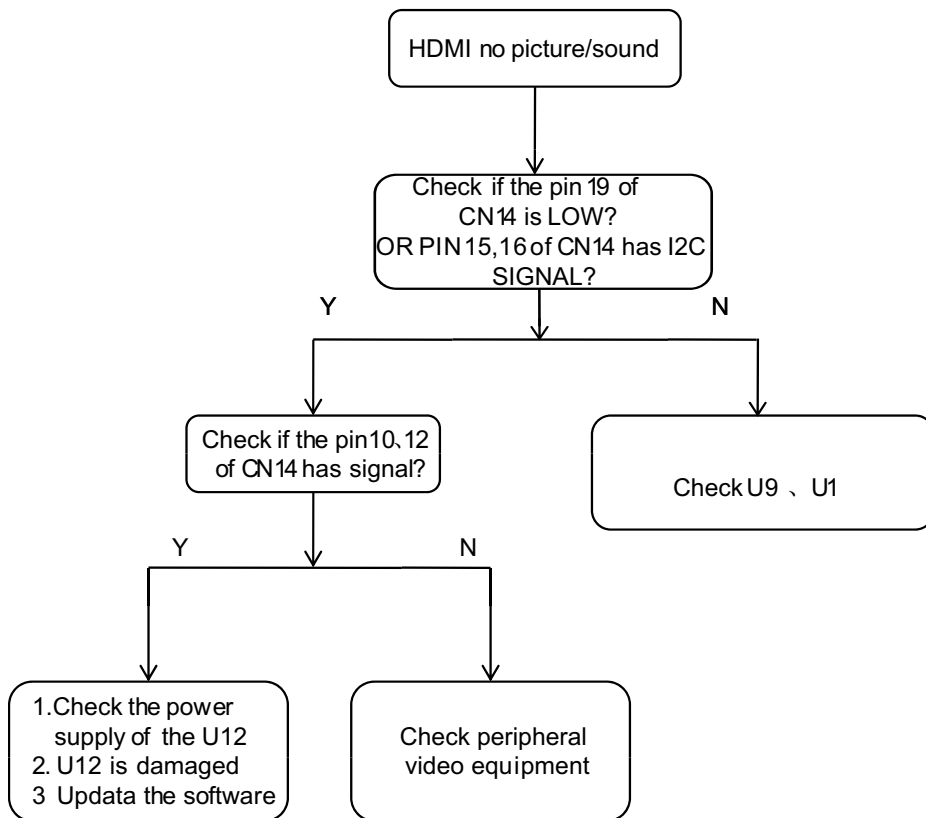
MANI BOARD FAULT JUDGMENT

9. Function trouble(SCART)

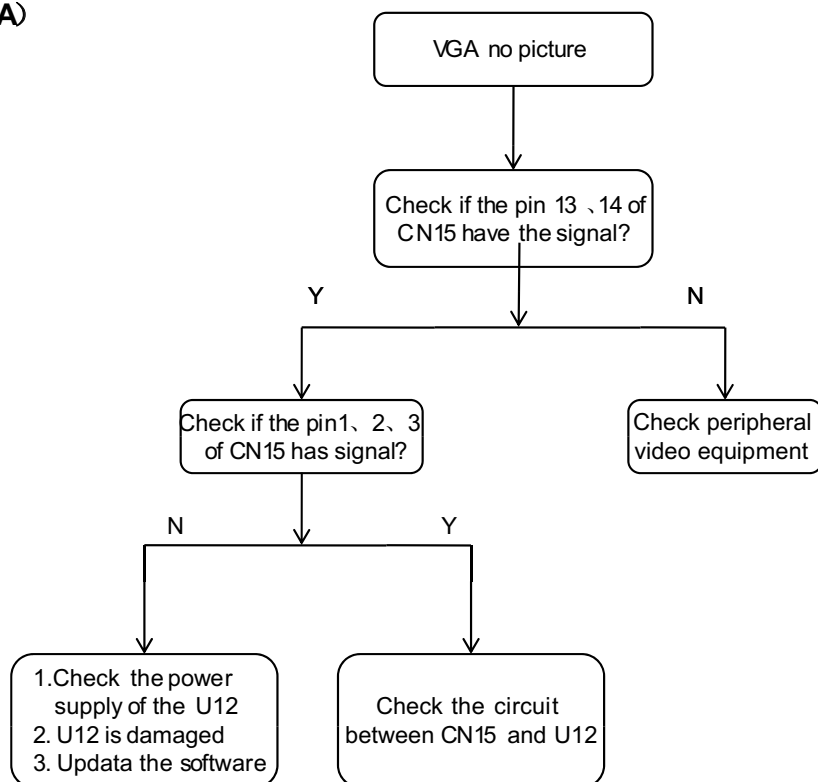


MANI BOARD FAULT JUDGMENT

10. Function trouble (HDMI)



11. Function trouble (VGA)

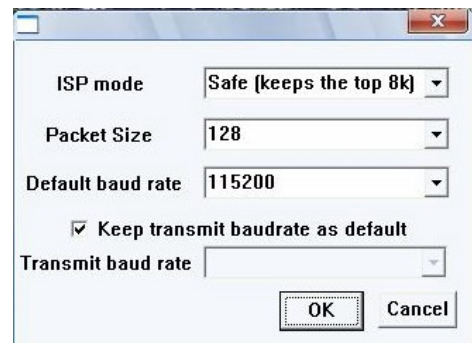
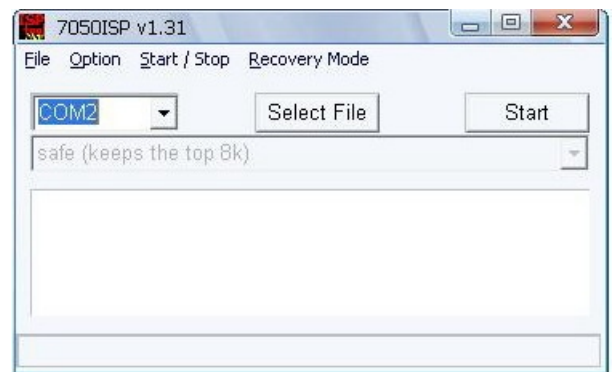


SOFTWARE UPGRADE

■ ATV SOFTWARE UPGRADE

1. PC settings

- 1.1. Please run operation system of windows XP, advice Using English windows XP.
- 1.2. Please open the computer's hardware device manager, Set the Baud Rate of port COM1 and port COM2 to 115200. Please use default setting about other setting Items.
- 1.3. Open control panel of windows XP, enter view item Of folder option, cancel selecting hidden extension of Known file type.
- 1.4. Copy "7050ISP" folder into PC. cancel all File's attributes of folder.
- 1.5. Run 7050ISP.exe, Press "Option" and set these item as:
Choose effectual port between COM1 or COM2.
ISP mode: Safe (Keeps the top 8k)
Packet Size: 128
Default baud rate: 115200
And choose Keep transmit baud rate as default



2. Connection PC and TV

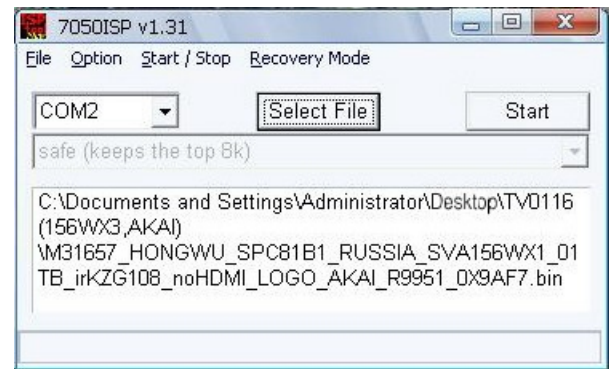
2. 1. Disconnection the Power from TV.
2. 2. Connect the upgrade match board to PC by RS232 Cable, connect the VGA plug on the upgrade match board to VGA Socket on TV main board.
2. 3. Connect DC12V to upgrade match board. but don't connect the Power to TV now.



SOFTWARE UPGRADE

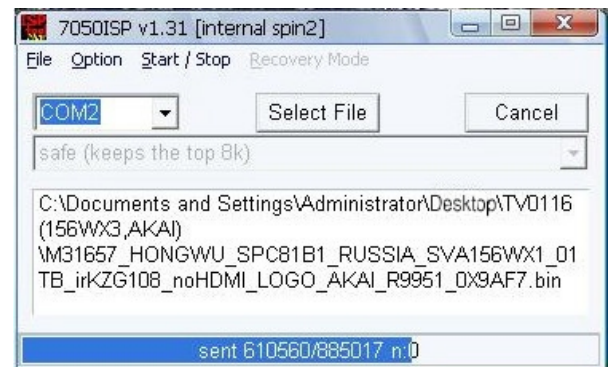
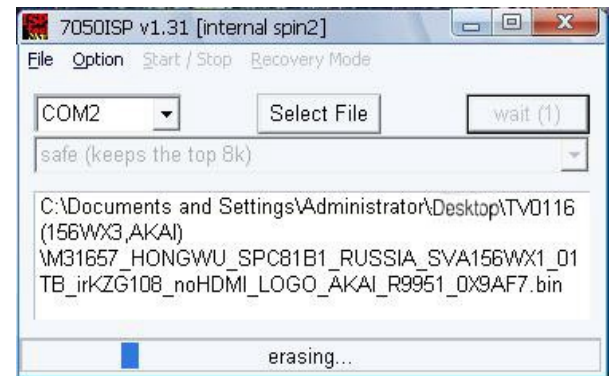
3. Upgrade

3. 1. Press "Select Files", and choose and open the Upgrade file.



3. 2. Connect DC12V to TV main board.

3. 3. Press "Start", then upgrade start.



3. 4. Until it display "finished!...", upgrade is finished.

3. 5. First disconnection the Power from TV, then pull out the VGA plug from TV main board.



Warning: Don't disconnection the Power while upgrading!

Note: This software need restoration after upgraded.

SOFTWARE DATA'S RESTORATION AND ADJUSTMENT

ATV

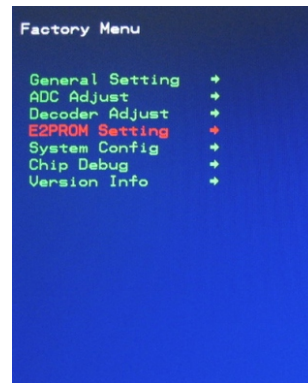
1. OSD RESTORATION

- 1.1. Enter LCD TV menu.
- 1.2. Select Function item.
- 1.3. Select Reset item, then press ENTER button, OSD will Restore.



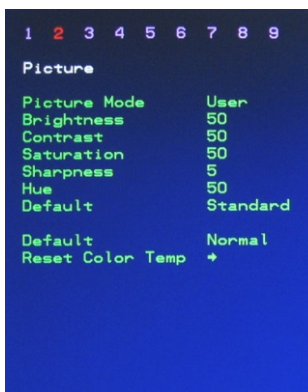
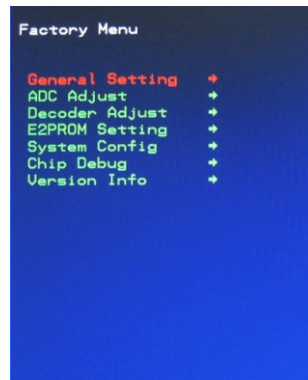
2. INNER DATA RESTORATION

- 2.1. Press LCD MENU button, then press 1147 numbers, It's into Factory Menu. Press LCD MENU button Again can exit Factory menu.
- 2.2. Select E2PROM Setting item, press RIGHT button enter it.
- 2.3. Select Reset Factory item, press RIGHT button or ENTER button, then will restore inner data.



3. SOFTWARE DATA'S ADJUSTMENT

- 3.1. Press LCD MENU button, then press 1147 numbers, It's into Factory Menu. Press LCD MENU button Again can exit Factory menu.
- 3.2. Select per item, it's may adjust the inner data.
- 3.2.1. General Setting 1-9:



SOFTWARE DATA'S RESTORATION AND ADJUSTMENT

1	2	3	4	5	6	7	8	9
Pic_Max_Min								
Bri-Min				8				
Bri-Max				196				
Con-Min				8				
Con-Max				196				
Sat-Min				0				
Sat-Max				255				
Hue-Min				0				
Hue-Max				255				

1	2	3	4	5	6	7	8	9
Image Process								
H Peaking				5				
DLTI				0				
DCTI				1				
UV Ex				0				
UV Offset				0				

1	2	3	4	5	6	7	8	9
Sound								
Sound Mode				Standard				
Treble				50				
Bass				50				
EQ100HZ				50				
EQ300HZ				50				
EQ1kHz				50				
EQ3kHz				50				
EQ8kHz				50				
Default				Vivid				
Volume 0				200				
Volume 1				540				
Volume 2				845				
Volume 3				880				
Volume 4				710				
Volume 5				740				

1	2	3	4	5	6	7	8	9
SOUND LEVEL								
ADC LEVEL				16				
MONO LEVEL				19				
DEC LEVEL				19				
SAP LEVEL				20				
DIGITAL LEVEL				16				
NICAM LEVEL				18				

1	2	3	4	5	6	7	8	9
Panel Config								
Lvds Map				0				
Lvds Bit Color				0				
Lvds Dither				1				
Panel Gamma				0				

1	2	3	4	5	6	7	8	9
EMC Emission								
EMC Test				Off				
EMC Spread spec				Low				

3.2. 2. ADC Adjust_Picture:

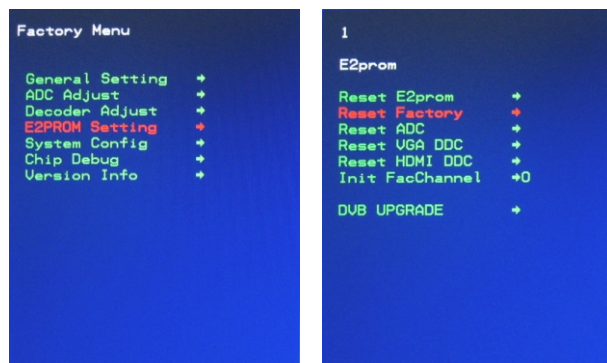
3.2. 3. Decoder Adjust_Picture:

1	2	3	4	5	6	7	8	9
Picture								
Auto Color				*				
R Gain				315				
G Gain				309				
B Gain				333				
R Offset				487				
G Offset				507				
B Offset				482				

1	2	3	4	5	6	7	8	9
Picture								
Con				85				
Bri				21				
Sat				164				
Hue				0				
Reset				→				

SOFTWARE DATA'S RESTORATION AND ADJUSTMENT

3.2. 4. E2PROM Setting, Reset Factory:



3.2. 5. System Config 1-2.



3.2. 6. Chip Debug, Tuner AGC adjust:



3.2. 7. Version Info:



Note: Inner data is in effect after exit all menu. if restore inner data, it get back inner data into default data, and manual adjustment data isn't saved.

Warning: Don't optionally adjust default data, TV can't Work if data is error.

Main Electric Parts List

■ Main Electric Parts List

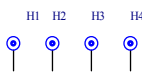
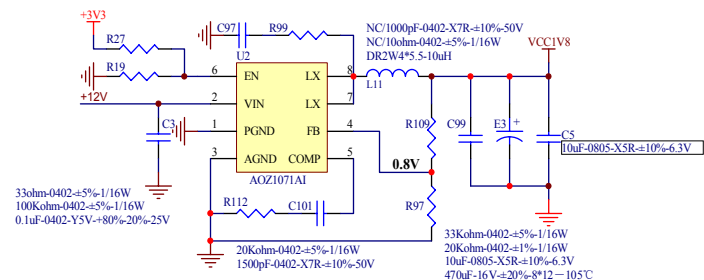
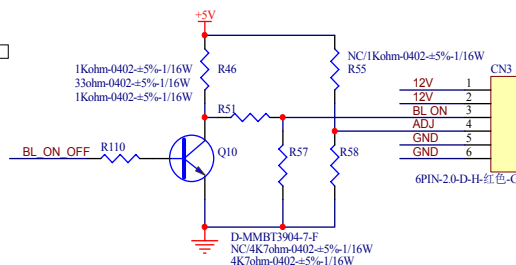
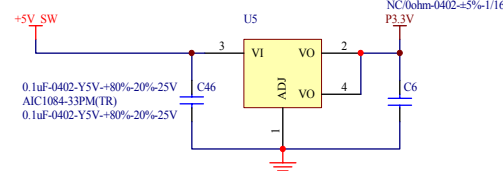
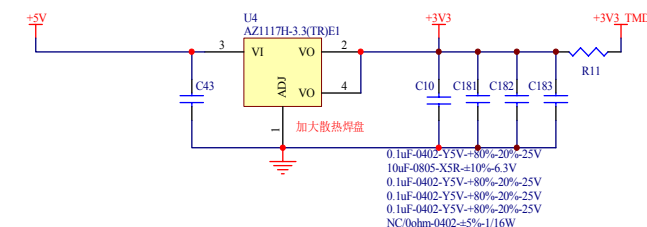
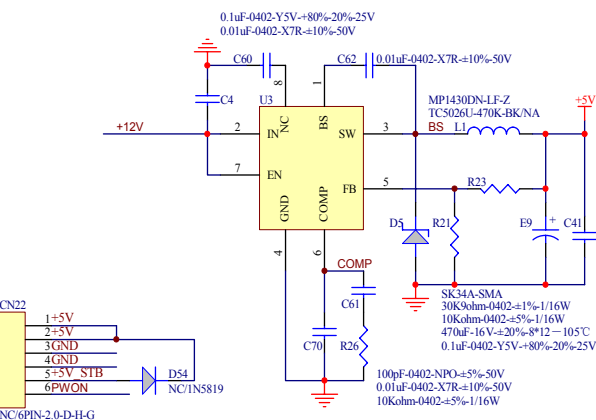
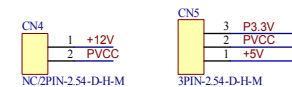
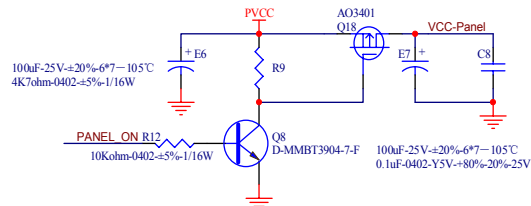
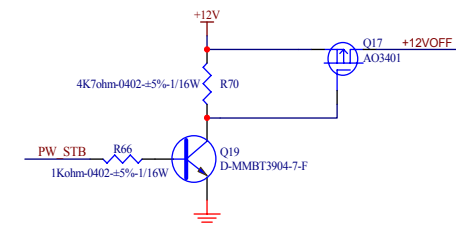
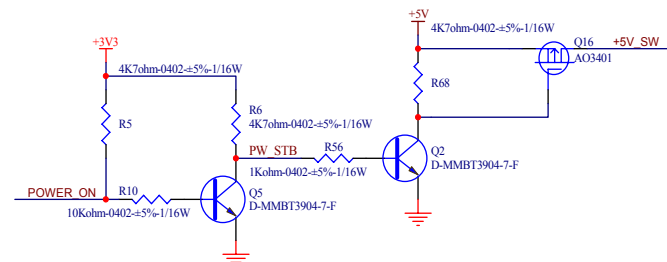
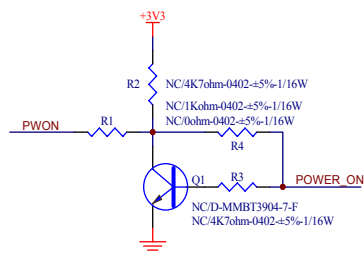
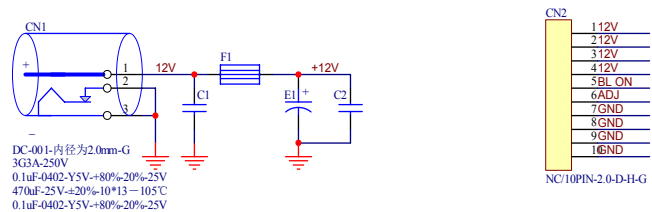
Main Electric Subassembly	Part Name	Referenced Model/Specification	Location
TV Main Board (Model:B. SPC81B-1)	Tuner	TDQ-6F6/T126CW	T1
	IC	TDA1517P	U15
		TDA9885TS	U14
		EH16A	U4, U1
		927432A-2GL1	U13
		T80-75HCP	U11
		SPV7050P	U12
		74HC4052D	U17
		940402B-2GL1	U9, U10
		MP1423DN	U3
		Z1071A1	U2
	SAW Filter	AF389A14Dd	SAW1
	SAW Filter	VF389A1Dc	SAW2
	Crystal	JWT27.000	Y1
Back Light Inverter (Model: MI02BIT12-08-016)	Fuse	250V/3A Tube	F1
	Transformer	EFD20-058GP	T1
	IC	BIT3715	Ic1
	MOS FET	4501SS	U1
LCD Module	LCD Module	HSM156WX1-01TB	
Speaker	Speaker	6 Ω /3W, 2840	
Sensor Board	Sensor Board	190-15W4J2-52	
Key Switch Board	Key Switch Board	190-15W4J7-52	
AC-DC Adapter	AC-DC Adapter	INPUT: 100-240AC, OUTPUT: DC 12V/4A	

SPECIFICATIONS

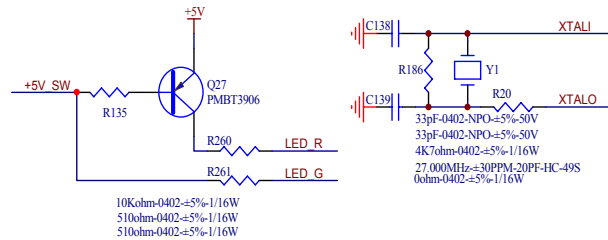
Screen Size	15.6 inch diagonal, 16:9
Power Supply / Power Consumption	100 -240Vac/50Hz/60Hz, 30W
RF System	PAL - BG/DK/ I, SECAM - BG/DK/L
Video System	PAL / SECAM NTSC 3.58/4.43
Frequency Range	48.25 - 863.25 MHz
Aerial Input	75 ohm coaxial
Channels Memory	199
HDMI Input Format	1080p / 1080i
VGA Input Format	Up to 1360*768 / 60Hz
Audio Output	2W + 2W

Specifications may be subject to change without notice for improvement.

ACCESSORIAL CIRCUIT DRAWING

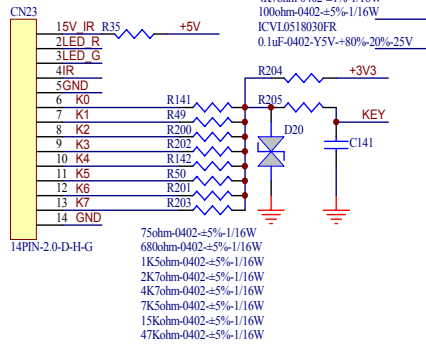
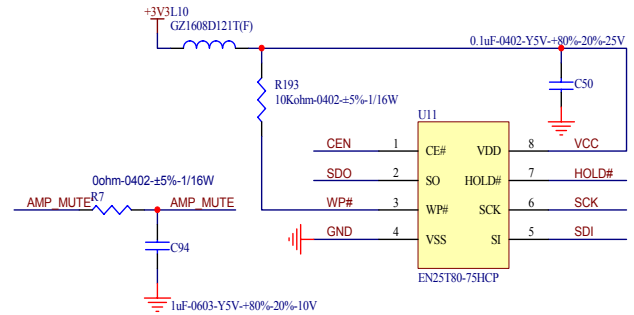


Title			AKAI LTA-16S5X3M		
Size B	Number			Revision	
Date:	17-Apr-2009			Sheet	of



4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W

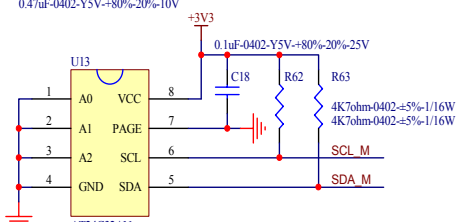
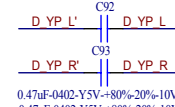
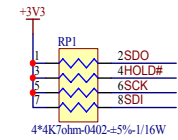
+3V3
R187
R188
R189
R190
R191
R192
AMP MUTE
IR
PANEL ON
BL ON OFF
D YP ON
DVD ON



+3V3
XTALI 103
XTALO 104
XTALO 105
GND 106
PVSS18_AUD 107
DVDD18 108
+3V3 TMD 108
GND 109
AVSS33_TMD 110
RXCM 111
RXCM 112
+3V3 TMD 112
RX0+ 113
RXM[0] 114
GND 115
AVSS33_TMD 116
RX1+ 117
RXM[1] 118
+3V3 TMD 118
RX2+ 119
RXM[2] 120
GND 121
AVSS33_TMD 122
DVDD18_TMD 123
PVDD33_ADC 124
FILT 125
PC HSIN 126
PC VSIN 127
MIDSCV 128

U12
SPV7050P

CK SPI 64
GPIO10IR_DAT 65
LED_G/IRSTN/PWM0/GPIO4 66
POWER_ON/ITDI/GPIO3 67
BL_ADJ/ITDO/PWM1/GPIO2 68
BL_ONJTMS/GPIO1 69
MUTE_AMP/CLK/GPIO0 70
SDA_M 71
SCL_M 72
DVDD33 73
SARIN0 74
DVSS 75
VCC1V8 76
AOUT1R 77
AOUT1L 78
GND 79
VCM_AUO 80
+3V3 81
SC RO 82
SC LO 83
2SIF 84
VRN_SIF 85
VRN_SIF 86
VCM_SIF 87
VRP_SIF 88
AVDD33_SIF 89
AVSS33_SIF 90

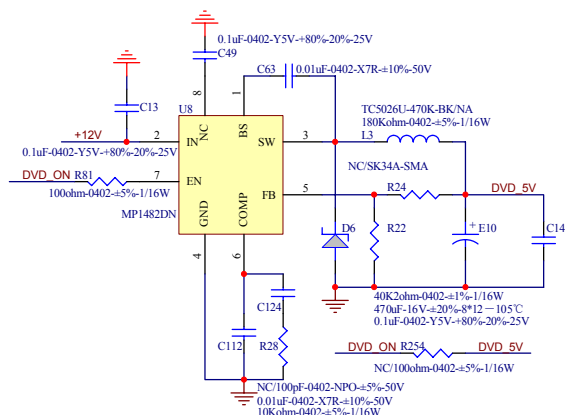
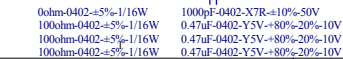


VCC-Panel 1
VCC-Panel 2
GND 3
GND 4
TX0M0 5
TX0M1 6
TX0M2 7
GND 8
TXCLKOM 9
TX0M3 10
TX1M0 11
TX1M1 12
TX1M2 13
GND 14
TXCLK1M 15
TX1M3 16
VCC-Panel 17
GND 18
TX0P0 19
TX0P1 20
TX0P2 21
GND 22
TX1P0 23
TX1P1 24
TX1P2 25
GND 26
TXCLK1P 27
TX1P3 28

2*15PIN-2.0-D-H-M

AKAI LTA-16SSX3M

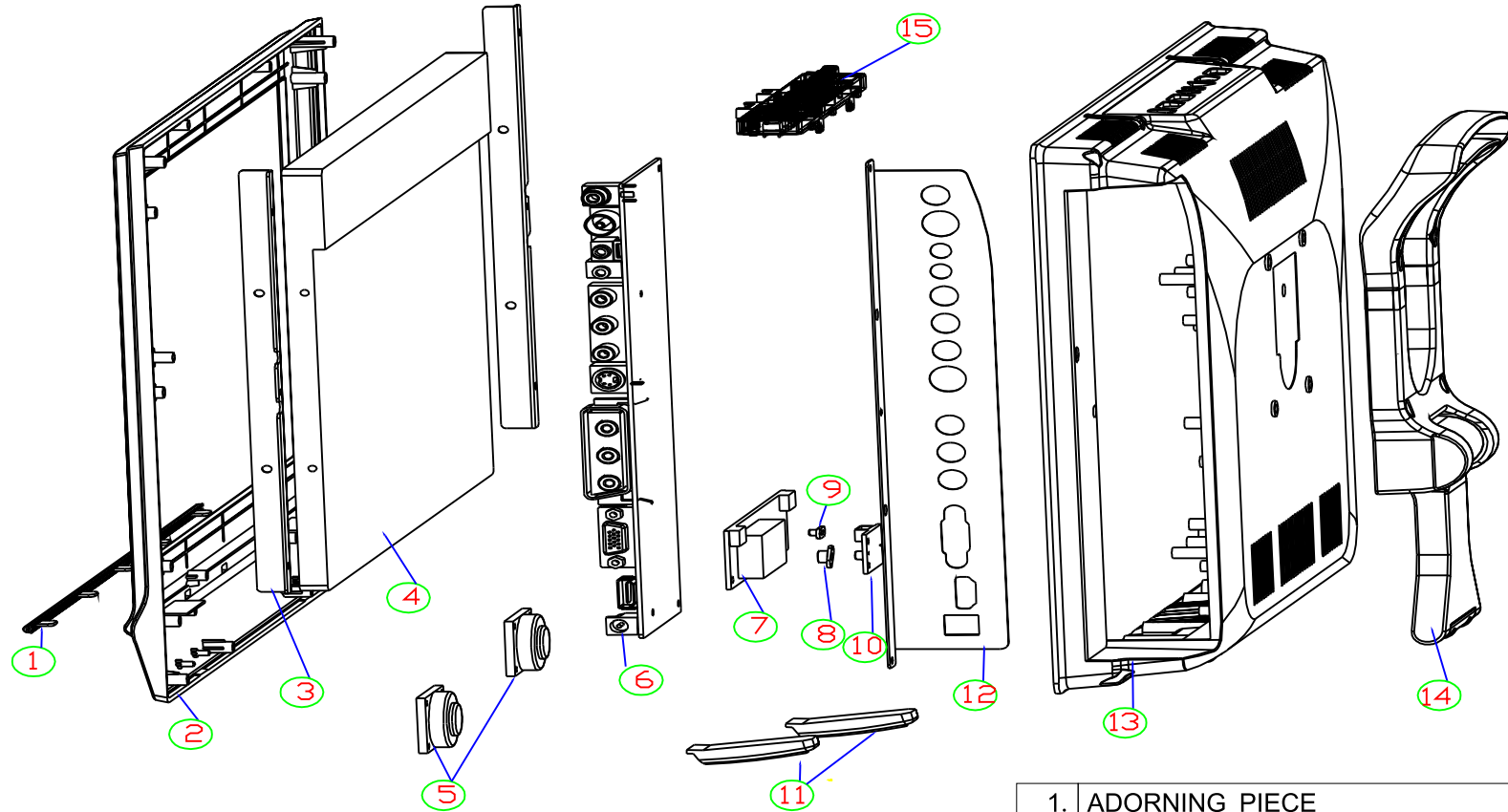




AKAI LTA-16S5X3M



Exploded view AKAI LTA-16S5X3M



1.	ADORNING PIECE
2.	FRONT SHELL
3.	METAL FIXING SHELF FOR LCD MODULE
4.	LCD MODULE
5.	SPEAKER
6.	TV MAIN BOARD
7.	BACK LIGHT INVERTER
8.	TRANSPARENT LID FOR IR
9.	TRANSPARENT LID FOR LAMP
10.	SENSOR BOARD
11.	RUBBER FOOT CUSHION
12.	PANEL FOR JACK & SOCKET
13.	BACK SHELL
14.	HANDLE
15.	KEY AND KEY SWITCH BOARD