

Hitachi Service Manual - LE49S508



49" LED LCD TV

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for use by qualified Hitachi servicers only

CAUTION: Be sure to read this manual before servicing. To ensure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this LCD TV. Be sure to read cautionary items described in the manual before servicing. These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that described in the operating instructions unless you are qualified to do so.

SERVICE WARNING

1. Replacement work should be started after the Panel Module and the AC/DC Power supply have become sufficiently cool.
2. Special care should be taken when working near the display area in order not to damage its surface.
3. The Panel Module should not be touched with bare hands in order to protect its surface from blemishes and damage.
4. It is recommended that you use clean soft gloves during the replacement work in order to protect not only the display area of the Panel Module but also yourself.

● Cleaning the TV's LCD screen panel

Before cleaning the TV, turn it off and disconnect the power plug from the power outlet. To prevent scratching or damaging of the LCD screen face, do not knock or rub the surface with sharp or hard objects. Clean the screen with a soft cloth moistened with warm water and dry with a second soft cloth. If it is not enough, then use a cloth with mild detergent. Do not use harsh or abrasive cleaners.

● Cleaning the TV's cabinet

Use a soft cloth to clean the TV's cabinet and control panel. When excessively soiled, dilute a neutral detergent in water, wet and wring out the soft cloth in it, gently clean the cabinet, and then wipe it down with a dry soft cloth. Never use acid/alkaline detergents, alcoholic detergents, abrasive cleaners, powder soaps, OA cleaners, car wax, glass cleaners, and so on. They will cause discoloration, scratches or cracks.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid-state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically 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 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 reasons 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.

Lead Free Solder (PbF)

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repairing of this product.

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Caution for Safety

Please read this page before repair the TV.

The following safety precautions are designed to help you stay safe and prevent accidents during the repair work.

• Please take note of these cautionary flags.

	WARNING	This means "Potential to sustain injury or even death."
	CAUTION	This means "Potential to sustain breakage or irreparable damage."

• Also note these cautionary icons.

	This means "CAUTION"		This means "MUST"
	This means "POTENTIAL ELECTRIC SHOCK"		This means "DO NOT"

 WARNING			
■ Follow instructions.		■ Must use same types of wires and components.	
	The cabinet, chassis, and labels are parts that require attention. You must follow the caution notes and safety instructions presented throughout this User Manual to prevent damage to them or injury to yourself.		The TV uses special tubes and tapes made from insulated materials. Moreover, some materials are kept from making contact with the PWB for the sake of safety. Internal leads are kept from hot parts or high voltage parts by means of clamps or other measures. As such, you must restore these parts to their original conditions in order to prevent electric shock or fire.
■ Prevent electric shock.		■ Perform safety check when done.	
	Exercise caution while working on the device as the TV contains high voltage parts and supply. It is possible to sustain severe injury or death if you accidentally touch the wrong parts. You must disconnect the power supply while servicing, reassembling, or change parts. If you touch a live connection it is possible to sustain severe injury or death.		Every part (such as removed screws, components, and wiring) must be restored to their prior conditions after servicing. Be sure to check everything that was repaired for damage or mistakes. Also measure the insulated impedance with a meg-ohm meter to confirm that the impedance value is more than 4M ohm. If the impedance value is less than 4M ohm, then electric shock or fire may result.
■ Use recommended components.			
	Use only the recommended components or components that structurally identical to the originals. This is to ensure safety and reliability. Pay special attention to parts in the parts list and circuit diagrams marked with  . If you use non-recommended components, then electric shock or fire may result.		

Features / Specifications

1. PANEL		(see the panel condition sheet)	
	Resolution	Full-HD(1920 x 1080)	Full-HD(1920 x 1080)
	Back Light	LED Back Light (Edge Light) (built-in converter)	LED Back Light
	Backlight		Blinking
2. Built-in Tuner System			
	Analog System	NTSC	NTSC M
		Air/Number of Position	CH2~CH69
		Cable/Number of Position	CH1~CH135
	Digital System	ATSC	ATSC
		Air	8VSB
		Cable	J.83B
3. Receiving Signal			
	Composite Video	NTSC	NTSC
	Component Video or D-Video	480i /480p/720p/1080i /1080p(60Hz)	Yes
		576i /576p/720p/1080i/1080p(50Hz)	Yes
	PC Input	VGA (640 x 480@60)	Yes
		VGA (720 x 400@70)	Yes
		S-VGA (800 x 600@60)	Yes
		XGA (1024 x 768@60)	Yes
		W-XGA (1280 x 720@60)	Yes
		W-XGA (1280 x 768@60)	Yes
		W-XGA (1360X768@60)	Yes
		S-XGA (1280 x 1024@60)	Yes

		WU-XGA (1920 x 1080@60)	Yes
	HDMI(AV Format)	480i /480p/720p/1080i (60Hz)	Yes
		576i /576p/720p/1080i (50Hz)	Yes
		1080p (24/30/60Hz)	Yes
		1080p (25/50Hz)	Yes
	HDMI(PC Format)	VGA (640 x 480)	Yes
		S-VGA (800 x 600)	Yes
		XGA (1024 x 768)	Yes
		W-XGA (1280 x 768)	Yes
		W-XGA (1360X768)	Yes
		S-XGA (1280 x 1024)	Yes
		WU-XGA (1920 x 1080)	Yes

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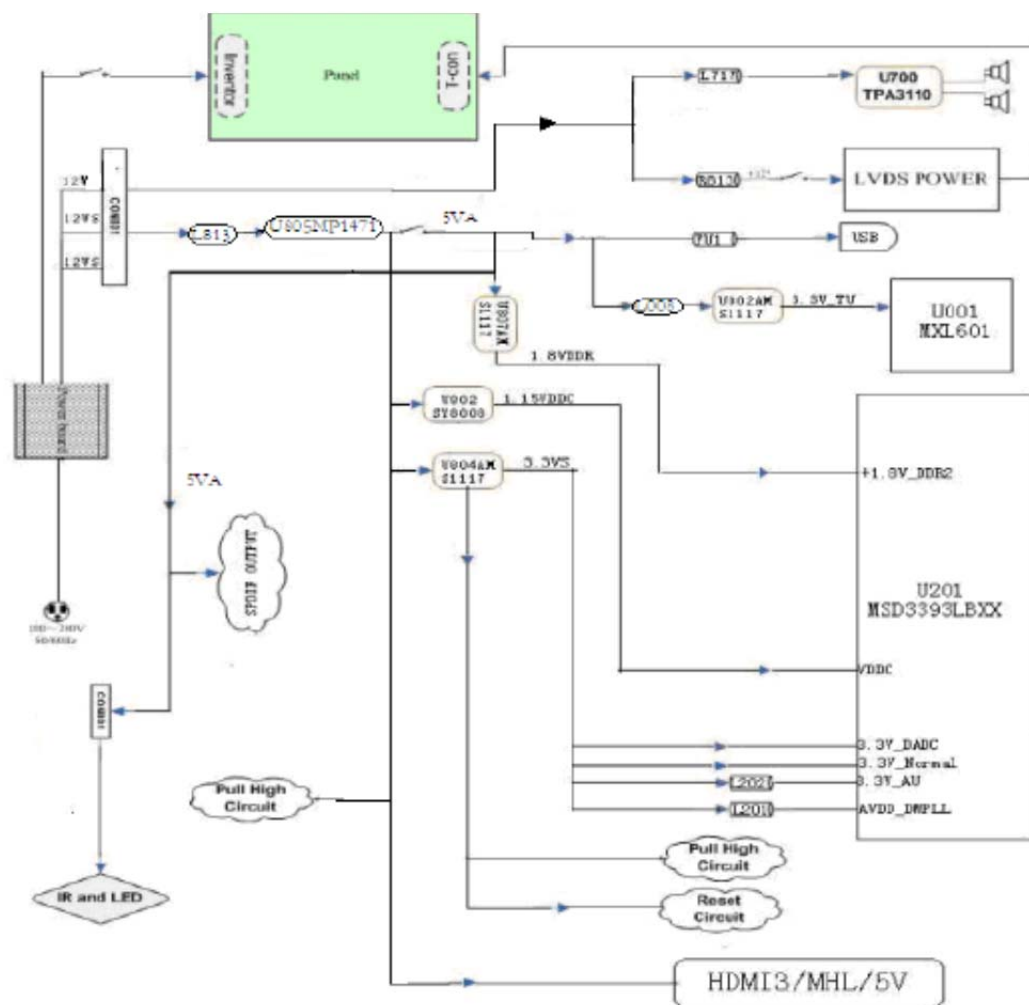
4. MAIN SYSTEM			
	Freeze		Yes(Picture Freeze, Audio Mute)
	V-chip, Parental control		Yes
	Closed Caption		Yes
	MTS / SAP	BTSC	Mono/Stereo/SAP
	TV Software Update	USB	Yes
	Quick Power on		No
	Program Timer	Auto Sleep	Yes
		Sleep Timer (30, 60, 120min etc.)	Yes
	Timezone		Yes
	OSD language	Number of language -----(FONT is provided by ODM)	English 、 Français 、 Español
	Video Compression	MPEG-2 MP@HL	Yes(must have license)
	Audio Compression	MPEG-1 Layer I / II	Yes(must have license)
		MPEG-2 Layer I / II	Yes(must have license)
		AC3/Dolby digital	Yes(must have license)
	Super resolution		No
	3D	2D-3D	No

5. Picture Size Select			
	Picture size Select	TV/AV/YPbPr	Normal/Wide/Zoom/Cinema
		HDMI	Normal/Wide/Zoom/Cinema/PC Model
		PC/USB	Normal/Wide
	Auto Aspect		No
6. AC-Input			
	AC-Input Voltage	100-240V 50/60Hz	Yes
	AC Cable(The cable mustn't be binded by the material using)	US 2P	Yes

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7. PICTURE			
	Dynamic Back Light control		Yes
	3-2 / 2-2 Pull down		Yes
	Color Management		Color Temp Adjust
	Comb Filter	3D Y/C	Yes
	Noise Reduction	DNR	Yes(Except USB)
	Picture Mode	Number of picture mode	Standard/Dynamic/ECO /Movie/Game/Custom
	Home/Retail Mode		Yes
8. SOUND			
	Surround		Yes
	Dolby	Dolby Digital	No
	Number of speaker		2
	Audio Delay	Lip Sync	Yes(0 - 25)
	output Power(10% RMS)	Speaker	8W+8W
		L/R Audio Out	2.0V(Peak to Peak)
	Equalizer	120Hz/500Hz/1.5KHz/5KHz/10KHz	Yes
	Perfect Volume	Sound Mode	Standard/News/ Movie/Sports/Custom
	Balance		Yes

BLOCK DIAGRAM



PRIMARY PART NUMBERS

Please call our Call Center for Triage help. During warranty, ALL warranty parts are shipped out through our Call Center. They will have the latest information on how to determine which board or assembly is causing the problem. Warranty Servicers should call: 800-654-7013

This product is serviced at the board/assembly level. Hitachi does NOT support component level service of this model. Functional Parts available include:

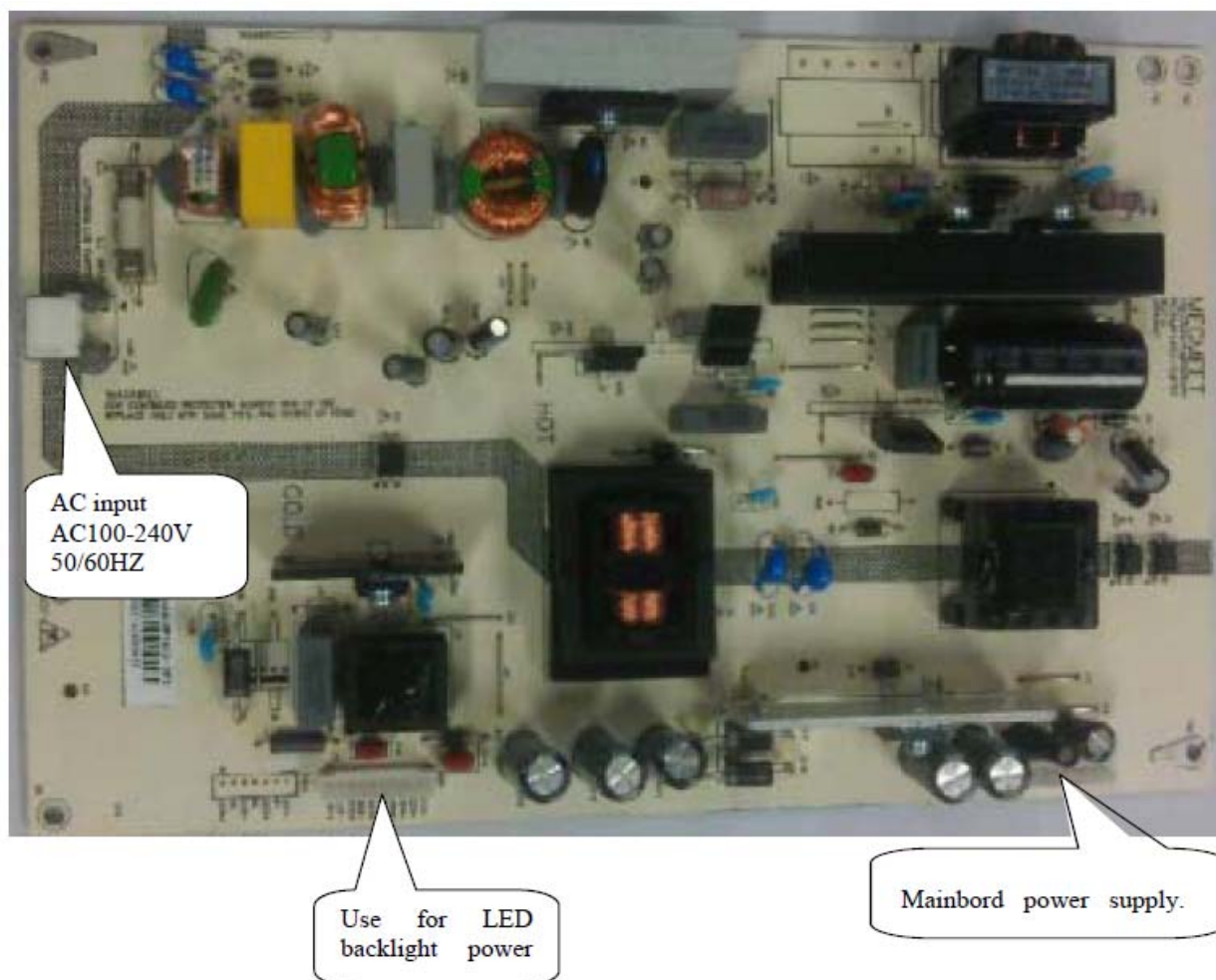
- 1) Main Board - - - - - Part Number: 850107075
- 2) Power Supply - - - - - Part Number: 850108892
- 3) Remote Receiver Board - - - - - Part Number: 850069731
- 4) Keypad Board - - - - - Part Number: 850101640
- 5) Speaker - - - - - Part Number: 850053985
- 6) Remote Control - - - - - Part Number: 850095845

Normally not considered warranty:

- 7) Power Cord - - - - - Part Number: 850097760
- 8) Back Cover - - - - - Part Number: 850102668
- 9) Stand/Neck Assy - - - - - Part Number: 850104771

Due to cost, the panel assembly is normally not replaced in the field on this model. For instructions, please call the Call Center. For Out of Warranty price/availability, please contact your Hitachi Authorized Parts Distributor.

POWER SUPPLY



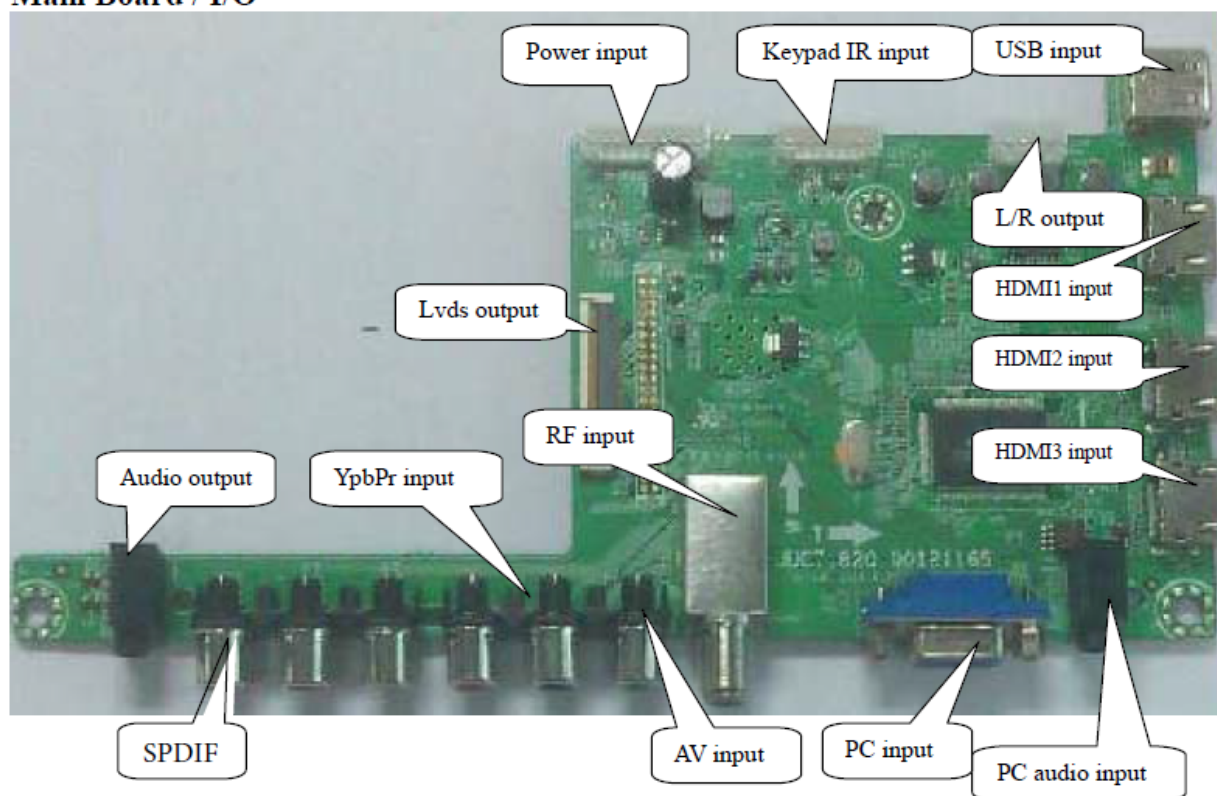
Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Units
3.3V Supply Voltages	V _{VDD_33}	3.14		3.46	V
1.8V Supply Voltages	V _{VDD_18}	1.70		1.90	V
1.15V Supply Voltages	V _{VDD_115}	1.12	1.15	1.18	V
Ambient Operating Temperature	T _A	0		70	°C
Junction Temperature	T _J			125	°C

MAIN BOARD



Main Board / I/O



1.HDMI and YPbPr support 1080P

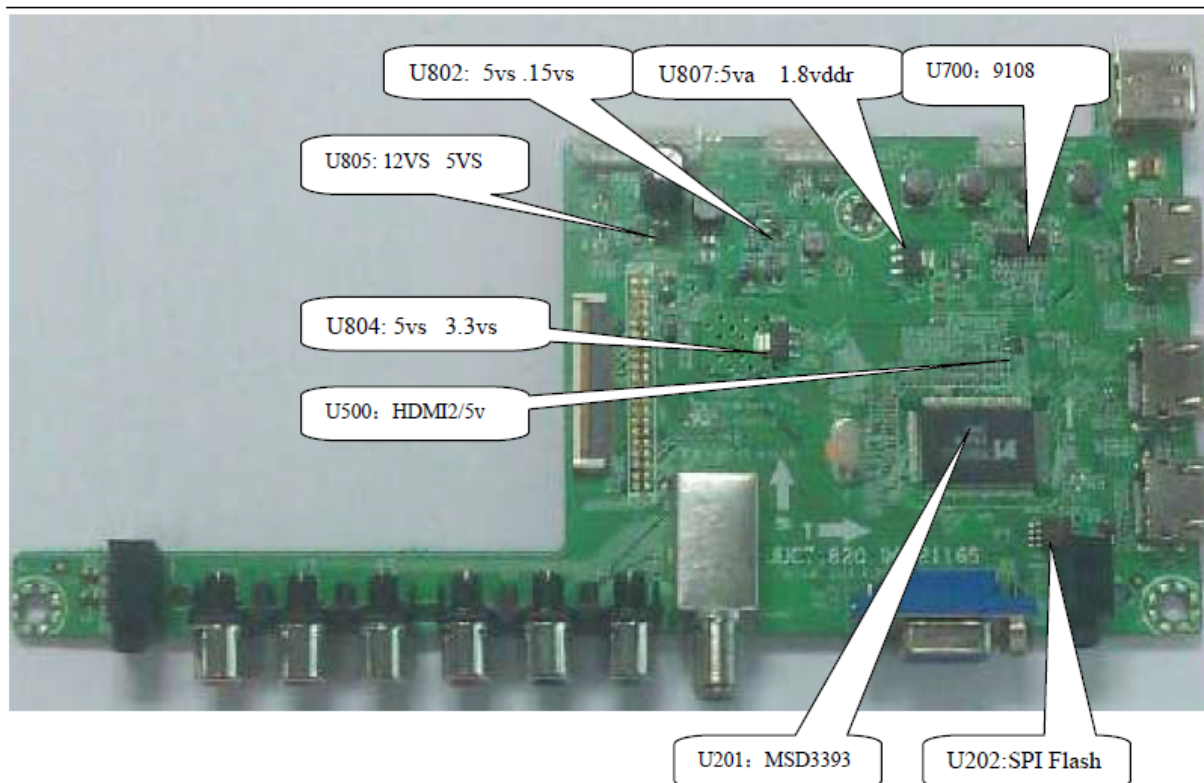
2.Optimum resolution for PC is 1920x1080

MAIN BOARD (cont)

IC Chip Functions

IC Ref.	Chip Reference	Main function
U001	MXL661	Tuner output IF signal
U201	MSD3393LU	Video decoder, image processor, A/D and D/A conversion
U700	RT9108	Stereo (BTL) Analog Input Audio Amplifier with Power Limiter and DC Detect
U805	MP1471GJ	12VS to 5VS
U500	SGM2554AYN5G/ TR\$ET20112-EN	5VS to HDMI3/5V
U802	SY8008B	5VS to 1.15VS VDDC/for main chip
U804	LR1117/A-3.3\$AZ1117H-3.3TR	5VS to 3.3VS/For main chip & flash
U807	AZ1117H-ADJTRE1	5V to 1.8V/for ddr2
U202	GD25Q32B-104HIP	Flash

Main Board Chip Placement



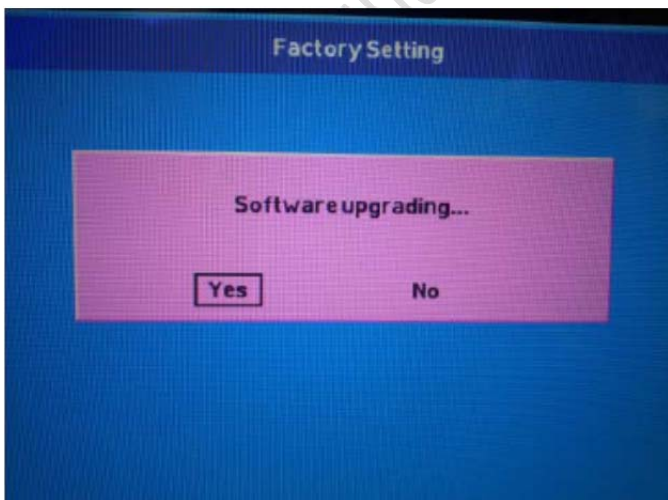
Service Mode (Great Care Should Be Taken in Service Mode)

1. Press Input;
2. Input "3138";
3. You should now be in Service Mode;

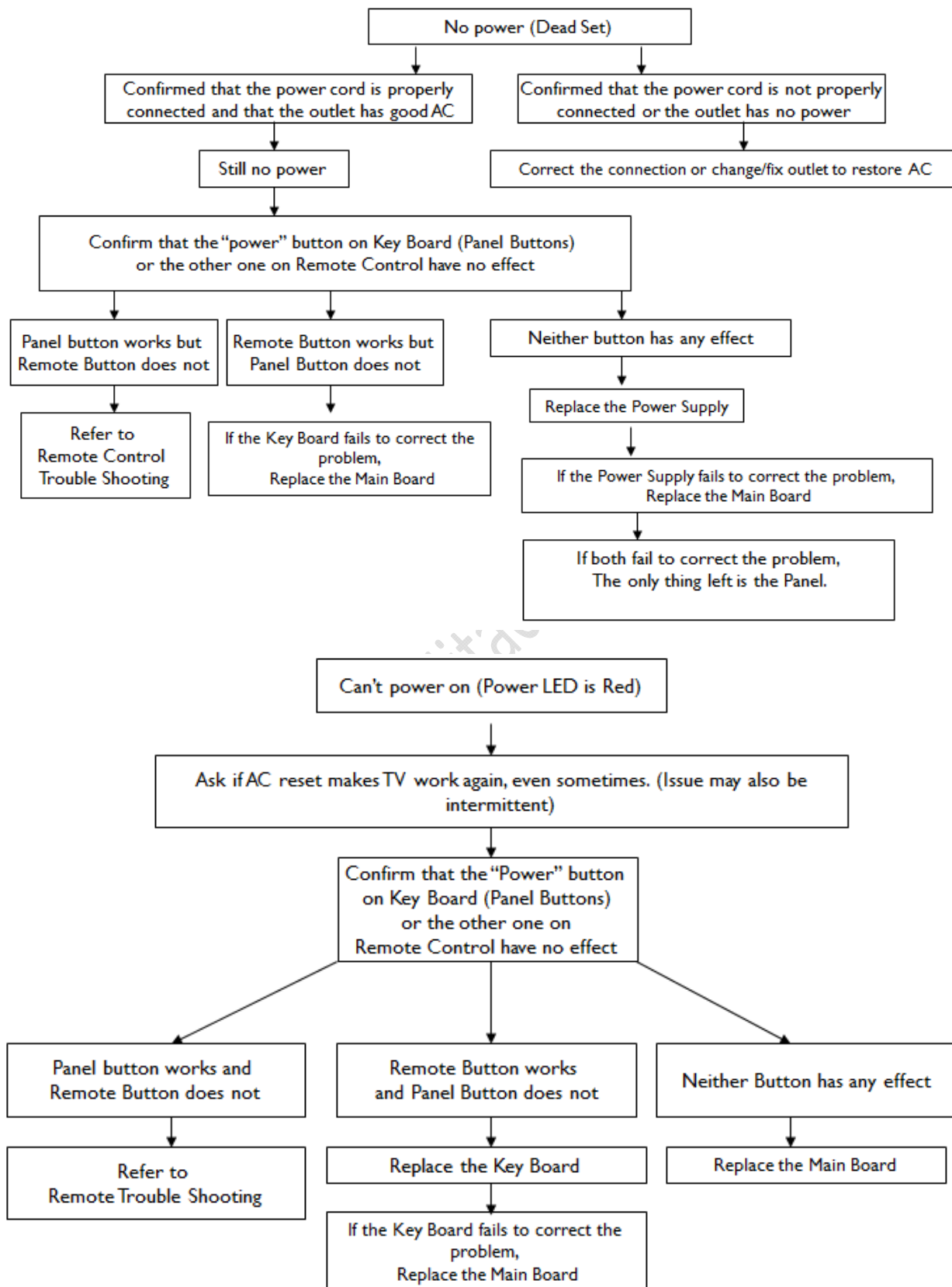
Software Updates

1. Copy the software files to a USB stick in the ROOT directory;
2. Insert the USB stick with the AC power off;
3. Turn on the AC power;
4. Put the set in Service Mode;
5. Select Software Update (USB) and then select Yes;
6. When complete.....
7. Turn off the AC power & remove the USB stick;
8. Turn on the AC power and turn on the TV;

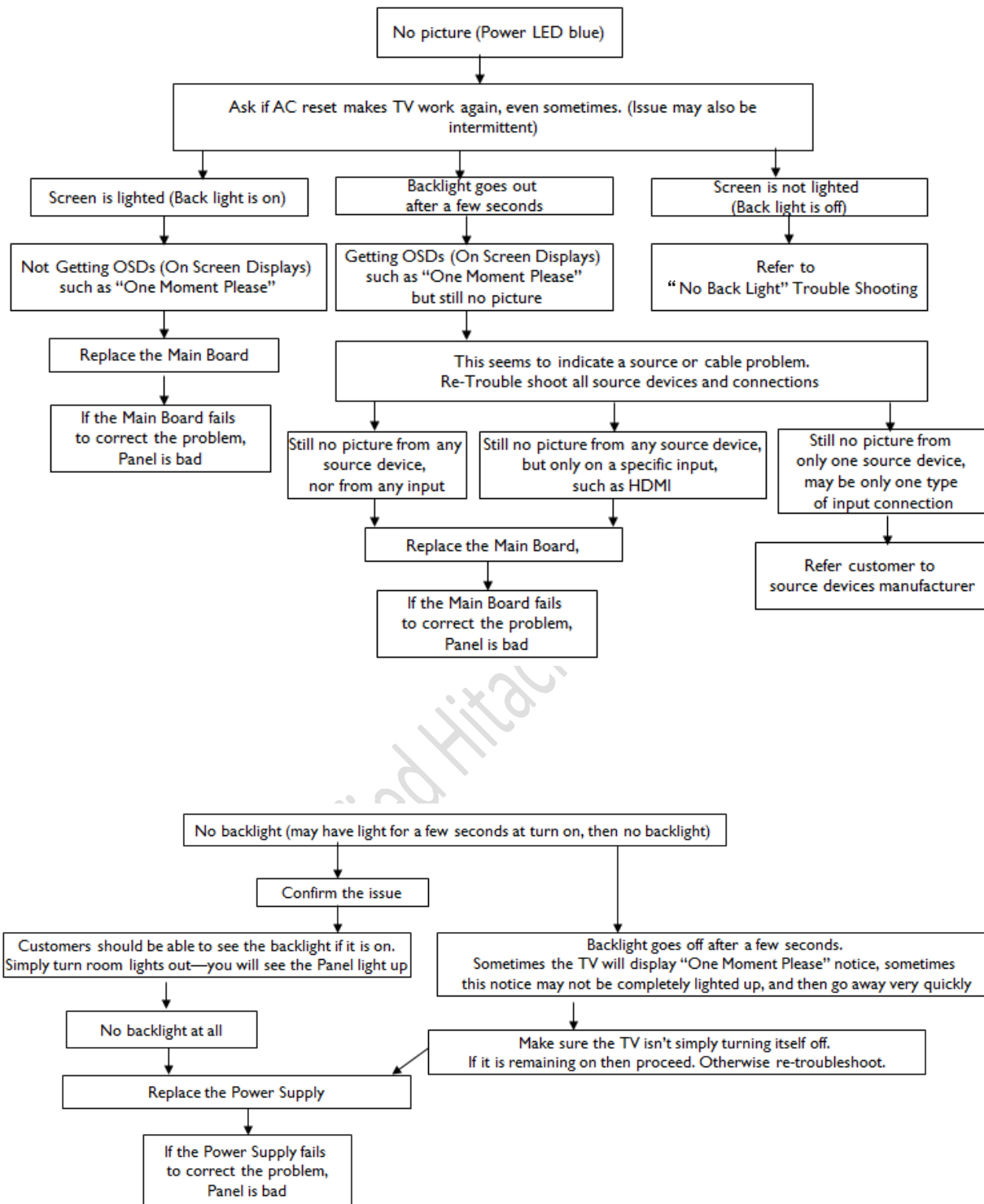
**** Note: Do not turn off the TV while it is updating. ****



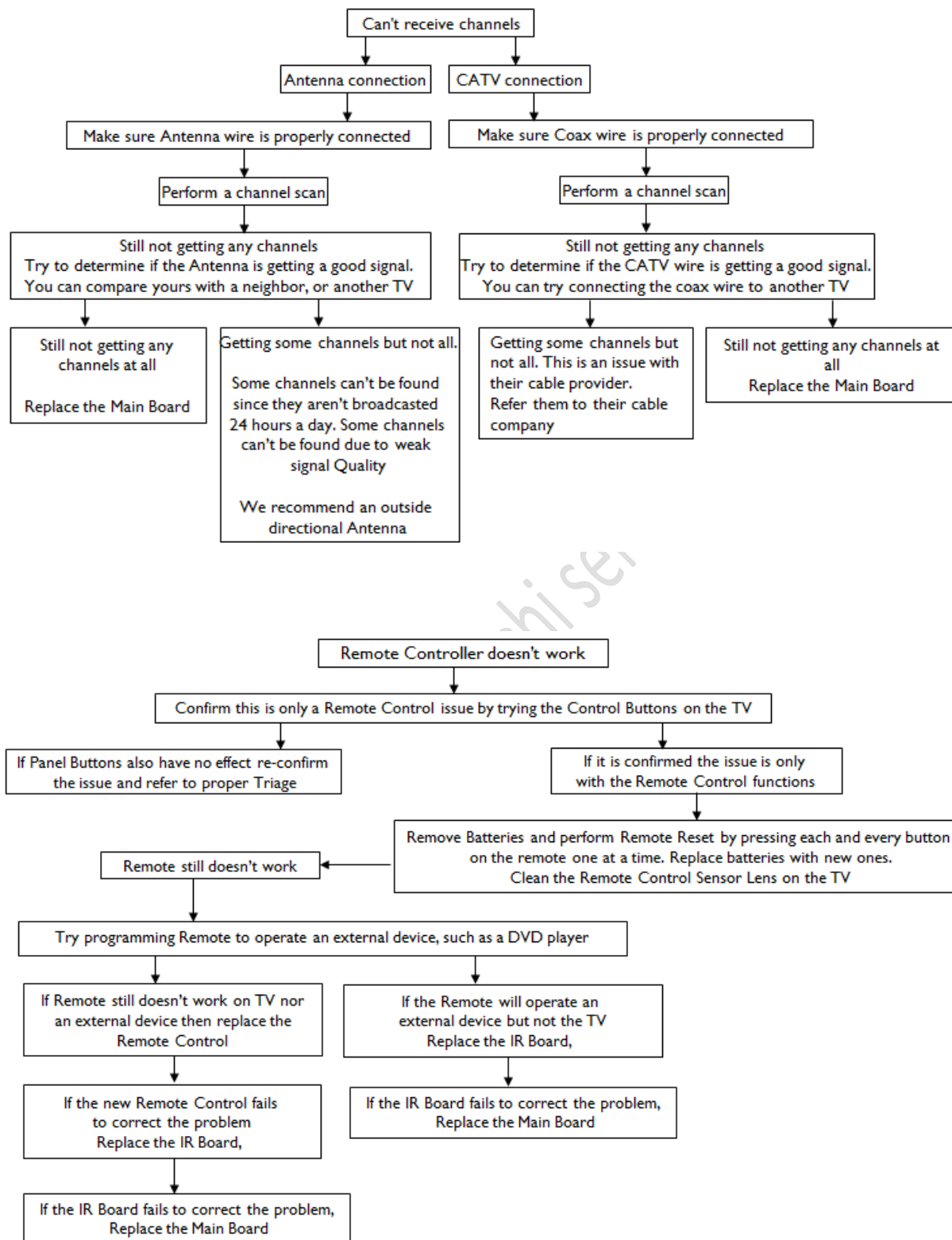
Troubleshooting



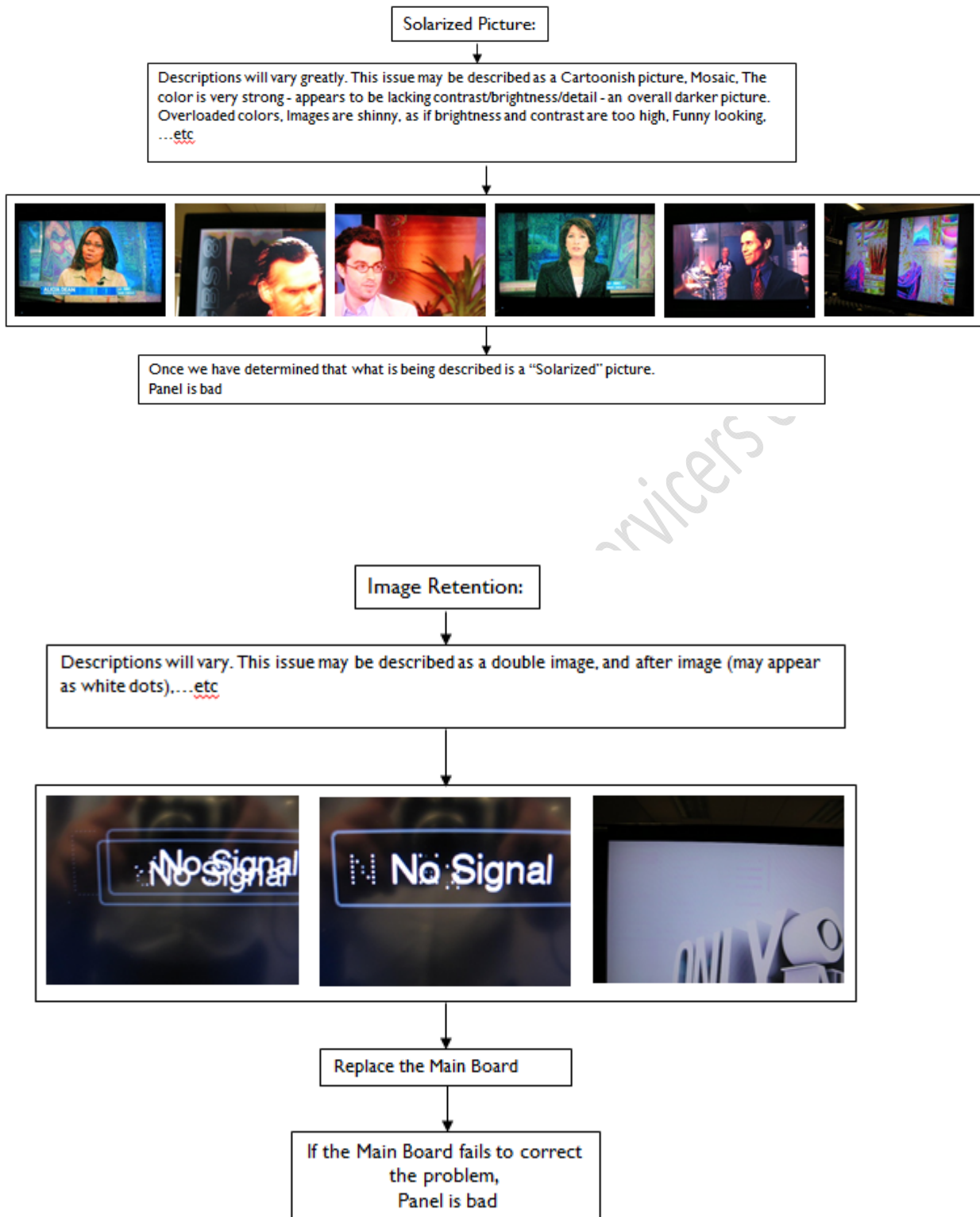
Troubleshooting (cont)



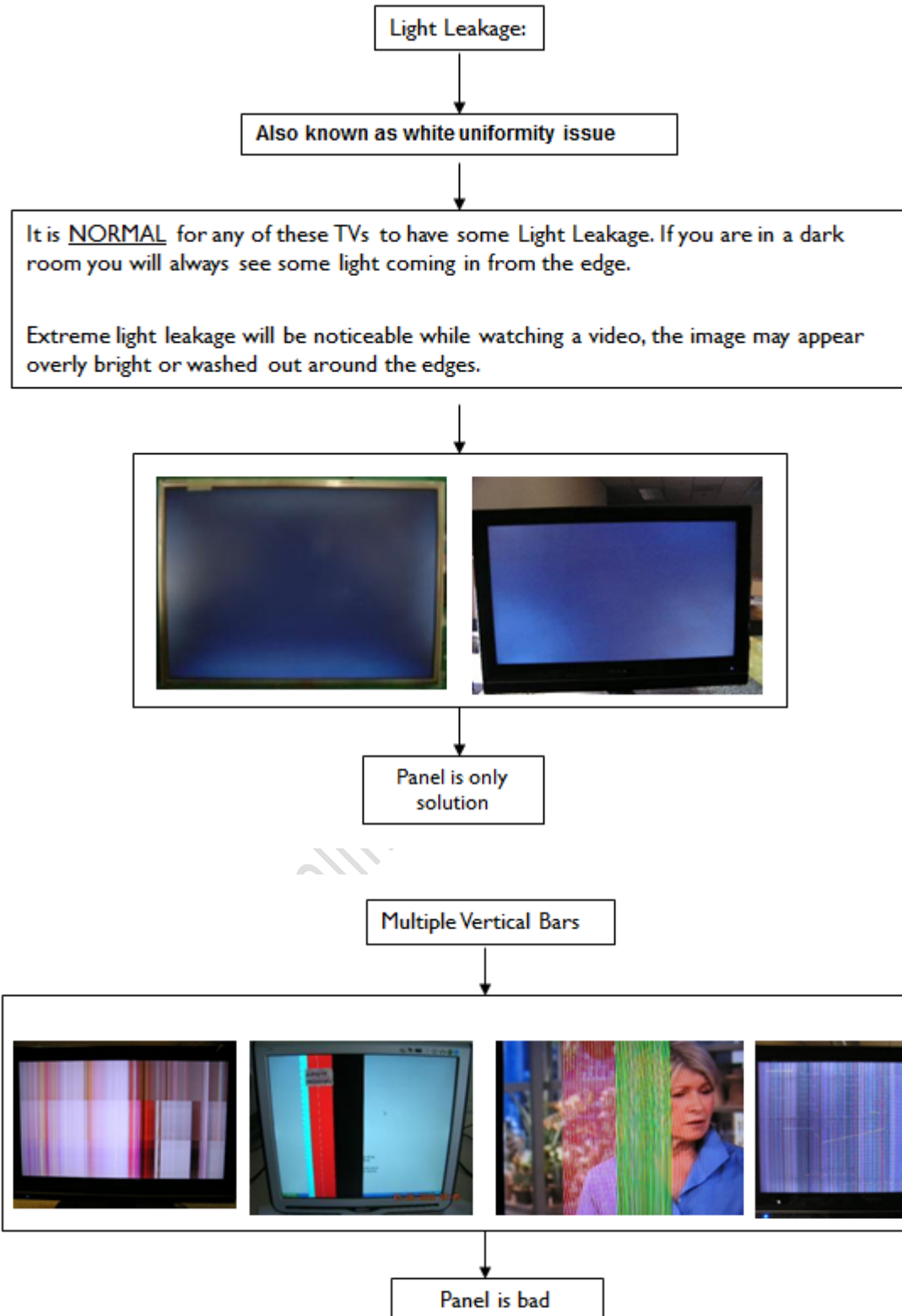
Troubleshooting (cont)



Troubleshooting (cont)



Troubleshooting (cont)



Troubleshooting (cont)

Cracked/Shattered Panel:

NOT to be confused with shipping damage:
Dealers / end users must file shipping damage claims with their carrier

If this not shipping damage, it is NOT covered by warranty:
Most customers will not admit or recognize that their panel has been damaged.

Ask such things as "Are there any Diagonal lines?" "Does it look like a spider web?" "Do you see both Vertical AND Horizontal lines?" "Can you see this when the TV is off?" (sometimes cracked panels are not easily visible when the set is off)

Front Polarizer Scratched

