



S762A

SERVICE MANUAL



The Monitor Specialists

**EDITION 1
DEC. 2003**

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

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1. SCOPE

This specification defines the design and performance requirements for the 17" SXGA TFT LCD display monitor "S762A".

The features of "S762A" is listed in the following table :

Feature	Description
1	Universal input AC/DC power supply inside the monitor
2	Analog RGB interface (VGA) 30~80KHz, 59~75Hz, 135MHz
3	17" SXGA 1280*1024, TFT LCD panel
4	Function keys * 5 : Power On/Off, ESC,△ (up), ▽ (down), ↵ (enter)
5	Direct Access function keys : △ for  contrast function, ▽ for  brightness function . ESC for audio mute function.(S761A/S762A/S760A only)
6	Green/Amber LED indicator for power on/power saving
7	Plug & play support with DDC2B protocol installed.
8	Power saving mode compliant with Energy Star
9	OSD (on screen display) MENU operation
9.1	Brightness adjustment
9.2	Contrast adjustment
9.3	Auto tune function (VGA)
9.4	Color selection
9.5	Image adjustment
9.6	Language selection
9.7	OSD position adjustment
9.8	Reset function
9.9	1W * 2 Audio function inside the monitor (S762A/S761A /S760A Only)
9.10	Volume adjust by OSD (S762A/S761A/S760A Only)

2. INPUT REQUIREMENTS

2.1 Input Power

2.1.1. Power Source	100 ~ 240 Vac, + -10%, 50/60 Hz
2.1.2. Power Consumption	Normal operating mode Audio function is operating at max output: $\leq 39W$ w/o audio function: $\leq 36W$ Power saving mode Audio function is operating at max output: $\leq 7W$ w/o audio function: $\leq 2W$
2.1.3. AC Line Drop Out	Power switch off: $\leq 1W$
2.1.4. AC Wave Distortion	Picture must not disappear while AC 100 V input drop out(10ms, 100%)
2.1.5. In-rush Current	10% max. Permitted
2.1.6. Power Cord	50 A max at 240 Vac cold start Detachable, 3P with ground type.

2.2 Display Input

2.2.1. Analog Input RGB Video	Analogue, 0.0 to 0.7 V peak to peak Separate RGB Input impedance 75 Ohm Positive polarity
2.2.1.1 Sync Signal	Separate horizontal & vertical sync (3.3V & 5V) Low level 0.8 V maximum High level 2.0 V minimum Positive or negative polarity
Analog Input Connection	a. Captive cable length 1.5M in LCD Monitor end, D-sub male connector in another end. b. A female Mini D-sub 15 pin base.

3.2 Modes and Timing Comparability

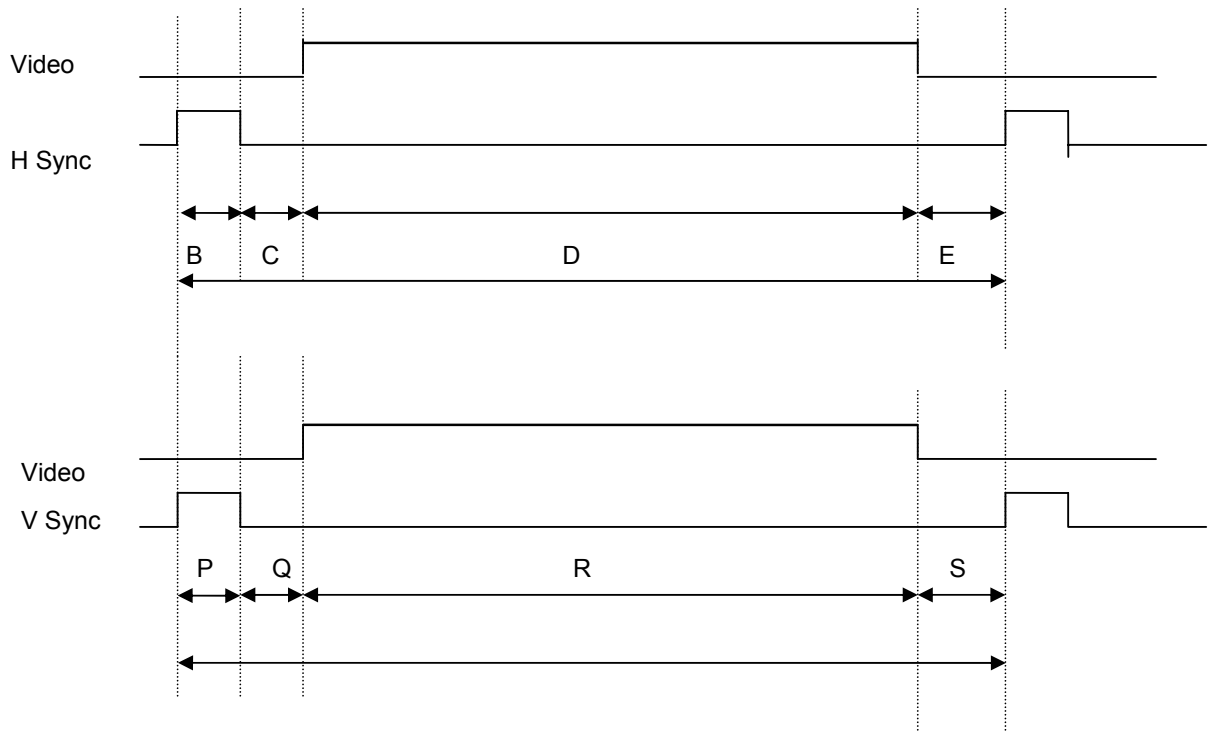
3.2.1 Analog Input Supported Timing VESA Standard mode:

Display Format	IBM VGA		VESA	VESA	VESA	VESA	VESA
Horizontal Dots	720	640	640	640	800	800	800
Vertical lines	400	480	480	480	600	600	600
Horizontal Frequency	31.469		37.861	37.5	37.879	48.077	46.875
Vertical Frequency (Hz)	70	59.94	72.809	75	60.317	72.188	75.000
Pixel Rate (MHz)	28.322	25.175	31.5	31.5	40	50	49.5
H. Sync. Polarity	-	-	-	-	+	+	+
A μ S (Period)	31.778		26.413	26.667	26.4	20.8	21.333
B μ S (Pulse Width)	3.813		1.270	2.032	3.2	2.4	1.616
C μ S (Back Porch)	1.907		4.063	3.810	2.2	1.28	3.232
D μ S (Active Area)	25.422		20.317	20.317	20.0	16.0	16.162
E μ S (Front Porch)	0.636		0.763	0.508	1.00	1.12	0.323
V. Sync. Polarity	+	-	-	-	+	+	+
O ms (Period)		16.683	13.735	13.333	16.579	13.853	13.333
P ms (Pulse Width)		0.064	0.079	0.080	0.106	0.125	0.064
Q ms (Back Porch)		1.048	0.739	0.427	0.607	0.478	0.448
R ms (Active Area)	12.711	15.253	12.678	12.800	15.840	12.480	12.8
S ms (Front Porch)		0.318	0.237	0.027	0.026	0.770	0.021

Display Format	VESA	VESA	VESA	VESA	VESA	VESA
Horizontal Dots	1024	1024	1024	1152	1280	1280
Vertical lines	768	768	768	864	1024	1024
Horizontal Frequency	48.363	56.746	60.023	67.5	63.981	79.976
Vertical Frequency (Hz)	60.004	70.069	75.029	75	60.013	75.025
Pixel Rate (MHz)	65.0	75	78.75	108	108	135
H. Sync. Polarity	-	-	+	+	+	+
A μ S (Period)	20.667	17.707	16.660	14.815	15.631	12.504
B μ S (Pulse Width)	2.092	1.813	1.219	1.185	1.180	1.067
C μ S (Back Porch)	2.462	1.920	2.235	2.370	2.065	1.837
D μ S (Active Area)	15.754	13.653	13.003	10.667	11.797	9.481
E μ S (Front Porch)	0.369	0.321	0.203	0.593	0.590	0.119
V. Sync. Polarity	-	-	+	+	+	+
O ms (Period)	16.666	14.272	13.238	13.333	16.663	13.329
P ms (Pulse Width)	0.124	0.106	0.050	0.044	0.047	0.038
Q ms (Back Porch)	0.6	0.513	0.466	0.474	0.594	0.475
R ms (Active Area)	15.88	13.599	12.795	12.8	16.006	12.804
S ms (Front Porch)	0.062	0.054	0.017	0.015	0.016	0.012

VGA Support Mode

1280 * 1024 @70Hz,72Hz
1280 * 960 @ 60Hz,70H,72Hz,75Hz
1280 * 720 @ 60Hz
1152 * 864 @ 60Hz, 70Hz,72Hz
1024 * 768 @ 72Hz
800 * 600 @ 70Hz
640 * 480 @ 70Hz
640 * 350 @ 70Hz



3.3 Plug & Play

DDC 2B data transmission only for I²C BUS interface card.

3.4 Scanning characteristics

VGA

Horizontal frequency	30KHz to 80KHz
Refresh rate	59Hz to 75Hz

3.5 Audio Module (S762A/S761A/S760A)

3.5.1. Type:	Stereo BTL audio output amplifier with DC volume control with two 1W speakers.
3.5.2. Input Level:	1Vrms
3.5.3. Output Power:	1W * 2 (10% THD, 1KHz)
3.5.4. Total Harmonic Distortion (THD):	0.3% (Typ.) (0.5W * 2, 1KHz)
3.5.5. Frequency Response ±3dB:	550Hz ~ 20KHz
3.5.6. Channel unbalance (output power):	1dB (max.)

3.6 User Controls and Indicator

3.6.1 Power ON/OFF Switch	The switch control scaler power down and turn off panel.
3.6.2 LED Indicator	The LED color shall indicate power status as shown in paragraph 3.7
3.6.3 OSD	
3.6.3.1 Buttons	ESC , ▽ , △ , ←
3.6.3.2 OSD Menu Level	See Table 2. S762A/S761A/S760A/S762/S761/S760 OSD Control Map
3.6.4 Hot Keys Function	
3.6.4.1 Contrast (☾)	Press “△ ” to pop up ;then press “△ ” or “▽ ” to adjust Contrast up or down.
3.6.4.2 Brightness (☀)	Press “▽ ” to pop up ;then press “△ ” or “▽ ” to adjust Brightness up or down.
*3.6.4.3 Mute On (🔇)	Press “Esc” directly to disable speakers, while speakers in normal state.
*3.6.4.4 Mute Off (🔊)	Press “Esc” directly to enable speakers, while speakers in audio mute state. “Esc” key is for Mute On and Off function
*3.6.4.5 In monitor power saving mode	“△ ” key is for increasing volume function. “▽ ” key is for decreasing volume function. “ESC” key is enable or disable audio mute.

Note:* means S762A only

Table 2 S762A OSD Control Map

1.VGA-D15 input:

	Level 1	Level 2	Level 3	Level 4
Direct Adj	Brightness			
Direct Adj	Contrast			
*Direct Adj	*Audio Mute			
Main Menu	*Volume	*Adjustment scale		
	Auto Tune			
	Color	Auto Color		
		9300° K		
		6500° K		
	Image	User	R/G/B select	Adjustment scale
		Clock	Adjustment scale	
		Phase	Adjustment scale	
		H-Position	Adjustment scale	
		V-Position	Adjustment scale	
		Smooth	On/Off	
	Language	English(select)		
		German(select)		
		French(select)		
		Spanish(select)		
		Italian(select)		
	OSD Position	中文(option)		
		H-Position	Adjustment scale	
		V-Position	Adjustment scale	
	Reset	Center		
	Yes/No			

Note:* means S762A/S761A/S760A only

3.6.5 Accessory OSD Indications

Signal out of range	An input signal which is outside the range defined in Section 3.4 shall cause the monitor to display a message Signal Out of Range .
No Signal Input and power down.	When the signal cable is not plugged into PC or when the horizontal or vertical sync are absent and when the monitor is turned on. After 5 sec isn't to detect H or V Sync then show " No Signal Input " for 5 seconds and then show " Power down " message on screen 2 sec. And then the monitor shall go to power saving status. If first turn on the monitor, shows " No Signal Input " 30 sec.

3.7 Power Management

This monitor will meet the low power specification, including USA governmental requirements for Energy Star, the NUTEK standard and the VESA DPMS standard which detected the Hori. /Vert. Sync signal from host CPU.
A dual color (green/amber) LED is located on the front bezel to indicate the power management states.

Status		Power consumption	Power management	Picture Recovery time	LED Color
Sync.	Video				
Active	Active	With Audio: 39W Without Audio:36W	On	-	Green
No Sync.	Blanked	$\leq 2W$ (Note.1)	Power saving	≤ 3 sec	Amber

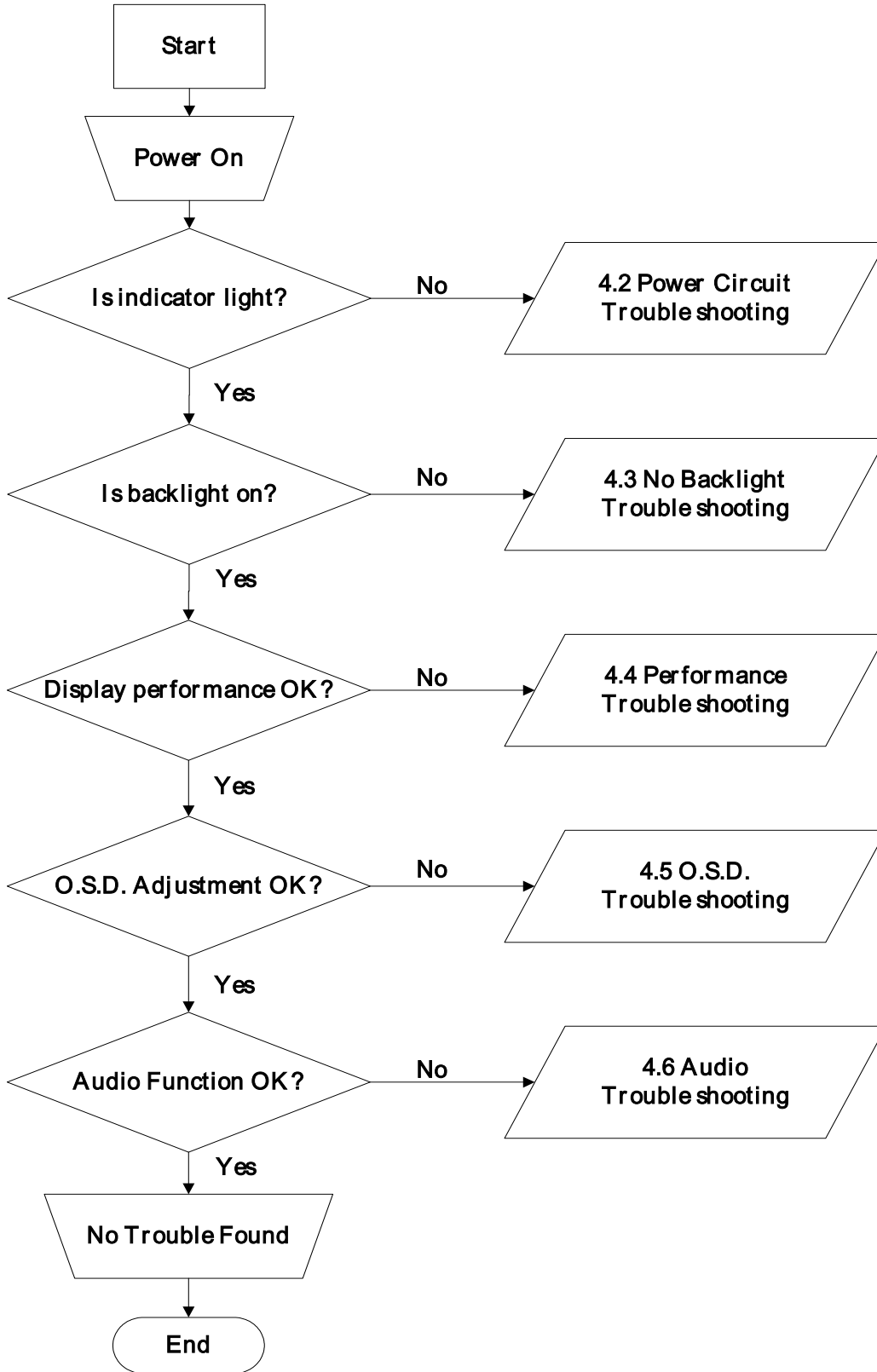
Note. 1: Audio function is operating at no signal input.

Once "Esc" or "△" or "▽" key initiates under power saving condition, the audio function can be waked up and the power consumption can not be the above definition.

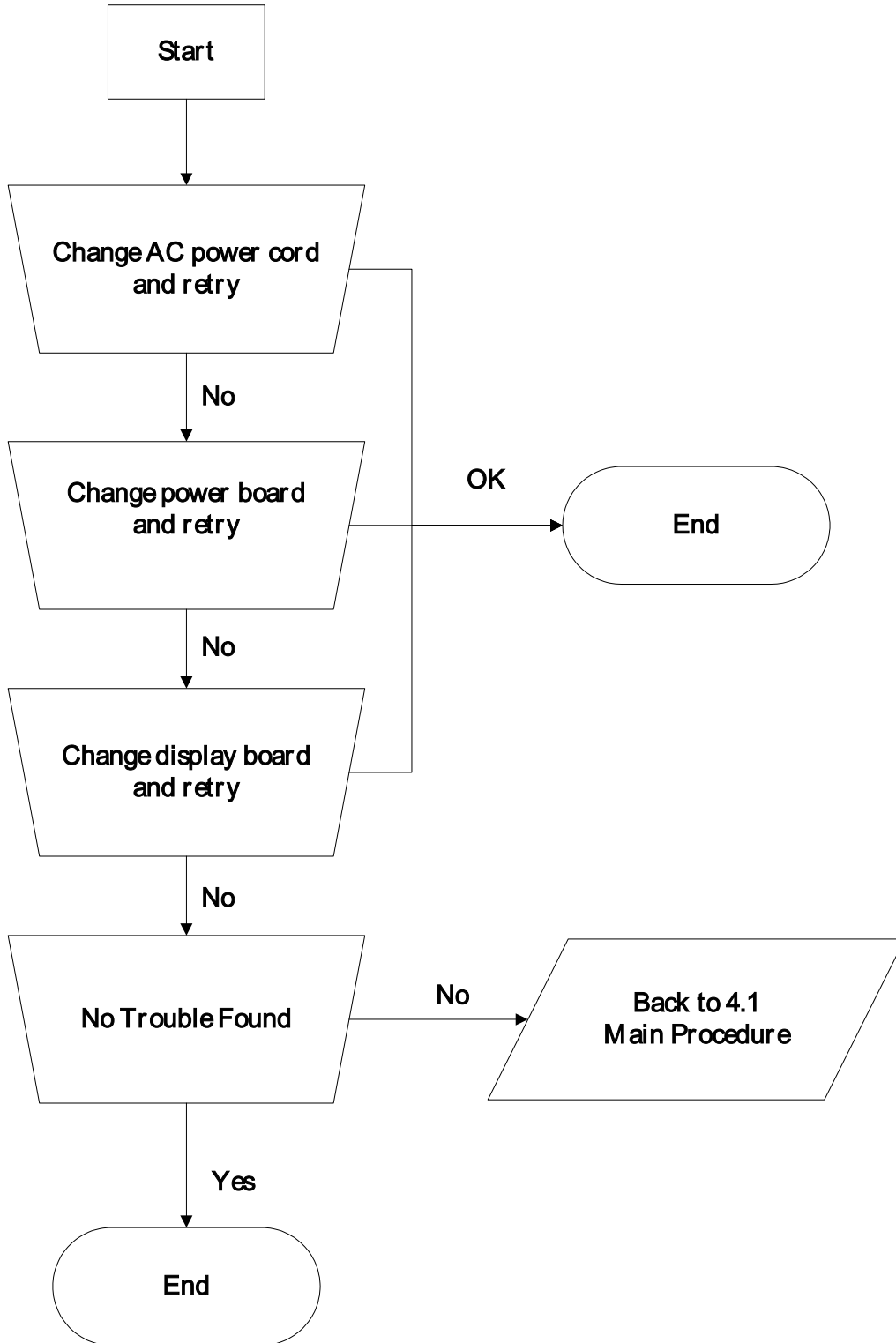
S762A only

4. TROUBLE SHOOTING

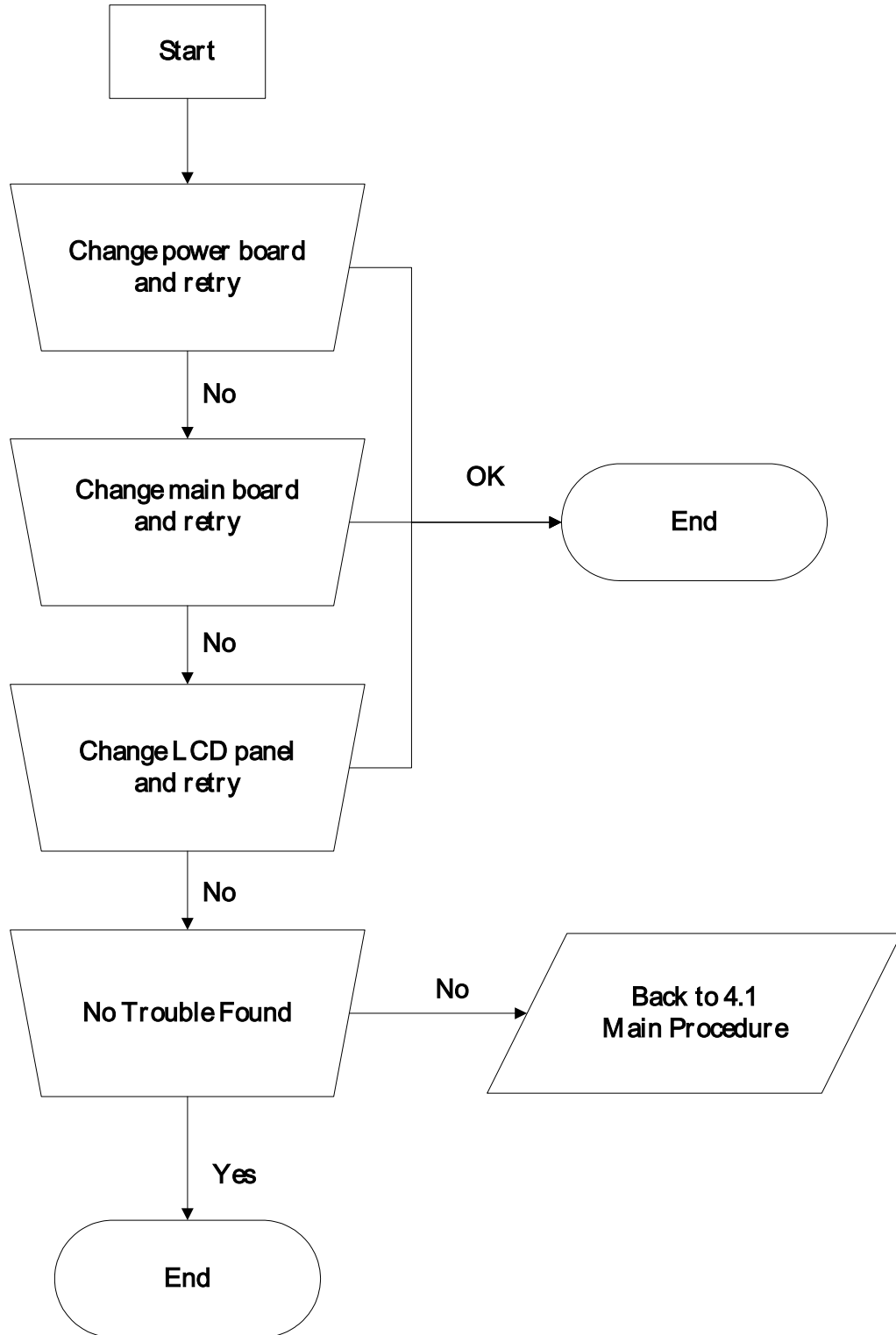
4.1 Main Procedure



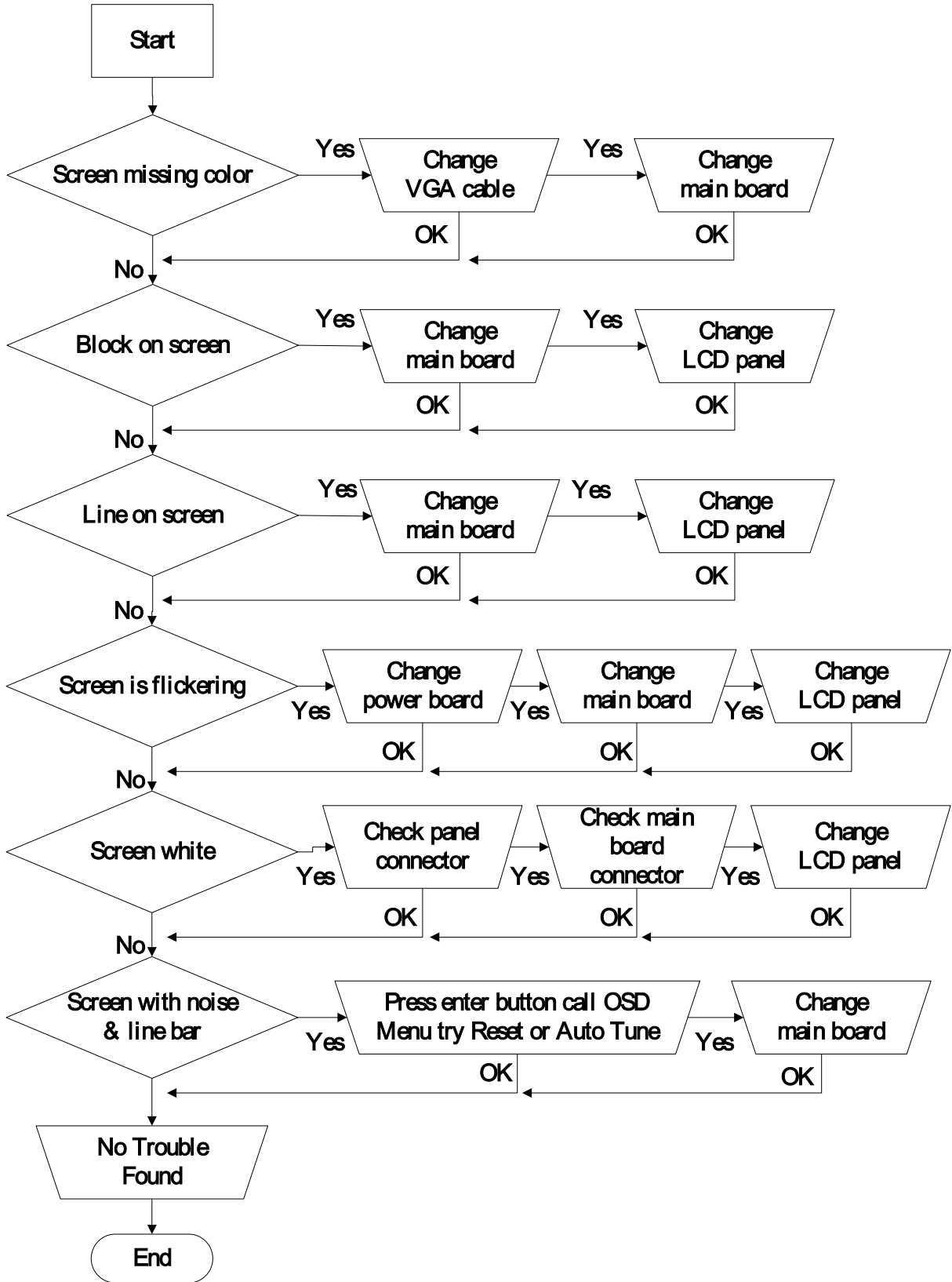
4.2 Power Circuit Trouble Shooting



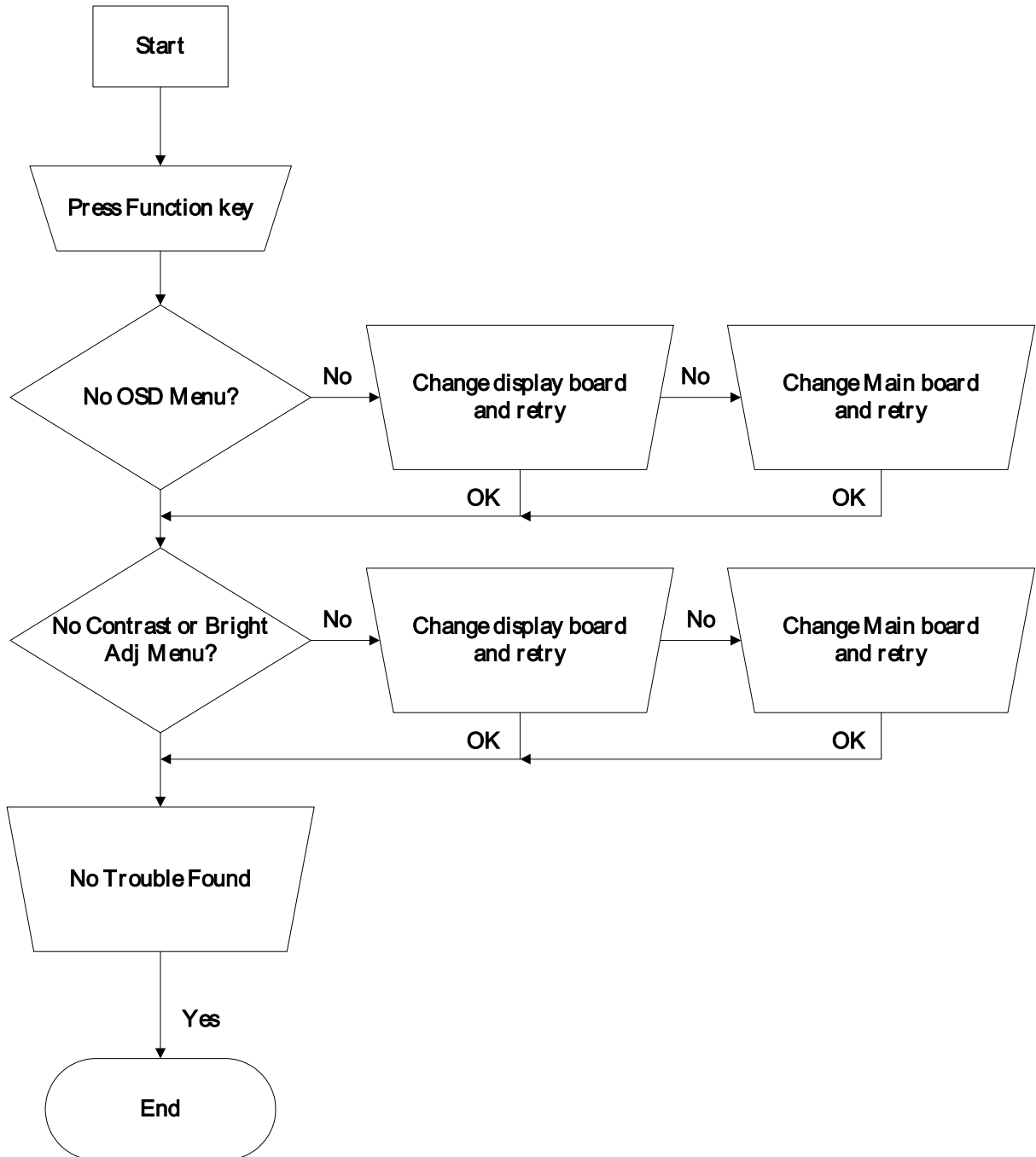
4.3 Backlight Trouble Shooting



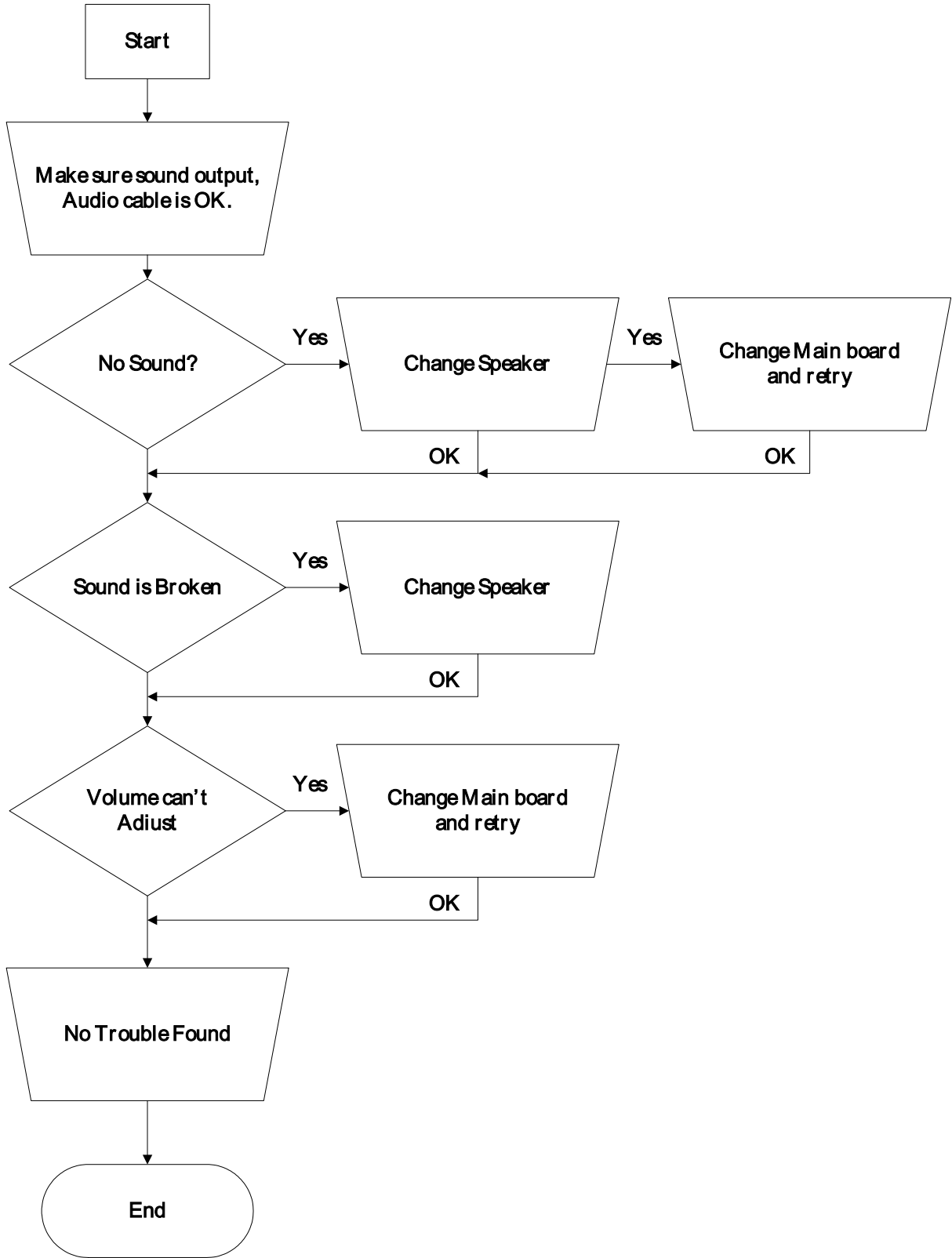
4.4 Performance Trouble Shooting



4.5 O.S.D. Trouble Shooting



4.6 Audio Trouble Shooting



PARTS LIST

ITEM	PART NUMBER	DESCRIPTION
1	AC1921-B01	MAIN PCBA
2	DC1725-B01	POWER PCBA
3	GC1921-B01	DISPLAY PCBA
4	10A17-4A2A	LCD TFT 1280*1024 AU
5	SSBASE-509	SUB ASSY BASE
6	04008003000H	CARTON
7	0510169800	HOLDER (R)
8	0510168800	HOLDER (L)
9	05Z0001900E	PLASTIC HANDLE BAR
10	05Z0002900E	PLASTIC CLAP BOARD
11	06208101000H	USER MANUAL
12	65B70-1801ZH	CABLE AUDIO
13	98T111-P61	DISKETTE 3.5IN 1.44M
14	65S10-150CZH	CABLE SIGNAL

