

Service Manual

ViewSonic VE510s/b-1

Model No. VS10040

15" Color TFT LCD Display

(VE510s/b-1_SM_773 Rev. 1b Feb. 2005)

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Revision History

Revision	SM Editing Date	Documents Number		Description of Changes	Editor
		DCN Number	ECR Number		
1a	23/03/04	4221		Initial Release	A. Lu
1b	02/04/05	4890	4805	Change Scale From MRT MVRL-HN To Realtek TTL2013 Change Panel From LG LM150X08 16/32 ms To GBM/DDI GB150XQQ3-A000 16/30ms	A. Lu

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1. Precautions and Safety Notices

1. Appropriate Operation

- (1) Turn off the product before cleaning.
- (2) Use only a dry soft cloth when cleaning the LCD panel surface.
- (3) Use a soft cloth soaked with mild detergent to clean the display housing.
- (4) Use only a high quality, safety approved AC/DC power cord.
- (5) Disconnect the power plug from the AC outlet if the product will not be used for a long period of time.
- (6) If smoke, abnormal noise, or strange odor is present, immediately switch the LCD display off.
- (7) Do not touch the LCD panel surface with sharp or hard objects.
- (8) Do not place heavy objects on the LCD display, video cable, or power cord.
- (9) Do not use abrasive cleaners, waxes or solvents for your cleaning.
- (10) Do not operate the product under the following conditions:
 - Extremely hot, cold or humid environment.
 - Areas containing excessive dust and dirt.
 - Near any appliance generating a strong magnetic field.
 - In direct sunlight.

2. Caution

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guidelines.

3. Safety Check

Care should be taken while servicing this LCD display. Because of the high voltage used in the inverter circuit, the voltage is exposed in such areas as the associated transformer circuits.

4. LCD Module Handling Precautions

4.1 Handling Precautions

- (1) Since front polarizer is easily damaged, pay attention not to scratch it.
- (2) Be sure to turn off power supply when connecting or disconnecting input connector.
- (3) Wipe off water drops immediately. Long contact with water may cause discoloration or spots.
- (4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
- (5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.
- (6) Since CMOS LSI is used in this module, take care of static electricity and ensure human earth when handling.
- (7) Do not open or modify the Module Assembly.
- (8) Do not press the reflector sheet at the back of the module in any direction.
- (9) In the event that a Module must be put back into the packing container slot after it was taken out of the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly. Otherwise the TFT Module may be damaged.
- (10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate or tilt the Interface Connector of the TFT Module.

- (11) After installation of the TFT Module into an enclosure (LCD monitor housing, for example), do not twist or bend the TFT Module even momentarily. When designing the enclosure, it should be taken into consideration that no bending/twisting forces may be applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.
- (12) The cold cathode fluorescent lamp in the LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.
- (13) The LCD module contains a small amount of materials having no flammability grade. The LCD module should be supplied with power that complies with the requirements of Limited Power Source (IEC60950 or UL1950), or an exemption should be applied for.
- (14) The LCD module is designed so that the CCFL in it is supplied by a Limited Current Circuit (IEC60950 or UL1950). Do not connect the CCFL to a Hazardous Voltage Circuit.

2. Specification

SCGENERAL REQUIREMENTS

General Specifications

Test Resolution & Frequency	"1024 X 768" @ 60Hz
Test Image Size	Full Size
Contrast and Brightness Controls	Factory Default: Contrast = 70%, Brightness = 100%

SIGNAL INTERFACE

Video Interface

Analog Input	DB-15 (Analog)
Video Cable Strain Relief	Equal to twice the weight of the monitor for five minutes.
Video Cable Connector DB-15 Pinout	Compliant DDC 1/2B.
Video Signals	Video RGB (Analog) Separate
Video Impedance	75 Ohms (Analog)
Maximum PC Video Signal	950 mV with no damage to monitor
Maximum Mac Video Signal	1250 mV with no damage to monitor
Sync Signals	TTL
DDC 1/2B	Compliant with Revision 1.3
Sync Compatibility	Separate Sync
Video Compatibility	Shall be compatible with all PC type computers, Macintosh computers, and after market video cards.
Resolution Compatibility	640 x 350, 640 x 480, 720 x 400 (640 x 400), 800 x 600, 832 x 624, 1024 x 768,
Exclusions	Not compatible with interlaced video.

Table 3.1: 15 pin D-sub connector pin assignment

Pin Number	Pin Function
1	Red video input
2	Green video input
3	Blue video input
4	No Connection
5	Ground
6	Red video ground
7	Green video ground
8	Blue video ground
9	+5V
10	Ground
11	No connection
12	(SDA)
13	Horizontal sync (Composite sync)
14	Vertical sync
15	(SCL)

POWER

Power Supply

Internal Power Supply	Yes.
Input Voltage Range	90 TO 264 VAC
Input Frequency Range	47 TO 63 HERTZ
Short Circuit Protection	Output can be shorted without damage.
Over Current Protection	0.8 A typical at 265 VDC, 265 or 187VAC
Leakage Current	3.5mA (Max) at 254VAC / 60Hz
EFFICIENCY	65 % typical at 115VAC Full Load
Fuse	Internal and not user replaceable
Power Dissipation	34 Watts (typ)
Max Input AC Current	1.2 Arms @ 90VAC, 0.6 Arms @180VAC
INRUSH CURRENT (COLD START)	60 A @ 120VAC, 80 A(max) @220VAC
Power Supply Cold Start	Shall start and function properly when under full load, with all combinations of input voltage, input frequency, and operating temperature.
Power Supply Transient Immunity	Shall be able to withstand an ANSI/IEEE C62.41-1980 6000V 200 ampere ring wave transient test with no damage.
Power Supply Line Surge Immunity	Shall be able to withstand 1.5 times nominal line voltage for one cycle with no damage.
Power Supply Missing Cycle Immunity	Shall be able to function properly, without reset or visible screen artifacts, when ½ cycle of AC power is randomly missing at nominal input.
Power Supply Acoustics	The power supply shall not produce audible noise that would be detectable by the user. Audible shall defined to be in compliance with ISO 7779 (DIN EN27779:1991) Noise measurements of machines acoustics. Power Switch noise shall not be considered.
Power Interface	
US Type Power Cable	Separate 3-prong NEMA 5-15P type plug. Length = 1.8m. Color = BLACK
European Type Power Cable	Schuko CEE7-7. Length = 1.8m, Color = BLACK
Power Saving Operation	
Method	VESA DPMS Signaling
Power Consumption	ON Mode <50 W (max) / 30 W (typ) ACTIVE OFF < 1W
Recovery Time	ON Mode = N/A ACTIVE OFF < 3 SEC

FRONT PANEL CONTROLS AND INDICATORS

Front Panel Hardware Controls

Power Switch (Front Head)	Power Control, soft Power Switch.
Power LED (Front Head)	Green – ON Orange – Active Off Dark = Soft Power Switch OFF
Front Panel Controls (Head)	Button 1 Down arrow button Up arrow button Button 2 Power Note: Power Button, Button 1, Button 2, must be one-shot logic operation. (i.e. there should be no cycling)
Reaction Time	OSD must fully appear within 0.5s after pushing Button 1.
Short Cuts Function from the button(s)	
[1]	Main Menu
[2]	Auto Image Adjust.
[DOWN] or [UP] arrow	to immediately activate Contrast menu. It should be change to Brightness OSD by push button [2].
[DOWN] + [UP] arrows	recall Contrast or Brightness while in the Contrast or Brightness adjustment, or recall both of Contrast and Brightness when the OSD is not open.
[1] + [2]	toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode.
[1] + [Down] + [Up]	White Balance. (Not show on user's guide)
[1] + [Down]	Power Lock (see section “OSD Lock short cuts function for the buttons” in 5.4)

ELECTRICAL REQUIREMENTS

Horizontal / Vertical Frequency

Horizontal Frequency	30 – 62 KHZ
Vertical Refresh Rate	50 – 85 HZ.
Maximum Pixel Clock	80 MHz
Sync Polarity	Independent of sync polarity.
Primary Presets	
Primary Preset	“1024 X 768” @ 60Hz
Look up table timing	
<<Analog>> 1. 640 x 350 @ 70Hz, 31.5kHz 2. 640 x 480 @ 60Hz, 31.5kHz 3. 640 x 480 @ 67Hz, 35.0kHz 4. 640 x 480 @ 75Hz, 37.5kHz 5. 640 x 480 @ 72Hz, 37.9kHz 6. 640 x 480 @ 85Hz, 43.27kHz 7. 720 x 400 @ 70Hz, 31.5kHz 8. 800 x 600 @ 56Hz, 35.1kHz 9. 800 x 600 @ 60Hz, 37.9kHz 10. 800 x 600 @ 75Hz, 46.9kHz 11. 800 x 600 @ 72Hz, 48.1kHz 12. 800 x 600 @ 85Hz, 53.7kHz 13. 832 x 624 @ 75Hz, 49.7kHz 14. 1024 x 768 @ 60Hz, 48.4kHz 15. 1024 x 768 @ 70Hz, 56.5kHz 16. 1024 x 768 @ 72Hz, 58.1kHz 17. 1024 x 768 @ 75Hz, 60.0kHz	
User Presets	
Number of User Presets (recognized timings Available)	10 presets total in FIFO configuration.

Changing Modes	
Maximum Mode Change Blank Time, for image stability. Note: 1) Excluding “Auto Adjust” time 2) Under DOS mode (640 x 350, 720 x 400 & 640 x 400), there is no “Auto Adjust” feature. 3) The monitor needs to do “Auto Adjust” the first time a new mode is detected.	3 seconds (Max) 1 seconds (Typ) for recognized timings 1-2 seconds (Typ) for unrecognized timing
Mode Change Image	The image shall blank while the monitor changes modes.
GTF	
GTF	N/A

LCD Panel

Panel Characteristics:

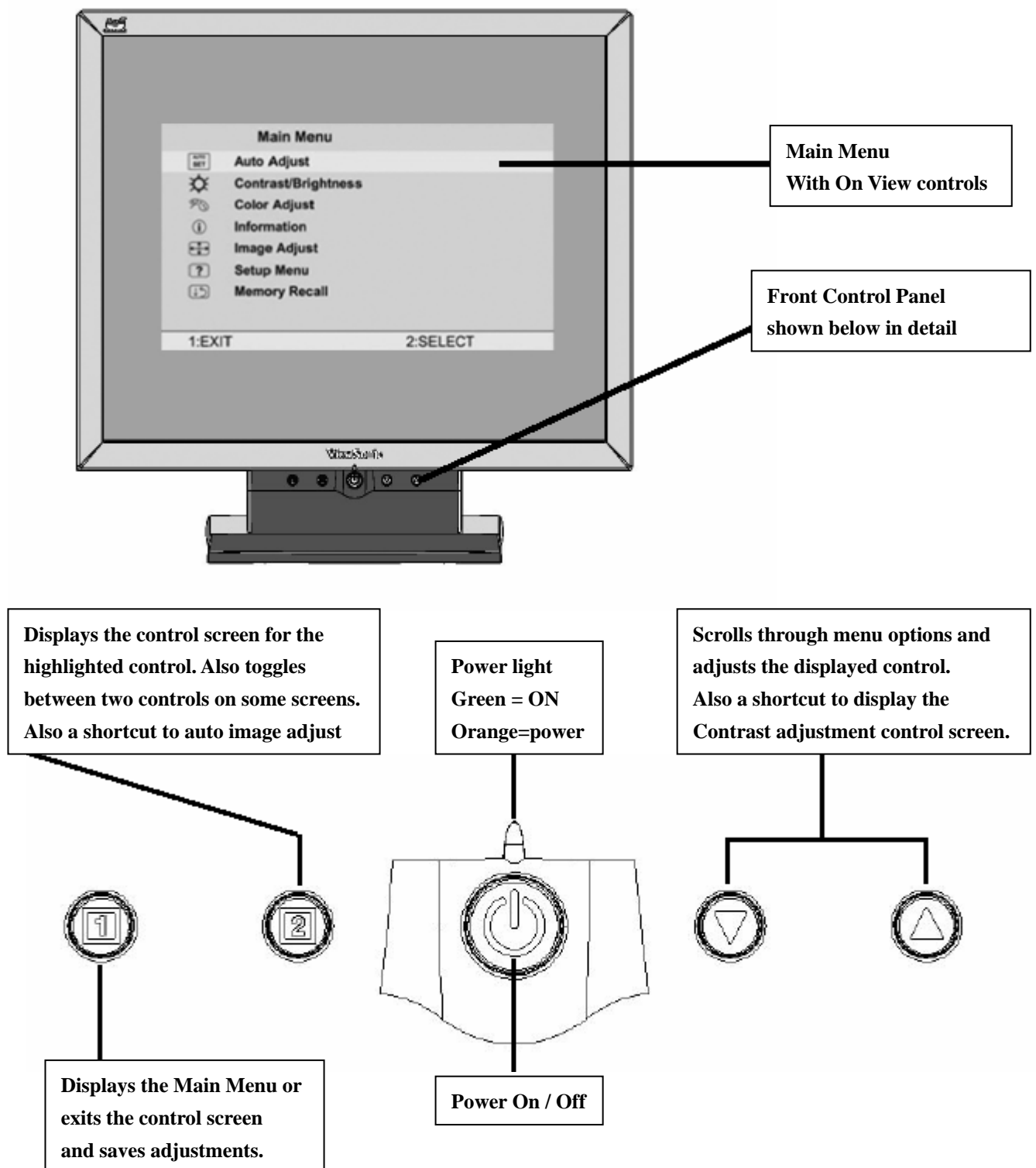
Panel Type	“GBM GB150XQQ3-A001
Type	TN TYPE
Active Size	304.1 (H) x 228.1 (V)
Pixel Arrangement	RGB Vertical Stripe
Pixel Pitch	0.297 mm
GLASS TREATMENT	Anti Glare (Hard coating 3H)
# OF BACKLIGHTS	2 CCFL edge-light (1 top / 1 bottom)
BACKLIGHT LIFE	30,000 Hours (Min)
Panel Performance	
Luminance – Condition: CT = 6500K, Contrast = Max, Brightness = Max	250 cd/m2 (typ after 30 minute warmup) 200 cd/m2 (min after 30 minute warmup)
Brightness Uniformity	70% Entire Area (MAX)
Contrast Ratio	400:1 (typ), 300:1 (min)
Color Depth	16 million colors (6 bit FRC panel)
Viewing Angle (Horizontal)	120 deg @ CR>10, 140 deg @ CR>5
VIEWING ANGLE (VERTICAL)	90 deg @ CR>10, 100 deg @ CR>5
Response Time 10%-90% @ Ta=25°C	16 ms (Tr= 4ms, Tf = 12 ms) (min) 30 ms (Tr= 10 ms, Tf = 20 ms) (typ)
Panel Defects	Please see Panel Quality Specifications.

IMAGE PERFORMANCE

Factory Defaults

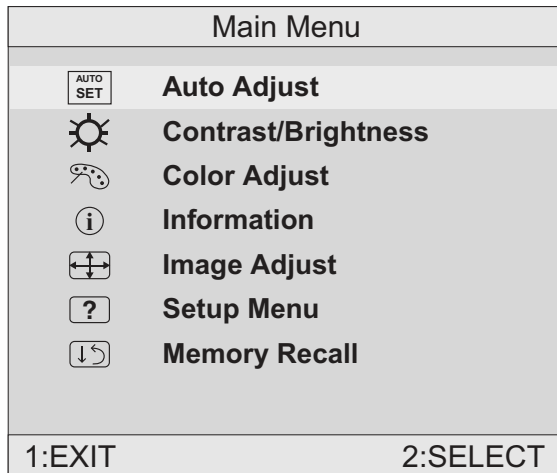
Contrast	70%
Brightness	100%
Color Temperature	6500K
Sharpness	75%
OSD H. Position	50%
OSD V. Position	50%
OSD Time Out	15 Sec
OSD Background	On
Resolution Notice	Enabled
720x400/640x400	720x400
Display Size	
Horizontal Display Size, Primary Preset	Full Screen
Vertical Display Size, Primary Preset	Full Screen
Saturation	
Contrast = Default Brightness = Default TEST PATTERN = 32-GRAY	No visible saturation
Contrast = 100% Brightness = 100% Test pattern = 16-gray	4-level saturation
Preset Color Temperatures	
Preset 1 9300K	CCT(typ)=9300K (W _x =0.283+/-0.02, W _y =0.298+/- 0.02) CCT(Max)=13100K, CCT(Min)=7300K
Preset 2 6500K (Primary)	CCT(typ)=6500K (W _x =0.313+/-0.02, W _y =0.329+/-0.02) CCT(Max)=8000K, CCT(Min)=5500K
Preset 3	CCT(typ)=5400K (W _x =0.332+/-0.02, W _y =0.349+/-0.02) CCT(Max)=6400K, CCT(Min)=4600K
Preset Color Temperature Adjustability	Each color preset shall be adjustable. Red, Green, and Blue shall be individually controlled.
Video Cards Compatibility	
Peaking Performance	Peaking is not adjustable.
Raster Artifacts	
Video Artifacts	No visible streaking, sag, or smearing artifacts when driven by the specified video cards in the primary mode and after user adjustment to best condition.
Power Supply, and Grounding Artifacts	No visible artifacts in any specified video mode within the horizontal or vertical frequency range of the monitor
Temperature Drift	Image shall not drift or lose fine-tune adjustment.

3. Front Panel Function Control Description



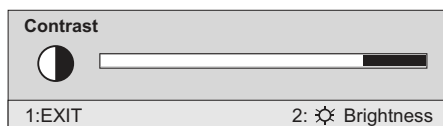
Do the following to adjust the screen image:

- 1 To display the Main Menu, press button [1].



NOTE: All OnView menus and adjustment screens disappear automatically after about 15 seconds. This time period is adjustable through the Setup menu and the OSD timeout control described on page 11.

- 2 To highlight a control you want to adjust, press ▲ or ▼ to scroll up or down the Main Menu.
- 3 To select the highlighted control, press button [2]. A control screen appears like the example shown below.



The line at the bottom of the screen tells you what you can do next: Exit or Select the control that is highlighted.





- 4 To adjust the control, press the up ▲ or down ▼ buttons.
- 5 To save the adjustments and exit the menu, press button [1] *twice*.

The following tips may help you optimize your display:

- Adjust your computer's graphic card so that it outputs a video signal 1024 x 768 @ 60 Hz to the LCD display. (Look for instructions on “changing the refresh rate” in your graphic card's user guide.)
- If necessary, make small adjustments using H. POSITION and V. POSITION until the screen image is completely visible. (The black border around the edge of the screen should barely touch the illuminated “active area” of the LCD display.)

Main Menu Controls

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

Control	Explanation														
	<p>Auto Adjust automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion.</p> <p>Press the [2] button to obtain a sharper image.</p> <p>NOTE: Auto Adjust works with most common video cards. If this function does not work on your LCD display, then lower the video refresh rate to 60 Hz and set the resolution to its pre-set value.</p>														
	<p>Contrast adjusts the difference between the image background (black level) and the foreground (white level).</p>														
	<p>Brightness adjusts background black level of the screen image.</p>														
	<p>Color Adjust provides several color options: preset color temperatures and User which allows you to adjust red (R), green (G), and blue (B). The factory setting for this product is 6500K (6500 Kelvin).</p> <table><tr><th colspan="2">Color Adjust</th></tr><tr><td>sRGB</td><td></td></tr><tr><td>9300K</td><td></td></tr><tr><td>• 6500K</td><td></td></tr><tr><td>5400K</td><td></td></tr><tr><td>User Color</td><td></td></tr><tr><td>1:EXIT</td><td>2:SELECT</td></tr></table> <p>sRGB — sRGB is quickly becoming the industry standard for color management, with support being included in many of the latest applications. Enabling this setting allows the LCD display to more accurately display colors the way they were originally intended. Enabling the sRGB setting will cause the Contrast and Brightness adjustments to be disabled.</p> <p>9300K — Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).</p> <p>6500K — Adds red to the screen image for warmer white and richer red.</p> <p>5400K — Adds green to the screen image for a darker color.</p>	Color Adjust		sRGB		9300K		• 6500K		5400K		User Color		1:EXIT	2:SELECT
Color Adjust															
sRGB															
9300K															
• 6500K															
5400K															
User Color															
1:EXIT	2:SELECT														

Control	Explanation
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User Color — Individual adjustments for red (R), green (G), and blue (B).

- 1 To select color (R, G or B) press button [2].
- 2 To adjust selected color, press ▲ or ▼.

Important: If you select RECALL from the Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.



Information displays the timing mode (video signal input) coming from the graphics card in your computer. See your graphic card's user guide for instructions on changing the resolution and refresh rate (vertical frequency).

VESA 1024 x 768 @ 60 Hz (recommended) means that the resolution is 1024 x 768 and the refresh rate is 60 Hertz.

Information	
H. Frequency:	48.60 KHz
V. Frequency:	60.00 Hz
Pixel Clock:	65.00 MHz
Resolution:	1024 x 768
Model Number:	VS10040
Serial No:	
www.viewsonic.com	
1:EXIT	



Image Adjust

Image Adjust	
	H./V. Position
	H. Size
	Fine Tune
	Sharpness
1:EXIT	2:SELECT

The Image Adjust controls are explained below:



H./V. Position adjusts horizontal and vertical position of the screen image. You can toggle between Horizontal and Vertical by pressing button [2]. Horizontal moves the screen image to the left or to the right. Vertical moves the screen image up and down.



H. Size (Horizontal Size) adjusts the width of the screen image.

NOTE: Vertical size is automatic with your LCD display.

Control Explanation



Fine Tune sharpens focus by aligning the illuminated text and/or graphic characters.

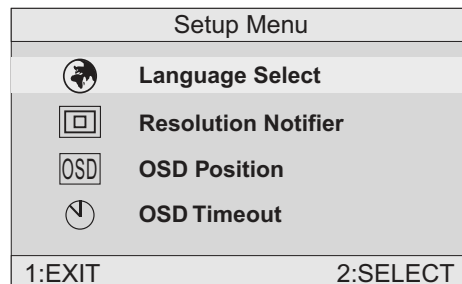
NOTE: Try the **Auto Adjust** before using the **Fine Tune** control.



Sharpness adjusts the clarity and focus of the screen image.



Setup Menu displays the menu shown below.



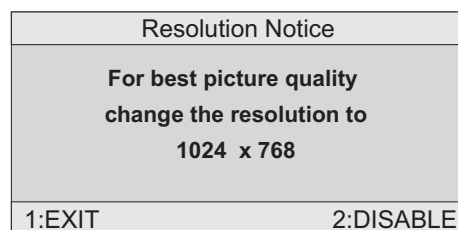
The Setup Menu controls are explained below.



Language Select allows you to choose the language used in the menus and control screens.



Resolution Notice advises the optimal resolution to use.



OSD Position allows you to move the on-screen display menus and control screens.



OSD Timeout sets the length of time an on-screen display screen is displayed. For example, with a “15 second” setting, if a control is not pushed within 15 seconds, the display screen disappears.

Control Explanation



Memory Recall returns adjustments to the original factory settings if the display is operating in a factory Preset Timing Mode listed in this user guide.

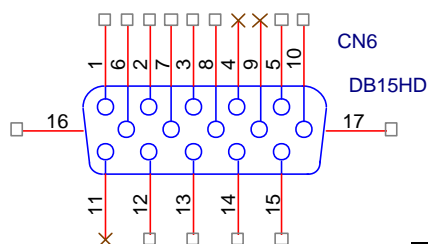
4. Circuit Description

1. Outline

- 1.1 Power On/Off, 2Enter button (INPUT SELECT) , up arrow- button, down arrow button, 1MENU button, button on the front panel.
- 1.2 Video signal connector and AC-IN jack are located on the back side of the cabinet.
- 1.3 OSD menu includes the following function;
 - Auto Image Adjust (only active under analog input)
 - Contrast/Brightness
 - Audio Adjust
 - Color Adjust
 - Information
 - Manual Image Adjust
 - Setup Menu
 - Memory Recall
- 1.4 Contrast and Brightness can be directly controlled with UP / DOWN key.

2. CONNECTORS

- 2.1 AC inlet : CEE22 typed connector
- 2.2 Video signal connector for analog input: 15P Mini D-Sub



PIN	MNEMONI	SIGNAL
1	RV	Red Video
2	GV	Green Video
3	BV	Blue Video
4	NC	None
5	GND	Ground (DDC return)
6	RG	Red GND
7	GG	Green GND
8	BG	Blue GND
9	+5V	+5V (for DDC)
10	SG	Sync GND
11	NC	None
12	SDA	DDC Data
13	HS	Horizontal Sync
14	VS	Vertical Sync
15	SCL	DDC Clock

3. ELECTRICAL SPECIFICATIONS

3.1 Standard conditions

Display Area	304 x 228 mm
Video Signal	0.7 Vpp
Contrast	Max.
Brightness	Max.
Ambient	20 +/- 5 °C
Input	AC
Warming up	> 30 min
Display	1024 x 768

3.2 POWER

3.2.1 Power supply

Input Voltage	90 -240 ~Volts
Power Frequency	50/ 60 Hz +/-3Hz
Input current	<1.5Arms @ 90Vac <0.75Arms@265Vac
Inrush current	90A(max.) at 230Vac
Power consumption	30Watt
Output Voltage	@0-4.8A load 12Vdc +/-5%

3.2.2 Power Management

State	Power	Indicator
On	30Watt	Green
Standby	<1Watt	Amber
Off	<1Watt	Off

3.3 Acceptable timing

If your timing is within following specification, this LCD display can automatically function with a certain position.

Horizontal: Sync frequency : 30~82 kHz

Vertical: Sync frequency : 56~75Hz

3.4 Signal level and input impedance

3.4.1 Video Signal level: 0.7 Vp-p Video signal.

3.4.2 Sync Signal level

H/V Separate : TTL level

3.4.3 Input impedance

Video input : 75 ohms

Sync input : > 1 k ohms

4. SIGNAL CABLE: Signal cable with Mini D-Sub 15P connectors at both ends. Length: 1.8 meter.

5. EDID data

Analog EDID

128 BYTES OF EDID CODE:

	0	1	2	3	4	5	6	7	8	9
0		00	FF	FF	FF	FF	FF	FF	00	5A 63
10		19	32	01	01	01	01	0D	01	03
20		08	1E	17	78	2E	B1	A5	A1	58 4F
30		95	26	16	50	54	BF	EE	00	45 59
40		31	59	01	01	01	01	01	01	01 01
50		01	01	01	01	64	19	00	40	41 00
60		26	30	18	88	36	00	30	E4	10 00
70		00	18	00	00	00	FF	00	50	31 47
80		30	33	30	31	30	30	30	30	31 0A
90		00	00	00	FD	00	32	55	1E	3E 08
100		00	0A	20	20	20	20	20	20	00 00
110		00	FC	00	56	45	35	31	30	73 0A
120		20	20	20	20	20	20	00	09	

- (08-09) ID Manufacturer Name = VSC
(10-11) Product ID Code = 1932
(12-15) Last 5 Digits of Serial Number = Not Used
(16) Week of Manufacture = 01
(17) Year of Manufacture = 2003
(10-17) Complete Serial Number = See Descriptor Block
(18) EDID Version Number = 1
(19) EDID Revision Number = 3
(20) VIDEO INPUT DEFINITION:
Analog Signal
0.700, 0.300 (1.000 Vp-p)
Separate Syncs
(21) Maximum Horizontal Image Size = 300 mm
(22) Maximum Vertical Image Size = 230 mm
(23) Display Gamma = 2.20
(24) Power Management and Supported Feature(s):
Active Off/Very Low Power, Standard Default Color Space,
Preferred Timing Mode
Display Type = R/G/B Color
(25-34) CHROMA INFO:
Red X - 0.631 Green X - 0.309 Blue X - 0.150 White X - 0.313
Red Y - 0.347 Green Y - 0.583 Blue Y - 0.088 White Y - 0.329

Monitor Range Limits:
Min Vertical Freq - 50 Hz
Max Vertical Freq - 85 Hz
Min Horiz. Freq - 30 KHz
Max Horiz. Freq - 62 KHz
Pixel Clock - 80 MHz
Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

Monitor Name:
VE510s

(126) No Extension EDID Block(s)

(127) CheckSum OK

6. THEORY OF OPERATION

This section describes the function of the LCD monitor per functional block.

This monitor includes MB board, power board and button board.

6.1 MB BOARD

The MB board is a two-layer, single-landed design with ground and internal planes provided. DC power from the power board enter the board through a 6P cable. Other connector on the board is for button board. The VGA cable is a signal cable that contains video signal, sync signal and DDC signal from PC VGA adapter. This system board consists of 4 functional areas : flat panel controller, MCU with flash ROM , power regulator .

6.1.1 Flat panel controller... RTD2013(U7)

The heart of the system board is Realtek RTD2013. The RTD2013 is a graphics processing IC for LCD monitor. It provides all key IC functions required for LCD panel. On-chip functions include a high-speed triple-ADC , PLL, high scaling engine, OSD controller.

a) Clock Generation :

Crystal Input Clock (TCLK and XTAL). This is the input pair to an internal crystal oscillator and corresponding logic. A 24.576 MHz crystal is recommended.

b) Analog to Digital Converter:

The RTD2013 chip has three ADC's (analog-to-digital converters), one for each color (red, green and blue) .The analog RGB signals are connected to RTD2013 as described below

Pin Name	Pin Number
Red +	37
Red -	38
Green +	34
Green -	35
Blue +	30
Blue -	31

c) OSD : The RTD2013 has a fully programmable ,high-quality OSD controller. The on-chip static RAM(4096 words by 24 bits) stores the cell map and the cell definitions.

- d) MTV312 Micro controller: The MTV312 micro controller(MCU) serves as the system micro controller. It's programs the RTD2013 and manages other devices in the system such as the keypad, the backlight, LED, audio and non-volatile RAM. using general purpose input/output (GPIO) pins.

Pin number	Pin Name	Pin Number Usage
1	P5.2	Key / Power on ,off
13	P3.4	NV_RAM (U4) SDA
14	P3.5	NV_RAM (U4) SCL
41	P5.4	Key_down
40	P5.5	Key_right
42	P5.3	Key_up
34	P5.6	Key_left
9	P6.3	Key_mute
2	P5.1	Key_select
27	P6.0	LED_red
26	P6.1	LED_green
16	P6.2	LCD panel power1 on / off control
17	P1.0	Backlight on / off control

- e) Panel Power Sequencing (PANEL_PW12,3) (Pin 16, 18) : The MTV312 has two dedicated outputs VDDCTRL1 and 2 (Pin32 and Pin3) to control LCD power sequencing once data and control signals are stable.
- f) Panel interface (Pin73~94) : The RTD2013 driver interface is highly programmable. It supports dual bus / dual port for XGA drivers.

6.1.2 Power Regulator AIC1563 (U2),AIC1739-25CX(U10) : The AIC1563 is a monolithic control IC containing the primary functions required for DC to DC converters. The device consists of an internal temperature compensated reference, comparator, controlled duty cycle.

Oscillator with an active current sense circuit. Desired output voltage are determined by the equation,

$$\text{Volt} = 1.25 \left(1 + \frac{R_{11}}{R_{12}} \right)$$
In this case, the output voltage are 3.3 Volts

The AIC1563 is a low dropout positive adjustable regulator with minimum of 1A output current capability. So it is well suited for 2.5 V Regulator.

6.1.3 Power Regulator AIC1739-25CX(U10) : The AIC1739-25CX is a monolithic control IC containing the primary functions required for DC to DC converters. The device consists of an internal temperature compensated reference, comparator, controlled duty cycle.

Oscillator with an active current sense circuit. Desired output voltage are determined by the fixed output function, the output voltage are 2.5 Volts for scaler power.

6.2 Power(Inverter) Board

This is a specific power(inverter) power board for L5VC monitor 30W 12V 2.5A output power and backlight which converts 12 Vdc to drive two cold cathode fluorescence tubes.

6.2.1 Inverter Electrical specification described as below.

Input	Rated Input Voltage	12Vdc
	Input Voltage Range	11.4 ~ 12.6 Vdc
	Input Current	<1.5 A

	On / Off control Voltage	2~3.3 for on , 0~1 for off
Output	Rated Output Strike-on Voltage	1500Vrms
	Rated Output Voltage	710Vrms at 8.5mA
	Rate Output Frequency	50~60KHz
	Rated Ourput Current	3~9 mA

6.2.2 power

This is a general purpose AC / DC adapter which converter 90~240 Vac to a stabilized DC voltage 12 V with rated output current of 2.5 A . Electrical specification described as below.

	Rated Input Voltage	90~240 Vac , 50 / 60Hz
	Operation Input Voltage	90~260 Vac , 47 ~ 63Hz
	Input Current	<1.5A
	Inrush Current	<100A@120Vac
	Standby Input Voltage	12Vdc
	Output Voltage Regulation	+/-5%
	Output Ripple & Noise	120mVp-p
	Rate Output Current	<2.5A
	Turn-on delay	<3secs

5. Adjustment Procedure

A. OSD Function Menu

1. Main Menu

Press the [1] (Menu) button to enter the Main Menu:

Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

Press the [1] (Menu) button to exit the Main Menu.

(1) Auto Image Adjust Page:

Press the [2] button to execute the auto image adjust function.

Press the [1] button to exit the page.

(2) Contrast/Brightness Page:

Press the [2] button to enter the contrast adjustment page.

Press the [1] button to exit the page.

1) Contrast Item

Press the [▲] button to increase the contrast.

Press the [▼] button to decrease the contrast.

Press the [2] button to enter the brightness adjustment page.

Press the [1] button to exit the page.

2) Brightness Item

Press the [▲] button to increase the brightness.

Press the [▼] button to decrease the brightness.

Press the [2] button to enter the contrast adjustment page.

Press the [1] button to exit the page.

(3) Color Adjust Page:

Press the [2] button to enter the color adjustment page.

Press the [1] button to exit the page.

Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

1) sRGB Item

2) 9300K Item

3) 6500K Item

4) 5400K Item

Press the [2] button to select the currently highlighted item.

Press the [1] button to exit the currently highlighted item.

5) User Color Item

Press the [2] button to enter the user color page.

Press the [1] button to exit the page.

Red, Green, Blue Options:

Press the [2] button to cycle among the colors.

Press the [1] button to exit the page.

Press the [▲] button to increase the selected color level.

Press the [▼] button to decrease the selected color level.

(4) Information Page:

Press the [2] button to enter the information page.

Press the [1] button to exit the information page.

(5) Manual Image Adjust Page:

Press the [2] button to enter the manual image adjustment page.

Press the [1] button to exit the page.

Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

1) H./V. Position Item

Press the [2] button to enter the horizontal/vertical position adjustment page.

Press the [1] button to exit the page.

a) Horizontal Position:

Press the [2] button to enter the vertical position adjustment page.

Press the [1] button to exit the page.

Press the [▲] button to shift the image to the right.

Press the [▼] button to shift the image to the left.

b) Vertical Position:

Press the [2] button to return to the horizontal position adjustment page.

Press the [1] button to exit the page.

Press the [▲] button to shift the image upward.

Press the [▼] button to shift the image downward.

2) Horizontal Size Item

Press the [2] button to enter the horizontal size adjustment page.

Press the [1] button to exit the page.

Press the [▲] button to make the image wider.

Press the [▼] button to make the image narrower.

3) Fine tune Item

Press the [2] button to enter the fine tuning page.

Press the [1] button to exit the page.

Press “[▲]” Button to adjust character position in one direction.

Press “[▼]” Button to adjust character position in the other direction.

4) Sharpness Item

Press the [2] button to enter the sharpness adjustment page.

Press the [1] button to exit the page.

Press “[▲]” Button to increase image sharpness.

Press “[▼]” Button to decrease image sharpness.

(6) Setup Menu Page:

Press the [2] button to enter the setup menu page.

Press the [1] button to exit the page.

Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

1) Language Select Item

Press the [2] button to enter the language selection page.

Press the [1] button to exit the page.
Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

English, French... Option

Press the [2] button to select the language.
Press the [1] button to exit the page.

2) Resolution Notice Item

Press the [2] button to enter the resolution notice page.
Press the [1] button to exit the page.

Enable, Disable Option

Press the [2] button to select the highlighted option.
Press the [1] button to exit the page.
Press the [▲] button to highlight the previous option or the [▼] button to highlight the next option.

3) OSD Position Item

Press the [2] button to enter the OSD position adjustment page.
Press the [1] button to exit the page.

a) Horizontal Position Option

Press the [2] button to enter the vertical position adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to shift the menu to the right.
Press the [▼] button to shift the menu to the left.

b) Vertical Position Option:

Press the [2] button to enter the horizontal position adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to shift the menu upward.
Press the [▼] button to shift the menu downward.

4) OSD Time Out Item

Press the [2] button to enter the OSD time out adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to increase the OSD time out.
Press the [▼] button to decrease the OSD time out.

5) OSD Background Item

Press the [2] button to enter the OSD background selection page.
Press the [1] button to exit the page.

Enable, Disable Option

Press the [▲] button to highlight the previous option or the [▼] button to highlight the next option.
Press the [2] button to select the highlighted option.
Press the [1] button to exit the page.

(7) Memory Recall Page

Press the [2] button to execute the memory recall function.
Press the [1] button to exit the page.

2. Short Cuts Function

- (1) **Press “1” button**
Open and exit OSD main menu
- (2) **Press “2” button**
Proceed Auto Image Adjustment
- (3) **Press Up or Down button**
Enter the Contrast Dialog
Press “1” Button to exit the Contrast Dialog
Press “2” Button to enter the Brightness Dialog
Press Up Button to make contrast/brightness high.
Press Down Button to make contrast/brightness low.
- (4) **Press Up and Down buttons at the same time**
Recall Contrast or Brightness while in the Contrast or Brightness adjustment
Recall both of Contrast and Brightness when the OSD is not open
- (5) **Press “1” and “2” buttons at the same time**
Toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode.
- (6) **Press “1”, Up and Down buttons at the same time**
Execute white balance adjustment
- (7) **Press “1” and Down buttons at the same time for 10 seconds.**
Activate Power Lock function
Deactivate Power Lock function
- (8) **Press “1” and Up buttons at the same time for 10 seconds.**

Activate OSD lock function
Deactivate OSD lock function

3. Factory Mode

Press “2” and power button at the same time (the power LED is amber)
Press “1” button to enter Main Menu
Select “Factory Mode” and press “2” button to enter

- (1) **Auto Burn**
Press “2” to use the chipset internal pattern for hot running monitor panel and inverter
Press Power button to exit and power off immediately
- (2) **Factory Reset**
Press “2” to recall factory setting and power off immediately
- (3) **Factory Color Setting**
 - a) **Reset Color**
Press “2” to recall factory-setting color temperature
 - b) **Auto Color**
Press “2” to perform Auto Balance measurement

c) Color Select

Press “2” to enter Color Adjust menu

Select color setting between “sRGB”, 9300K, 6500K and 5400K

d) Color Adjust

Adjust current RGB Driver value (GAIN) and cut-off level (OFFSET)

e) Color Update

Record your final color setting

(4) ISP (I2C Interface)

In-System Programming setting which is not allowed to be changed by dealers or resellers

(5) Spread Spectrum

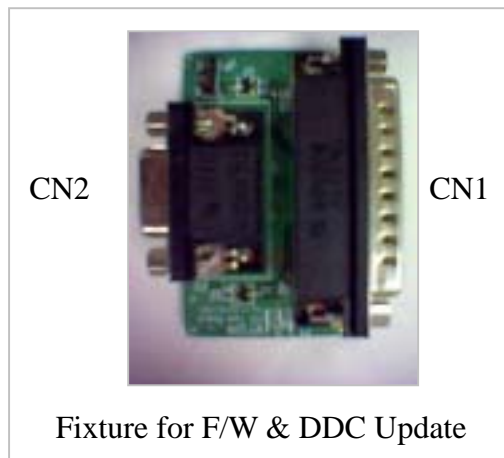
Adjust chip set internal frequency spread effect for EMI testing. Also not allowed to be changed by dealers or resellers --- Will cause EMI failure in the field.

B. LM5ISP Update Procedure

1. Firmware Update Procedure

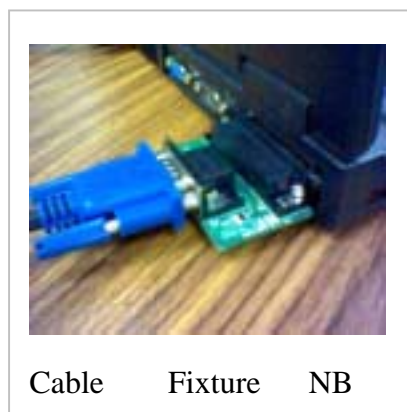
A. Equipment Needed

- VE510s/b monitor.
- Fixture for Firmware update.
- VGA Cable.
- Computer (NB or PC).
- Firmware update program (LM5ISP.exe).



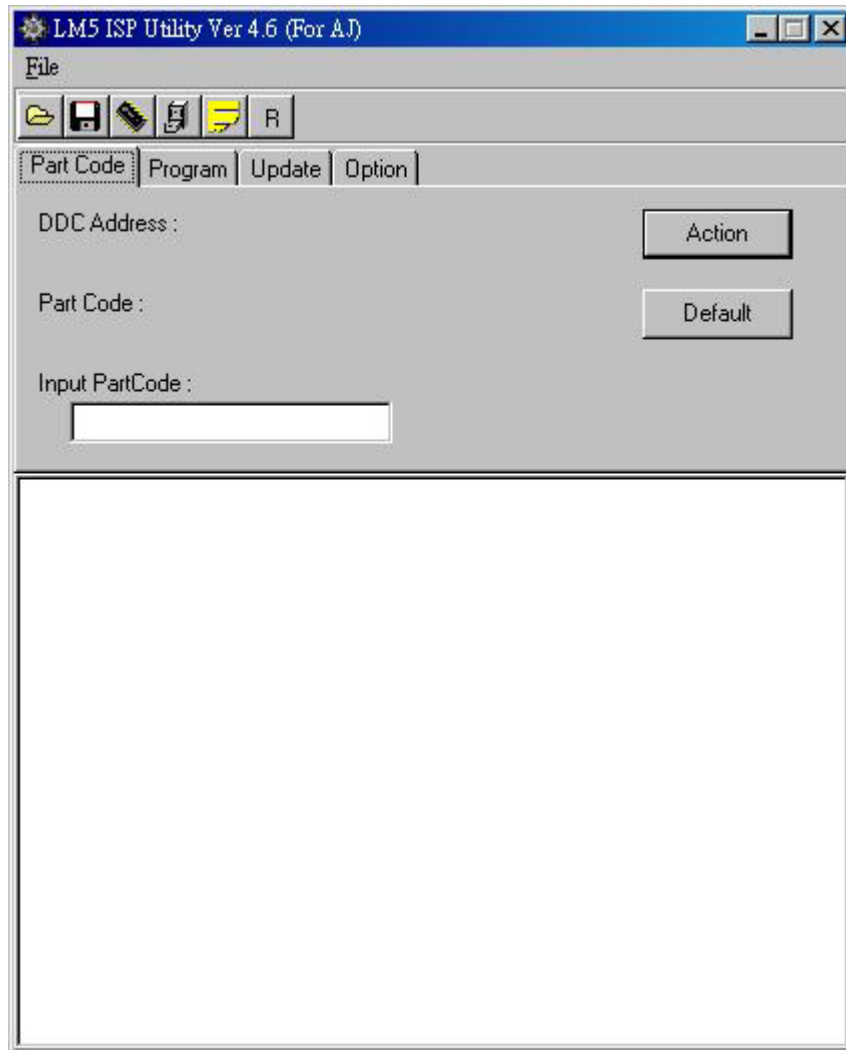
B. Setup Procedure

- Connect CN1 of Fixture to Printer Port of NB.
- Connect CN2 of Fixture to VGA Cable.
- Connect VGA Cable to Analog Input of monitor.
- Turn on the Monitor power.
- Copy the “LM5ISP.exe” to NB.

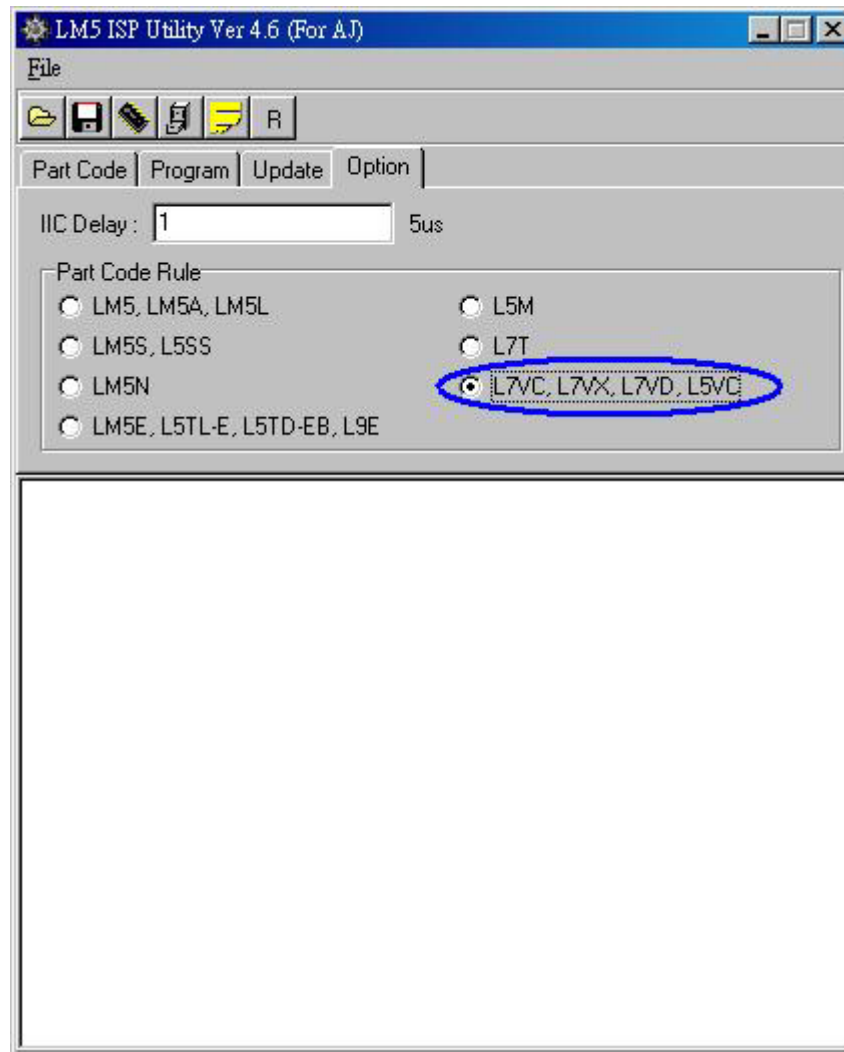


C. LM5ISP Firmware Update

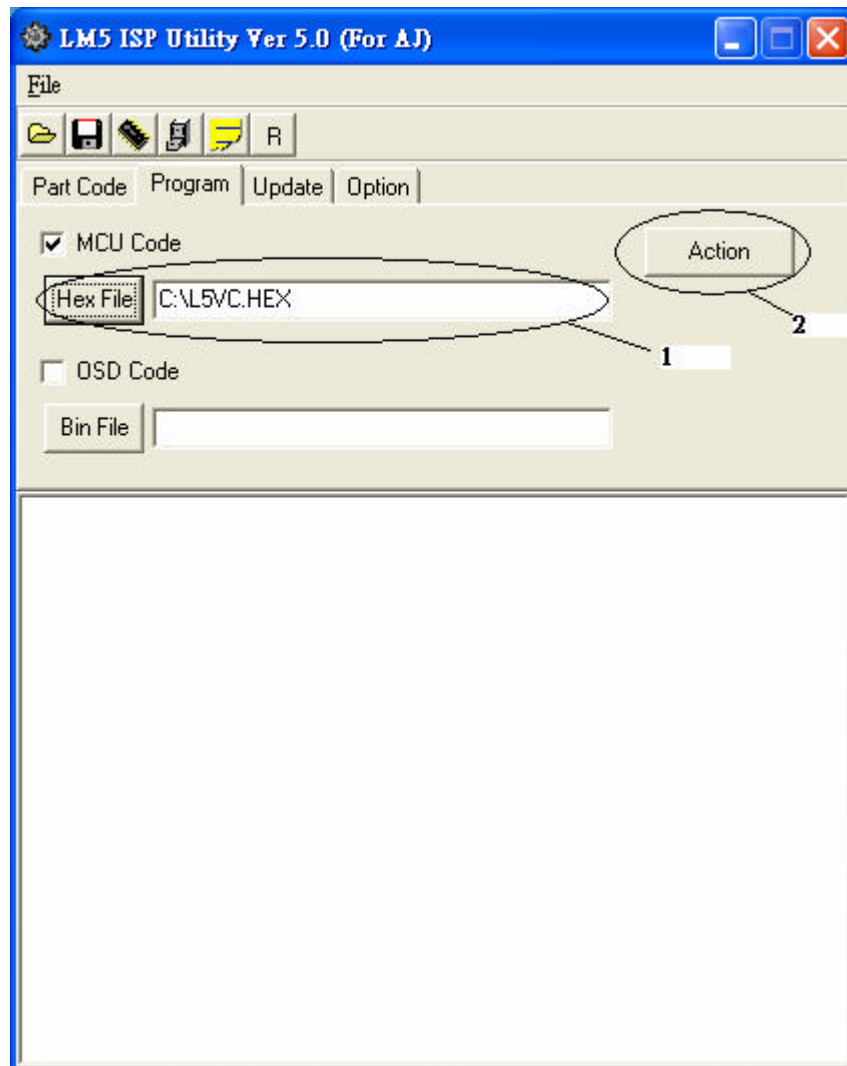
1. Run the “LM5ISP.exe” Program



2. Select the model name of Option Page



3. Read Firmware data from HEX File and then press “Action”



2. DDC Update Procedure

A. Equipment Needed

- VE510s/b monitor.
- Fixture for DDC update.
- VGA Cable.
- Computer (NB or PC).
- DDC update program (LM5ISP.exe).

B. Setup Procedure

- Connect CN1 of Fixture to Printer Port of NB.
- Connect CN2 of Fixture to VGA Cable.
- Connect VGA Cable to Analog Input of monitor.
- Turn on the Monitor power.
- Copy the “LM5ISP.exe” to NB.



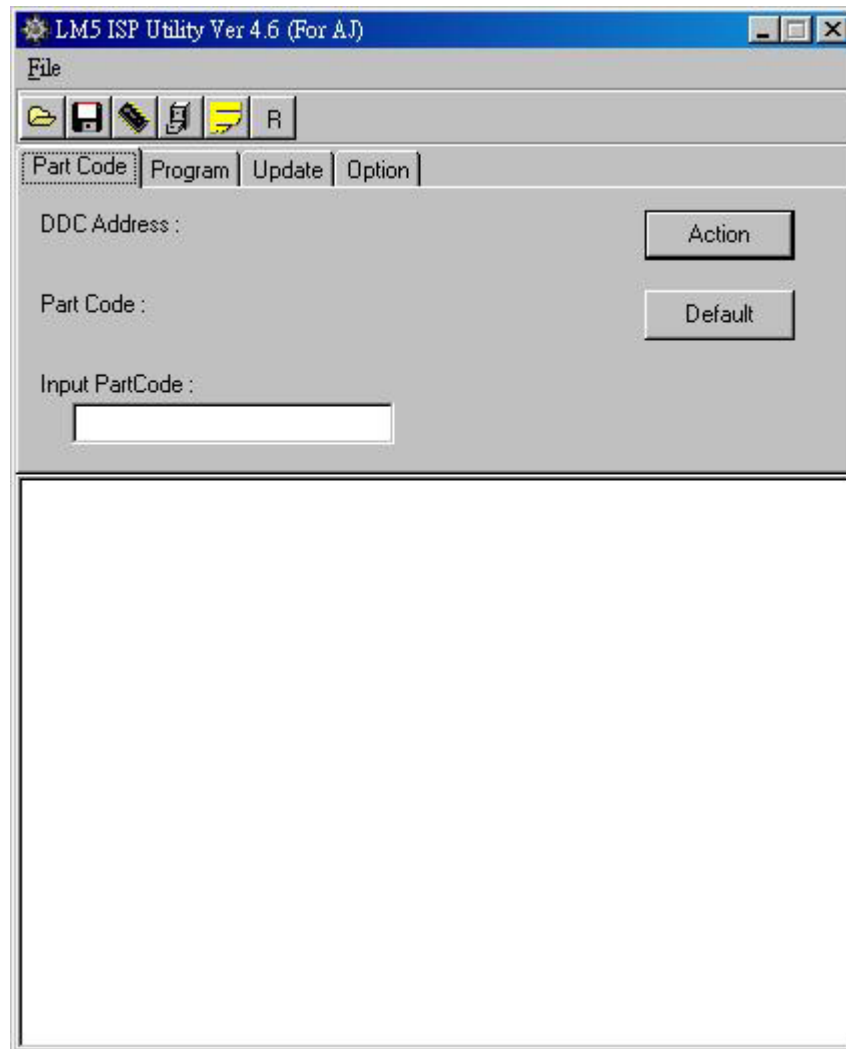
Cable Fixture NB



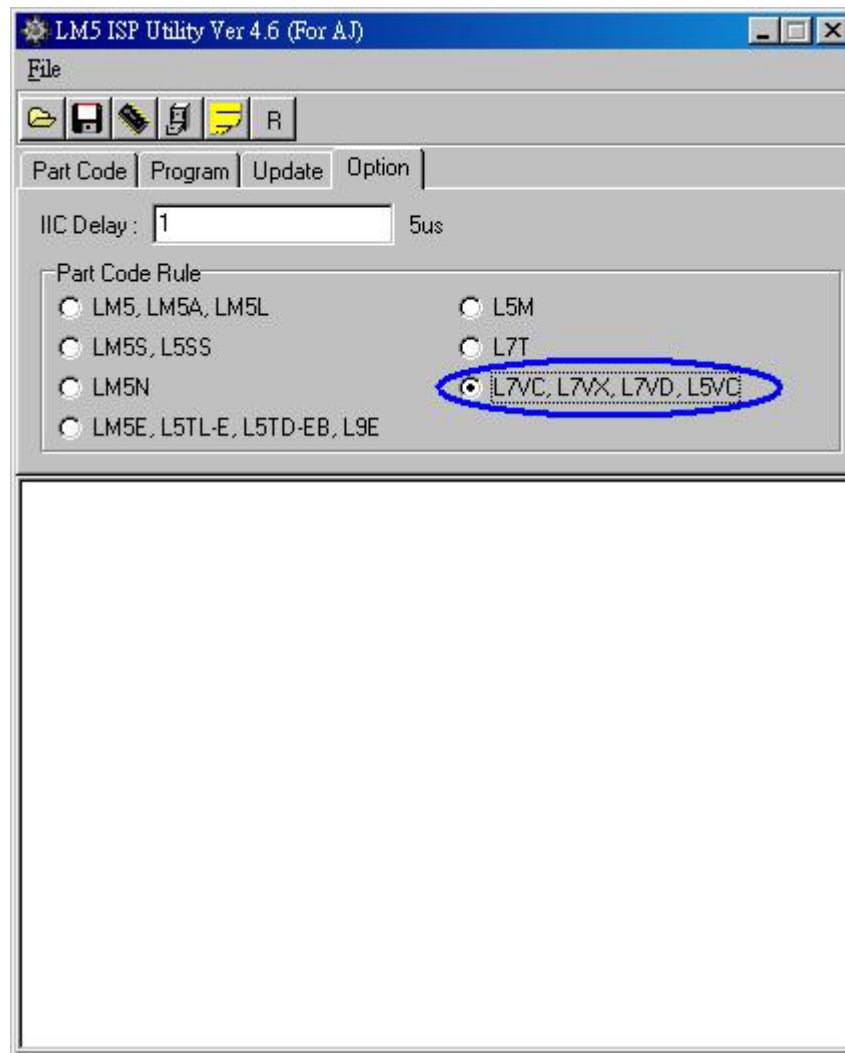
F/W or DDC Update

C. LM5ISP DDC Update

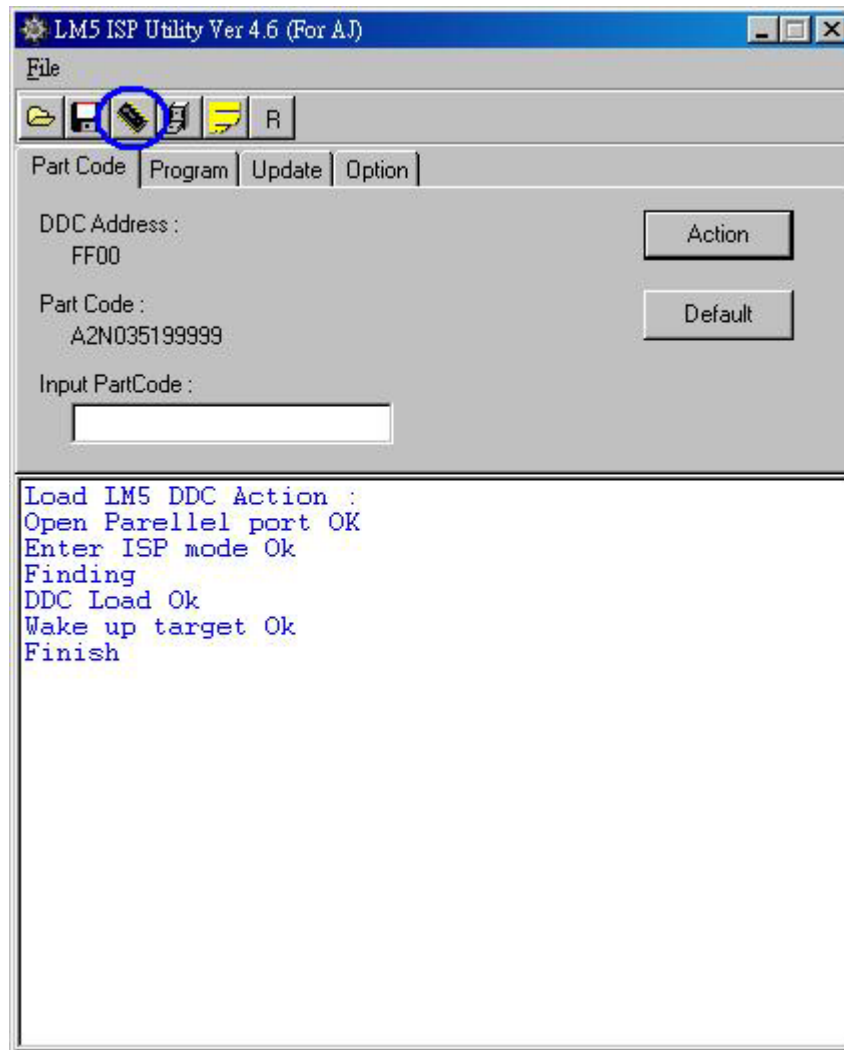
1. Run the “LM5ISP.exe” Program



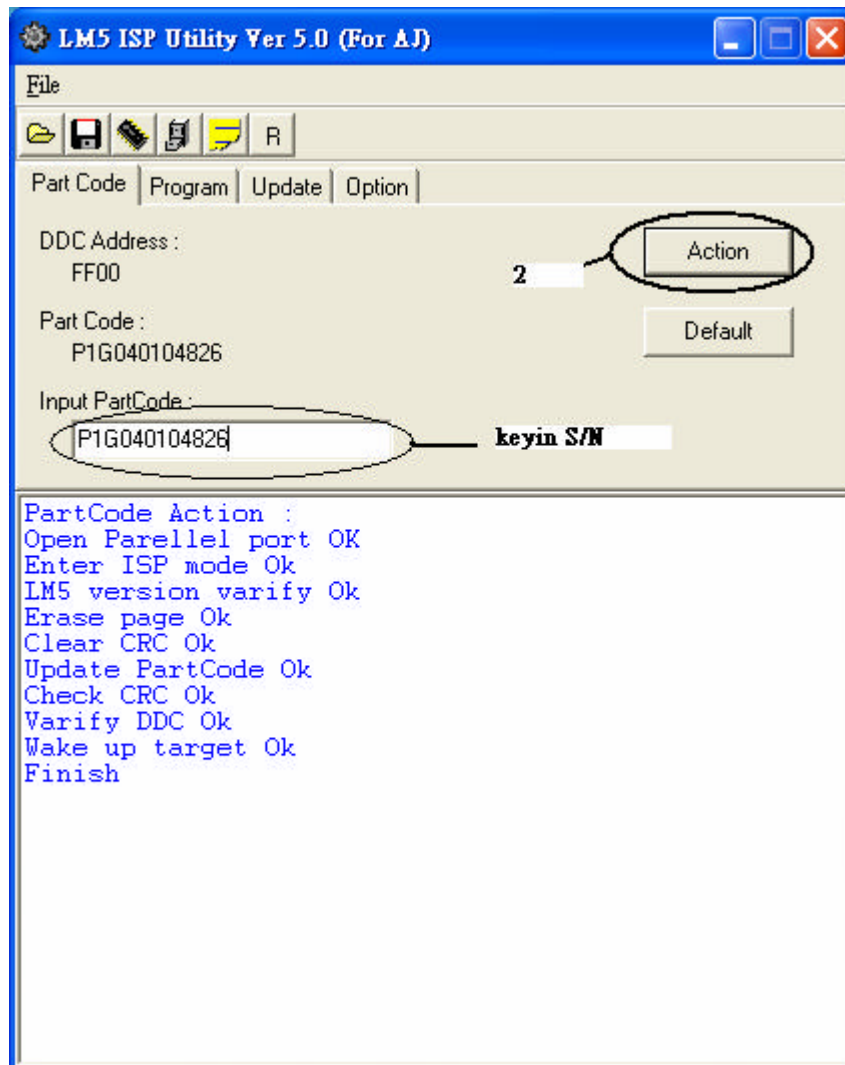
2. Select the model name of Option Page



3. Read DDC data from Monitor.

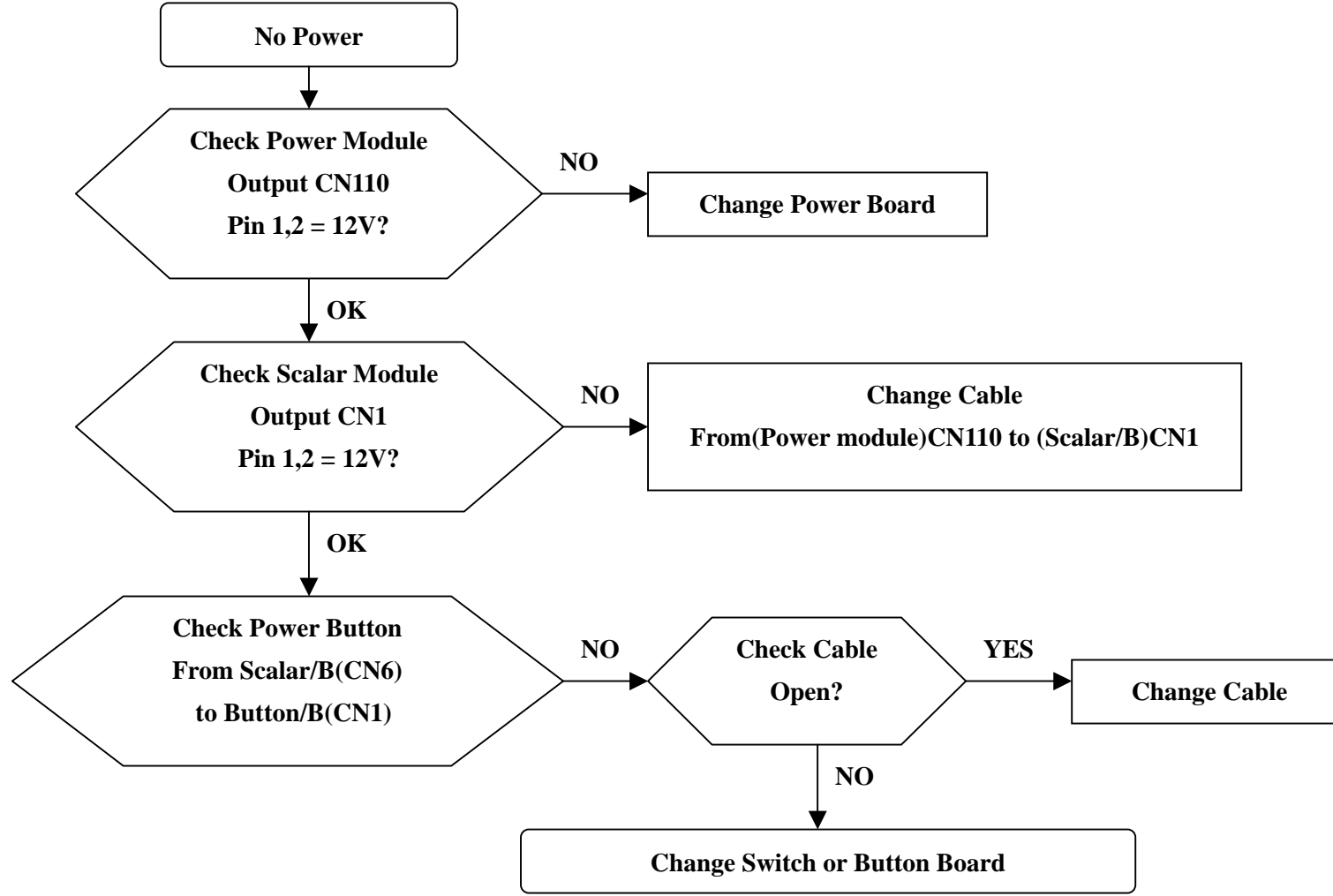


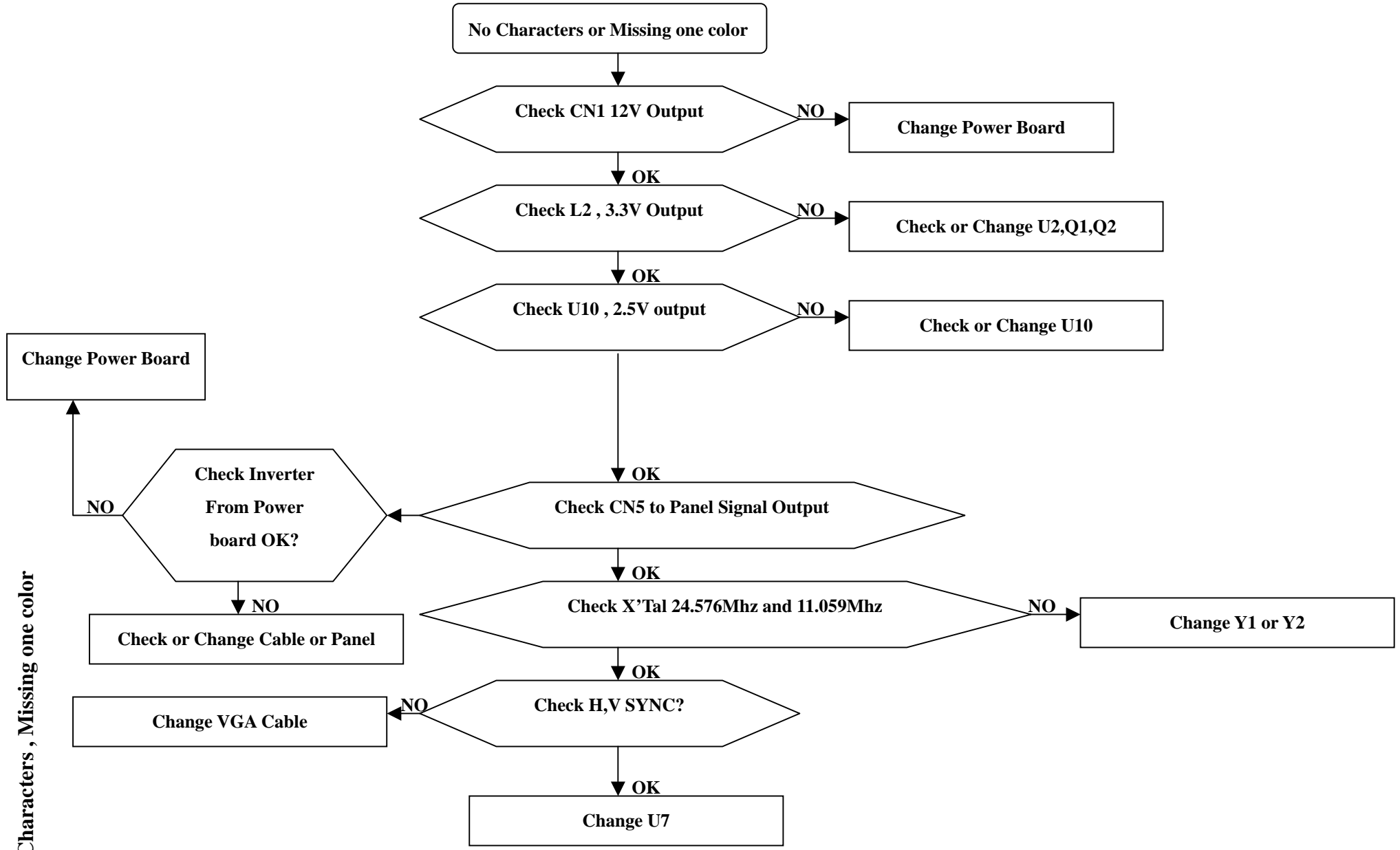
4. Key in the New Serial Number and then press “Enter” key



6. Troubleshooting Flow Chart

1.No power





7. Recommended Spare Parts List

RECOMMENDED SPARE PARTS LIST (VE510b-1)

ViewSonic Model Number: VS10040

Rev: 1c

Item	Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	PC Board Assembly:		B-CB-0206-0178	22L5VBB0003	button board	1
2			B-00000941	29L9IMB0021	Scaler board	1
3			B-00001502	AS02B012297	power board	1
4	Cabinets:		M-CV-0830-0284	GAL7V009013	Cover rubber plug	2
5			M-CV-0830-0282	EBL5V002014	Hinge cap	2
6			C-00001122	32L5VFBVS49	front bezel ass'y	1
7			C-BC-0302-0585	33L5VBCVS04	back cover ass'y	1
8			C-BS-0303-0513	24L5VSAVS01	Base ass'y	1
9	Cables:		M-MS-0808-9234	DDL7VCTH004	Button-MB cable	1
10			CB-00001503	DDL5VTLCC101	MB-LCD cable	1
11			A-PC-0106-0314	DDL7VCPB101	Power-MB cable	1
12			A-VC-0101-0364	DDL5VCPCC005	VGA cable	1
13	Documentation:		A-CD-VE510B	HGL5V002019	CD + user menu	1
14			M-LB-0813-0933	HCL5V002015	ID label on carton	1
15	Electronic		E-00001504	AA15XL02034	LCD panel	1
16	Hardware:		M-SCW-0824-0813	MF30060BBJ6	Screw	3
17			M-SCW-0824-0814	MM30060BBJ3	Screw	1
18			M-SCW-0824-0815	MS35050ILV0	Screw	1
19			M-SCW-0824-6802	MM30040IBJ9	Screw	13
20			M-SCW-0824-0816	MM40100BC12	Screw	2
21			M-SCW-0824-6797	MF40080BJ29	Screw	2
22			M-SCW-0824-0816	MM40100BC12	Screw	4
23			M-SCW-0824-6797	MF40080BJ29	Screw	2
24	Miscellaneous:		M-MS-0808-9237	GAL7V006014	VESA rubber plug	4
25	Packing Material:		P-BX-0601-0952	HFL5V002018	carton	1
26			M-MS-0808-7710	HAL7E002013	PE bag	1
27			P-FM-0602-0861	HBL5V001018	end cap(L)	1
28			P-FM-0602-0862	HBL5V002014	end cap(R)	1

M-Model (VE510b-1M)

Item	Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:		A-PC-0106-0224	DM333181G97	AC POWER CORD	1

P-Model (VE510b-1P)

Item	Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:		A-PC-0106-0224	DM333181G97	AC POWER CORD	1

G-Model (VE510b-1G)

Item	Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:		A-PC-0106-0306	DM333181S01	AC POWER CORD	1

E-Model (VE510b-1E)

Item	Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:		A-PC-0106-0227	DM333181801	AC POWER CORD	1

J-Model (VE510b-1J)

Item	Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:		A-PC-0106-0309	DM333180006	AC POWER CORD	1

RECOMMENDED SPARE PARTS LIST (VE510s-1)

ViewSonic Model Number: VS10040

Rev: 1c

Item		Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Board Assembly:	Main Board		B-00000941	29L9IMB0021	Scaler board	1
2		Power board / inverter		B-00001505	AS02B012297	power board	1
3		Button board ass'y		B-CB-0206-0178	22L5VBB0003	button board	1
4	Cabinets:	Rear enclosure (Black)		C-BC-0302-0584	33L5VBCVS12	back cover ass'y	1
5		Front enclosure (LG/Sliver)		C-00001123	32L5VFBVS57	front bezel ass'y	1
6		Stand ass'y (Black)		C-BS-0303-0512	24L5VSAVS10	Base ass'y	1
7		Hinge cap		M-CV-0830-0282	EBL5V002014	Hinge cap	2
8		Cover rubber plug (Black)		M-CV-0830-0283	GAL7V010011	Cover rubber plug	2
9	Cables:	VGA cable (14P/15P)		A-VC-0101-0364	DDL5VCPC005	VGA cable	1
10		Power-MB cable (8P/8P)		A-PC-0106-0314	DDL7VCPB101	Power-MB cable	1
11		Button-MB cable (8P/10P)		M-MS-0808-9234	DDL7VCTH004	Button-MB cable	1
12		MB-LCD cable (30P/20P)		CB-00001503	DDL5TLCL101	MB-LCD cable	1
13	Documentation:	ID label (VE510s)		M-LB-0813-0932	HCL5V001019	ID label on carton	1
14		CD wizard (VE510s QSG)		A-CD-VE510S	HGL5V001012	CD + user menu	1
15	Electronic	LCD panel (QDI QD15XL02 v.2)		E-00001504	AA15XL02034	LCD panel	1
16	Hardware:	Screw (To assembly the cabinet)		M-SCW-0824-0813	MF30060BBJ6	Screw	3
17		Screw (To assembly the cabinet)		M-SCW-0824-0814	MM30060BBJ3	Screw	1
18		Screw (To assembly the cabinet)		M-SCW-0824-0815	MS35050ILV0	Screw	1
19		Screw (To assembly the cabinet)		M-SCW-0824-6802	MM30040IBJ9	Screw	13
20		Screw (To assembly the cabinet)		M-SCW-0824-0816	MM40100BCI2	Screw	2
21		Screw (To assembly the cabinet)		M-SCW-0824-6797	MF40080BJ29	Screw	2
22		Screw (To assembly the cabinet)		M-SCW-0824-0816	MM40100BCI2	Screw	4
23		Screw (To assembly the cabinet)		M-SCW-0824-6797	MF40080BJ29	Screw	2
24	Miscellaneous:	VESA rubber plug (Black)		M-MS-0808-9236	GAL7V008017	VESA rubber plug	4
25	Packing Material:	Carton (VE510s)		P-BX-0601-0951	HFL5V001011	carton	1
26		Polyform (L)		P-FM-0602-0861	HBL5V001018	end cap(L)	1
27		Polyform (R)		P-FM-0602-0862	HBL5V002014	end cap(R)	1
28		EPE bag		M-MS-0808-8981	HAL7V001012	EPE bag	1

M-Model (VE510s-1M)

Item		Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:	POWER CORD (US)		A-PC-0106-0224	DM333181G97	AC POWER CORD	1

P-Model (VE510s-1P)

Item		Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:	POWER CORD (US)		A-PC-0106-0224	DM333181G97	AC POWER CORD	1

G-Model (VE510s-1G)

Item		Accessories:	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:	POWER CORD (CHINA)		A-PC-0106-0306	DM333181S01	AC POWER CORD	1

E-Model (VE510s-1E)

Item		Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:	POWER CORD (EU)		A-PC-0106-0227	DM333181801	AC POWER CORD	1

J-Model (VE510s-1J)

Item		Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	Accessories:	POWER CORD (JP)		A-PC-0106-0309	DM333180006	AC POWER CORD	1

BOM LIST (VE510b-1)

ViewSonic Model Number: VS10040

Rev: 1a

Item	ViewSonic P/N	Reference P/N	Description	Location	Qty
1	B-00000941	29L9IMB0021	L9I M/B ASSY(FOR L5VC-2 REALTEK)		1
2	#N/A	39L9IDP0013	L9I M/B DIP ASSY(FOR L5VC-2 REALTEK)		1
3	#N/A	41L9ISS0011	L9I M/B S/S ASSY(FOR L5VC-2 REALTEK)		1
4	#N/A	DA0L9IMB2B1	PCB(M/B) L9I MB(2L,12.5*12 REVb)		1
5	#N/A	L9I206-01	DA0L9IMB2B1 L9I MB GERBER FILE		0
6	#N/A	AJD2013MF07	IC(128P) RTD2013(95MHZ,QFP)	U7	1
7	E-IC-0401-2651	AKE3A8S0Y01	IC,EEPROM(8P) 24LC16B/SN(2K*8,100KHZ)	U8	1
8	#N/A	AJ00312VP18	IC(44P) MTV312MV64AJ(12MHZ,PLCC)	I1	1
9	#N/A	AL001739001	IC(3P) AIC1739-25CX(SOT89)	U10	1
10	E-IC-0401-2654	AL001563001	IC(8P) AIC1563CS(SOP8)	U2	1
11	#N/A	BAN70020Z13	TRANSISTOR MOSFET 2N7002E(60V,250MA)	Q4	1
12	#N/A	BAM23010Z05	TRANSISTOR MOSFET SI2301DS(-12V,-2.3A)	Q8	1
13	#N/A	BA001430Z22	TRANSISTOR SMD DTC143EUA(50V,100MA)	Q9	1
14	#N/A	BA039060Z01	TRANSISTOR,SMD MMBT3906(40V,200MA)	Q2,Q3,Q12,Q13,Q18,Q19	6
15	E-Q-0402-1580	BAM9410YZ02	TRANSISTOR MOSFET SI9410DY(30V,7A)	Q1	1
16	E-D-0403-2082	BC1SS355Z05	DIODE SMD 1SS355(80V,100MA)	D1,D2	2
17	E-D-0403-2084	BCRB081LZ02	DIODE SMD RB081L-20(20V,5.0A,VF:0.45V)	D3	1
18	#N/A	BCLS4148AZ9	DIODE,SMD RLS4148	D30,D31	2
19	#N/A	BDGZ5226Z03	DIODE ZENER SMD MMGZ5226B(3.3V)	D34,D35	2
20	#N/A	CH02206J909	CAPACITOR CHIP 22P 50V(+5%,NPO,0603)	C26,C28,C33,C48,C87,C88	6
21	#N/A	CH11206J908	CAPACITOR CHIP 120P 50V(+5%,NPO,0603)	C9	1
22	#N/A	CH22206K917	CAP CHIP 2200P 50V(+10%,X7R,0603)	C10,C67,C68	3
23	#N/A	CH41004Z931	CAP CHIP 0.1U,25V(+80-20%,Y5V,0603)	C1,C3,C4,C5,C7,C8,C11,C12,C35,C36,C37,C38,C39,C40,C41,C42,C43,C44,C45,C47,C49,C51,C52,C54,C55,C56,C57,C58,C60,C61,C62,C63,C64,C69,C75,C76,C77,C78,C79,C80,C81,C82,C85,C100	44
24	#N/A	CH51004MA32	CAPACITOR CHIP 1UF 25V(+20%,Y5V,0805)	C13	1
25	#N/A	CH51001K991	CAP CHIP 1U 6.3V(+10%,X5R,0603)	C2,C102	2
26	#N/A	CH34703K916	CAP CHIP 0.047UF 16V(+10%,X7R,0603)	C16,C18,C19,C21,C22,C23,C25	7
27	#N/A	CS00006J205	RESISTOR CHIP 0 1/4W+5%(3216)	FUSE1,L22,L29,R2	4
28	#N/A	CS00003J900	RESISTOR CHIP 0 1/10W+5%(0603)	L8,L9,L10,L31,R8,R166	6
29	#N/A	CX201209805	EMI FILTER CHIP FBM-11-201209-121A40	L12,L13,L14,L15,L19,L28	6
30	#N/A	CS04703J906	RES CHIP 47 1/10W +5%(0603)	R4,R164	2
31	#N/A	CS07503F905	RESISTOR CHIP 75 1/10W +1%(1608)	R24,R27,R32	3
32	#N/A	CS11003J904	RESISTOR CHIP 100 1/10W +5%(0603)	R23,R25,R26,R28,R29,R31,R33,R34,R36,R66,R83,R92,R124,R125	14
33	#N/A	CS12203J904	RES CHIP 220 1/10W +5%(0603)	R102,R103	2
34	#N/A	CS22203F904	RES CHIP 2.2K 1/10W,+1%(0603)	R12	1
35	#N/A	CS21003J906	RES CHIP 1K 1/10W +5%(0603)	R9,R13,R16,R56,R95,R96,R97,R98,R99,R100,R101	11
36	#N/A	CS22003J909	RES CHIP 2K 1/10W +5%(0603)	R35,R37,R38,R80,R81	5
37	#N/A	CS23603F901	RESISTOR CHIP 3.6K, 1/10W,+1%(0603)	R11	1
38	#N/A	CS24703F908	RESISTOR CHIP 4.7K 1/10W+1%(0603)	R18,R39,R40,R54,R58,R82,R93,R108,R109,R110,R111,R114,R115,R143,R144,R147,R163	17
39	#N/A	CS26803J909	RESISTOR CHIP 6.8K 1/10W +5%(1608)	R41	1
40	#N/A	CS31003J908	RES CHIP 10K 1/10W +5%(0603)	L3,R10,R68,R70,R78,R79	6
41	#N/A	CS33303J904	RESISTOR CHIP 33K 1/10W +5%(0603)	R84,R85,R87,R88,R89,R90,R91	7
42	#N/A	CS38203J904	RES CHIP 82K 1/10W +5%(0603)	R67	1
43	#N/A	CS42403F905	RESISTOR CHIP 240K 1/10W,+1%(0603)	R7	1
44	#N/A	CS43303J906	RES CHIP 330K 1/10W +5%(0603)	R5	1
45	#N/A	CS51003J901	RESISTOR CHIP 1M 1/10W +5% (1608)	R30	1
46	#N/A	CC62204MD23	CAP ELEC 22U 25V(+20%,105C,5*11,2000HR)	C34,C46,C50,C53,C59,C84,EC3,EC6	8
47	#N/A	CC71004MD68	CAP ELEC 100U 25V +20%,105C,6*11,LESR	C70	1
48	#N/A	CC73303MD51	CAP ELEC 330U 16V(+20%,105C,8*11,2000HR)	C6,EC4	2
49	E-L-0407-1563	DC04725K002	CHOKE COIL 47UH(2.5A,+10%,T07473)	L2	1
50	#N/A	BG624576031	CRYSTAL DIP 24.576MHZ(30PPM,20PF,49/US)	Y1	1
51	#N/A	BG611059319	CRYSTAL DIP 11.0592MHZ(+30PPM,49/US)	Y2	1
52	#N/A	DFHD08MS439	CONN DIP HEADER 8P 2R MS(P2.54,H6.0)	CN1	1
53	#N/A	DFHD14MS264	CONN DIP HEADER 14P 2R MS(P2.0,H6.0)	CN3	1
54	M-MS-0808-9809	DFHD30MR259	CONN DIP HEADER 30P 2R MR(P2.0,H4.0)	CN5	1
55	M-MS-0808-9810	DFHD10MR316	CONN DIP HEADER 10P 1R MR(P2.0,H4.1)	CN6	1
56	#N/A	AZL5VCZG001	L5VC SW BIOS(GBM) IMAGE REALTEK CHIP		1
57	B-00001505	AS02B012297	ADP/INV,SLS0326D12357,90-264V AC		1
58	B-CB-0206-0178	22L5VBB0003	L5VC BUTTON/B ASSY		1
59	#N/A	DAL5VCTB1A3	PCB(BUTTON) L5VC TB(1L,117*22,REVA)		1
60	#N/A	DFHD08MR301	CONN DIP HEADER 8P 1R MR(P2.0,H4.1)	CN1	1
61	#N/A	BEYG0013DA3	LED(DIP) YELLOW/GREEN(L-3WYGW)	LED1	1

Item	ViewSonic P/N	Reference P/N	Description	Location	Qty
62	#N/A	DHP0002B205	SWITCH PUCH BUTTON(PT-002-B2,50MA,12V)	SW1,SW2,SW3,SW4,SW5	5
63	#N/A	23L5VLAVS46	L5VC LCD MODULE ASSY(QDI/BLACK)		1
64	C-00001122	32L5VFBVS49	L5VC FRONT BEZEL ASSY(QDI/BLACK)		1
65	#N/A	32L5VFB4	L5VC FRONT BEZEL ASSY(QDI/BLACK)		0
66	C-00001511	EAL5V005012	LCD BEZEL L5VC-QDI(EAL5V005,REV3A)		1
67	#N/A	EAL5V005	LCD BEZEL L5VC-QDI		0
68	M-MS-0808-9242	EBL7V021014	LENS L7VC(EBL7V021,REV3A)		1
69	#N/A	EBL7V021	LENS L7VC		0
70	PL-BT-0706-0161	EBL5V001018	CONTROL BUTTON L5VC(EBL5V001,REV3A)		1
71	#N/A	EBL5V001	CONTROL BUTTON L5VC		0
72	M-MS-0808-9243	FEL7V003019	LOGO FRONT-VSC-38MM L7VC(FEL7V003,REV3A)		1
73	#N/A	FEL7V003	LOGO FRONT-VSC-38MM L7VC		0
74	M-MS-0808-9244	FEL7V004015	BIRD LOGO-10MM L7VC(FEL7V004,REV3A)		1
75	C-BC-0302-0585	33L5VBCVS04	L5VC BACK COVER ASSY		1
76	#N/A	33L5VBC0	L5VC BACK COVER ASSY		0
77	M-CV-0830-0285	EAL5V002013	LCD COVER L5VC(EAL5V002,REV3A)		1
78	#N/A	EAL5V002	LCD COVER L5VC		0
79	M-CV-0830-2484	FBL7V007011	KENSINGTON CAP(FBL7V007,REV3A)		1
80	#N/A	FBL7V007	KENSINGTON CAP		0
81	#N/A	RH2C0060801	STEEL SGCC 1220*61*0.8T		9
82	M-MS-0808-9245	FBL5V001018	HINGE ASSY L5VC(FBL5V001,REV3A)		1
83	#N/A	FBL5V001	HINGE ASSY L5VC		0
84	M-BK-0805-0066	FBL5V003011	VESA BKT L5VC(FBL5V003,REV3A)		1
85	M-BK-0805-0066	FBL5V003	VESA BKT L5VC		0
86	M-MS-0808-8718	EBL7V003016	LOGO PLATE(EBL7V003,REV3A)		1
87	#N/A	EBL7V003	LOGO PLATE		0
88	M-MS-0808-9246	GBLM7003017	GASKET-3 LM7S(GBLM7003,REV3A)		1
89	#N/A	GBLM7003	GASKET-3 LM7S		0
90	M-SCW-0824-6797	MF40080BJ29	SCREW F4.0*8-B(BNI)		7
91	M-BK-0805-0065	34L5VBAVS04	L5VC PCB BKT ASSY		1
92	#N/A	34L5VBA0	L5VC PCB BKT ASSY		0
93	M-BK-0805-0067	FAL5V001017	PCB BRACKET L5VC(FAL5V001,REV3A)		1
94	M-BK-0805-0067	FAL5V001	PCB BRACKET L5VC		0
95	B-PS-0204-0067	FCL5V002015	P/B MYLAR-UP L5VC(FCL5V002,REV3A)		1
96	#N/A	FCL5V002	P/B MYLAR-UP L5VC		0
97	M-LB-0813-0894	HCL7V005010	WARNING LABEL, INVERTOR(HCL7V005,3A)		1
98	#N/A	HCL7V005	WARNING LABEL, INVERTOR		0
99	B-SB-0221-0610	FCL5V003011	INV MYLAR L5VC(FCL5V003,REV3A)		1
100	#N/A	FCL5V003	INV MYLAR L5VC		0
101	E-00000942	AA150XQQ001	LCD(TFT) GB150XQQ3-A000(15",1024*768)		1
102	E-00001504	AA15XL02034	LCD(TFT) QD15XL02 REV:02(15",1024*768)		1
103	M-MS-0808-9247	EBL70023013	WIRE MOUNTS L70L-E(EBL70023,REV3A)		1
104	#N/A	EBL70023	WIRE MOUNTS L70L-E		0
105	HW-00001508	FAL5V007015	LCD BKT -L L5VC-QDI(FAL5V007,REV3A)		1
106	#N/A	FAL5V007	LCD BKT -L L5VC-QDI		0
107	HW-00001509	FAL5V006019	LCD BKT -R L5VC-QDI(FAL5V006,REV3A)		1
108	#N/A	FAL5V006	LCD BKT -R L5VC-QDI		0
109	M-MS-0808-9248	FCL7A001014	AL FOIL L7A(FCL7A001,REV3A)		2
110	B-PS-0204-0068	FCL5V001019	P/B MYLAR-DOWN L5VC(FCL5V001,REV3A)		1
111	#N/A	FCL5V001	P/B MYLAR-DOWN L5VC		0
112	M-MS-0808-9249	JXLM7002011	FOIL LM7S(JXLM7002,REV3B)		1
113	#N/A	JXLM7002	FOIL LM7S		0
114	M-SCW-0824-0813	MF30060BBJ6	SCREW F3.0*6-B(NI)		3
115	M-SCW-0824-0814	MM30060BBJ3	SCREW M3.0*6,B(NI)		1
116	M-SCW-0824-0815	MS35050ILV0	SCREW M3.5*5-I(NI),W		1
117	#N/A	M35050I1	SCREW M3.5*5-I(NI)W		0
118	M-SCW-0824-6802	MM30040IBJ9	SCREW M3.0*4.0-I(NI)		9
119	#N/A	MM25040IBJ1	SCREW M2.5*4.0-I(NI)		4
120	C-BS-0303-0513	24L5VSAVS01	L5VC STAND ASSY		1
121	#N/A	24L5VSA0	L5VC STAND ASSY		0
122	C-BS-0303-0514	EAL5V003010	BASE L5VC(EAL5V003,REV3A)		1
123	#N/A	EAL5V003	BASE L5VC		0
124	M-MS-0808-9250	FBL5V002014	BASE PLATE L5VC(FBL5V002,REV3A)		1
125	#N/A	FBL5V002	BASE PLATE L5VC		0
126	M-MS-0808-9251	GAL5V002013	RUBBER FOOT L5VC(GAL5V002,REV3A)		4
127	#N/A	GAL5V002	RUBBER FOOT L5VC		0
128	M-MS-0808-9252	GAL5V003010	RUBBER FOOT-FRONT L5VC (GAL5V003,REV3A)		1
129	#N/A	GAL5V003	RUBBER FOOT-FRONT L5VC		0
130	#N/A	MF40070BJ24	SCREW F4.0*7-B (BNI)		4
131	M-LB-0813-0942	HCL5V003011	STAND LABEL L5VC(HCL5V003,REV3A)		1
132	#N/A	HCL5V003	STAND LABEL		0
133	#N/A	25L5VCSVS32	L5VC CHASSIS ASSY(QDI)		1
134	A-VC-0101-0364	DDL5VCPC005	CABLE ASSY L5VC MB-VGA(14/15P,REV1A)		1
135	A-PC-0106-0314	DDL7VCPB101	CABLE ASSY L7VC POWER-MB(8P/8P,REV1A)		1
146	M-MS-0808-9234	DDL7VCTH004	CABLE ASSY L7VC BUTTON-MB(8P/10P,REV1A)		1
137	CB-00001503	DDL5TLIC101	CABLE ASSY L5TL-B MB-LCD(30P/20P,REV3A)		1
138	M-CV-0830-0282	EBL5V002014	HINGE CAP L5VC(EBL5V002,REV3A)		2
139	#N/A	EBL5V002	HINGE CAP L5VC		0
140	M-SCW-0824-0816	MM40100BC12	SCREW M4*10.0-B(NI,NYLOK)		4

Item	ViewSonic P/N	Reference P/N	Description	Location	Qty
141	M-SCW-0824-6797	MF40080BJ29	SCREW F4.0*8-B(BNI)		2
142	M-MS-0808-9237	GAL7V006014	RUBBER PLUG VESA L7VC(GAL7V006,REV3C)		4
143	#N/A	GAL7V006	RUBBER PLUG VESA L7VC		0
144	M-CV-0830-0284	GAL7V009013	RUBBER PLUG COVER L7VC(GAL7V009,REV3A)		2
145	#N/A	GAL7V009	RUBBER PLUG COVER L7VC		0
146	#N/A	26L5VPKVS00	L5VC PACKING ASSY		1
147	A-PC-0106-0224	DM333181G97	POWER CORD 3P 1.8M(USA)V04VS35001218000		1
148	#N/A	JXLM5003011	HANDLE LM5S(JXLM5003,REV 3B)		1
149	#N/A	JXLM5003	HANDLE LM5S		0
150	M-MS-0808-7710	HAL7E002013	PE BAG L7E(HAL7E002,REV3C)		1
151	#N/A	HAL7E002	PE BAG L7E		0
152	P-FM-0602-0861	HBL5V001018	END CAP(L) L5VC(HBL5V001,REV3A)		1
153	#N/A	HBL5V001	END CAP (L)		0
154	P-FM-0602-0862	HBL5V002014	END CAP(R) L5VC(HBL5V002,REV3A)		1
155	#N/A	HBL5V002	END CAP (R)		0
156	M-LB-0813-0933	HCL5V002015	ID LABEL-B L5VC(HCL5V002,REV3B)		1
157	#N/A	HCL5V002	ID LABEL-B		0
158	M-LB-0813-1043	HCL70021011	HI-POT LABEL L70L(HCL70021,REV3A)		1
159	#N/A	HCL70021	HI-POT LABEL		0
160	M-LB-0813-0745	HCL7V002011	SERIAL LEBAL(HCL7V002,REV3A)		1
161	#N/A	HCL7V002	SERIAL LEBAL		0
162	M-LB-0813-1042	HCL7V019011	CARTON LABEL L7VC(HCL7V019,REV3B)		1
163	#N/A	HCL7V019	CARTON LABEL		0
164	M-LB-0813-0747	HCL7V004013	CORE LABEL(HCL7V004,REV3A)		1
165	#N/A	HCL7V004	CORE LABEL		0
166	P-BX-0601-0952	HFL5V002018	CARTON-B L5VC(HFL5V002,REV3A)		1
167	#N/A	HFL5V002	CARTON-B		0
168	A-CD-VE510B	HGL5V002019	USER MANUAL &CD ROM-B L5VC(HGL5V002,R3A)		1
169	#N/A	JXL5V002015	LCD FILM-M L5VC(JXL5V002,REV3A)		1
170	#N/A	HFL5V003014	SPACE PLATE L5VC(HFL5V003,REV3A)		0.016
171	#N/A	HFL5V003	SPACE PLATE		0

BOM LIST (VE510s-1)

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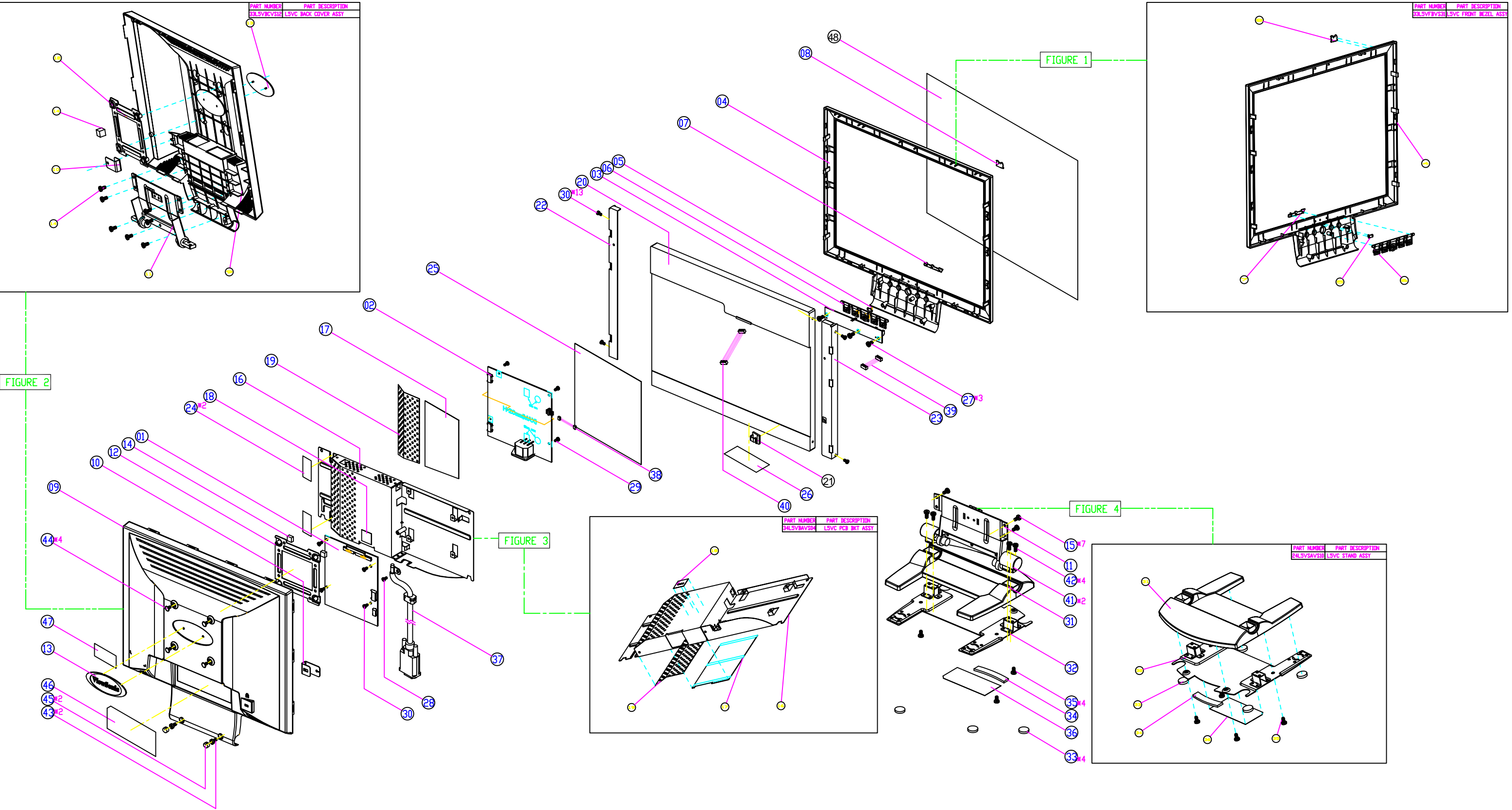
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Item	ViewSonic P/N	Reference P/N	Description	Location	Qty
1	#N/A	1L5VCZLVSC8	L5VC LCD MONITOR(QDI,TWO TONE)		
2	B-00000941	29L9IMB0021	L9I M/B ASSY(FOR L5VC-2 REALTEK)		1
3	#N/A	39L9IDP0013	L9I M/B DIP ASSY(FOR L5VC-2 REALTEK)		1
4	#N/A	41L9ISS0011	L9I M/B S/S ASSY(FOR L5VC-2 REALTEK)		1
5	#N/A	DA0L9IMB2B1	PCB(M/B) L9I MB(2L,12.5*12 REV.B)		1
6	#N/A	L9I206-01	DA0L9IMB2B1 L9I MB GERBER FILE	U7	0
7	#N/A	AJD2013MF07	IC(128P) RTD2013(95MHZ,QFP)	U8	1
8	E-IC-0401-2651	AKE3A8S0Y01	IC,EEPROM(8P) 24LC16B/SN(2K*8,100KHZ)	I1	1
9	#N/A	AJ00312VP18	IC(44P) MTV312MV64AJ(12MHZ,PLCC)	U10	1
10	#N/A	AL001739001	IC(3P) AIC1739-25CX(SOT89)	U2	1
11	E-IC-0401-2654	AL001563001	IC(8P) AIC1563CS(SOP8)	Q4	1
12	#N/A	BAN70020Z13	TRANSISTOR MOSFET 2N7002E(60V,250MA)	Q8	1
13	#N/A	BAM23010Z05	TRANSISTOR MOSFET SI2301DS(-12V,-2.3A)	Q9	1
14	#N/A	BA001430Z22	TRANSISTOR SMD DTC143EUA(50V,100MA)	Q2,Q3,Q12,Q13,Q18,Q19	1
15	#N/A	BA039060Z01	TRANSISTOR,SMD MMBT3906(40V,200MA)	Q1	6
16	E-Q-0402-1580	BAM9410YZ02	TRANSISTOR MOSFET SI9410DY(30V,7A)	D1,D2	1
17	E-D-0403-2082	BC1SS355Z05	DIODE SMD 1SS355(80V,100MA)	D3	2
18	E-D-0403-2084	BCRB081LZ02	DIODE SMD RB081L-20(20V,5.0A,VF:0.45V)	D30,D31	1
19	#N/A	BCLS4148AZ9	DIODE,SMD RLS4148	D34,D35	2
20	#N/A	BDGZ5226Z03	DIODE ZENER SMD MMGZ5226B(3.3V)	C26,C28,C33,C48,C87,C88	2
21	#N/A	CH02206J909	CAPACITOR CHIP 22P 50V(+/-5%,NPO,0603)	C9	6
22	#N/A	CH11206J908	CAPACITOR CHIP 120P 50V(+/-5%,NPO,0603)	C10,C67,C68	1
23	#N/A	CH22206K917	CAP CHIP 2200P 50V(+/-10%,X7R,0603)	C1,C3,C4,C5,C7,C8,C11,C12,C35,C36,C37,C38,C39,C40,C41,C42,C43,C44,C45,C47,C49,C51,C52,C54,C55,C56,C57,C58,C60,C61,C62,C63,C64,C69,C75,C76,C77,C78,C79,C80,C81,C82,C85,C100	3
24	#N/A	CH41004Z931	CAP CHIP 0.1U,25V(+80-20%,Y5V,0603)	C13	44
25	#N/A	CH51004MA32	CAPACITOR CHIP 1UF 25V(+/-20%,Y5V,0805)	C2,C102	1
26	#N/A	CH51001K991	CAP CHIP 1U 6.3V(+/-10%,X5R,0603)	C16,C18,C19,C21,C22,C23,C25	2
27	#N/A	CH34703K916	CAP CHIP 0.047UF 16V(+/-10%,X7R,0603)	FUSE1,L22,L29,R2	7
28	#N/A	CS00006J205	RESISTOR CHIP 0 1/4W+-5%(3216)	L8,L9,L10,L31,R8,R166	4
29	#N/A	CS00003J900	RESISTOR CHIP 0 1/10W+-5%(0603)	L12,L13,L14,L15,L19,L28	6
30	#N/A	CX201209805	EMI FILTER CHIP FBM-11-201209-121A40	R4,R164	6
31	#N/A	CS04703J906	RES CHIP 47 1/10W +-5%(0603)	R24,R27,R32	2
32	#N/A	CS07503F905	RESISTOR CHIP 75 1/10W +-1%(1608)	R23,R25,R26,R28,R29,R31,R33,R34,R36,R66,R83,R92,R124,R125	3
33	#N/A	CS11003J904	RESISTOR CHIP 100 1/10W +-5%(0603)	R102,R103	14
34	#N/A	CS12203J904	RES CHIP 220 1/10W +-5%(0603)	R12	2
35	#N/A	CS22203F904	RES CHIP 2.2K 1/10W,+-1%(0603)	R9,R13,R16,R56,R95,R96,R97,R98,R99,R100,R101	1
36	#N/A	CS21003J906	RES CHIP 1K 1/10W +-5%(0603)	R35,R37,R38,R80,R81	11
37	#N/A	CS22003J909	RES CHIP 2K 1/10W +-5%(0603)	R11	5
38	#N/A	CS23603F901	RESISTOR CHIP 3.6K, 1/10W,+-1%(0603)	R18,R39,R40,R54,R58,R82,R93,R108,R109,R110,R111,R114,R115,R143,R144,R147,R163	1
39	#N/A	CS24703F908	RESISTOR CHIP 4.7K 1/10W+-1%(0603)	R41	17
40	#N/A	CS26803J909	RESISTOR CHIP 6.8K 1/10W +-5%(1608)	L3,R10,R68,R70,R78,R79	1
41	#N/A	CS31003J908	RES CHIP 10K 1/10W +-5%(0603)	R84,R85,R87,R88,R89,R90,R91	6
42	#N/A	CS33303J904	RESISTOR CHIP 33K 1/10W +-5%(0603)	R67	7
43	#N/A	CS38203J904	RES CHIP 82K 1/10W +-5%(0603)	R7	1
44	#N/A	CS42403F905	RESISTOR CHIP 240K 1/10W,+-1%(0603)	R5	1
45	#N/A	CS43303J906	RES CHIP 330K 1/10W +-5%(0603)	R30	1
46	#N/A	CS51003J901	RESISTOR CHIP 1M 1/10W +-5% (1608)	C34,C46,C50,C53,C59,C84,EC3,EC6	1
47	#N/A	CC62204MD23	CAP ELEC 22U 25V(+/-20%,105C,5*11,2000HR)	C70	8
48	#N/A	CC71004MD68	CAP ELEC 100U 25V +-20%,105C,6*11,LESR	C6,EC4	1
49	#N/A	CC73303MD51	CAP ELEC 330U 16V(+/-20%,105C,8*11,2000HR)	L2	2
50	E-L-0407-1563	DC04725K002	CHOKE COIL 47UH(2.5A,+-10%,T07473)	Y1	1
51	#N/A	BG624576031	CRYSTAL DIP 24.576MHZ(30PPM,20PF,49/US)	Y2	1
52	#N/A	BG611059319	CRYSTAL DIP 11.0592MHZ(+/-30PPM,49/US)	CN1	1
53	#N/A	DFHD08MS439	CONN DIP HEADER 8P 2R MS(P2.54,H6.0)	CN3	1
54	#N/A	DFHD14MS264	CONN DIP HEADER 14P 2R MS(P2.0,H6.0)	CN5	1
55	M-MS-0808-9809	DFHD30MR259	CONN DIP HEADER 30P 2R MR(P2.0,H4.0)	CN6	1
56	M-MS-0808-9810	DFHD10MR316	CONN DIP HEADER 10P 1R MR(P2.0,H4.1)		1
57	#N/A	AZL5VCZG001	L5VC SW BIOS(GBM) IMAGE REALTEK CHIP		1
58	B-00001505	AS02B012297	ADP/INV,SLS0326D12357,90-264V AC		1

Item	ViewSonic P/N	Reference P/N	Description	Location	Qty
59	B-CB-0206-0178	22L5VBB0003	L5VC BUTTON/B ASSY		1
60	#N/A	DAL5VCTB1A3	PCB(BUTTON) L5VC TB(1L,117*22,REVA)	CN1	1
61	#N/A	DFHD08MR301	CONN DIP HEADER 8P 1R MR(P2.0,H4.1)	LED1	1
62	#N/A	BEYG0013DA3	LED(DIP) YELLOW/GREEN(L-3WYGW)	SW1,SW2,SW3,SW4,SW5	1
63	#N/A	DHP0002B205	SWITCH PUCH BUTTON(PT-002-B2,50MA,12V)		5
64	#N/A	23L5VLAVS54	L5VC LCD MODULE ASSY(QDI/SILVER)		1
65	C-00001123	32L5VFBV557	L5VC FRONT BEZEL ASSY(QDI/SILVER)		1
66	#N/A	32L5VFB5	L5VC FRONT BEZEL ASSY(QDI/SILVER)		0
67	C-00001506	EAL5V005021	LCD BEZEL L5VC-QDI(EAL5V005,R3A)SILVER		1
68	#N/A	EAL5V005	LCD BEZEL L5VC-QDI		0
69	M-MS-0808-9242	EBL7V021014	LENS L7VC(EBL7V021,REV3A)		1
70	#N/A	EBL7V021	LENS L7VC		0
71	PL-BT-0706-0161	EBL5V001018	CONTROL BUTTON L5VC(EBL5V001,REV3A)		1
72	#N/A	EBL5V001	CONTROL BUTTON L5VC		0
73	M-MS-0808-9243	FEL7V003019	LOGO FRONT-VSC-38MM L7VC(FEL7V003,REV3A)		1
74	#N/A	FEL7V003	LOGO FRONT-VSC-38MM L7VC		0
75	M-MS-0808-9244	FEL7V004015	BIRD LOGO-10MM L7VC(FEL7V004,REV3A)		1
76	C-BC-0302-0584	33L5VBCVS12	L5VC BACK COVER ASSY(BLACK)		1
77	#N/A	33L5VBC1	L5VC BACK COVER ASSY(BLACK)		0
78	M-CV-0830-0286	EAL5V002021	LCD COVER L5VC(EAL5V002,REV3A)BLACK		1
79	#N/A	EAL5V002	LCD COVER L5VC		0
80	M-CV-0830-2484	FBL7V007011	KENSINGTON CAP(FBL7V007,REV3A)		1
81	#N/A	FBL7V007	KENSINGTON CAP		0
82	#N/A	RH2C0060801	STEEL SGCC 1220*61*0.8T		9
83	M-MS-0808-9245	FBL5V001018	HINGE ASSY L5VC(FBL5V001,REV3A)		1
84	#N/A	FBL5V001	HINGE ASSY L5VC		0
85	M-BK-0805-0066	FBL5V003011	VESA BKT L5VC(FBL5V003,REV3A)		1
86	M-BK-0805-0066	FBL5V003	VESA BKT L5VC		0
87	M-MS-0808-9253	FEL7V005011	LOGO PLATE ELLIPSE L7VC(FEL7V005,REV3A)		1
88	#N/A	FEL7V005	LOGO PLATE ELLIPSE		0
89	M-MS-0808-9246	GBLM7003017	GASKET-3 LM7S(GBLM7003,REV3A)		1
90	#N/A	GBLM7003	GASKET-3 LM7S		0
91	M-SCW-0824-6797	MF40080BJ29	SCREW F4.0*8-B(BNI)		7
92	M-BK-0805-0065	34L5VBAVS04	L5VC PCB BKT ASSY		1
93	#N/A	34L5VBA0	L5VC PCB BKT ASSY		0
94	M-BK-0805-0067	FAL5V001017	PCB BRACKET L5VC(FAL5V001,REV3A)		1
95	M-BK-0805-0067	FAL5V001	PCB BRACKET L5VC		0
96	B-PS-0204-0067	FCL5V002015	P/B MYLAR-UP L5VC(FCL5V002,REV3A)		1
97	#N/A	FCL5V002	P/B MYLAR-UP L5VC		0
98	M-LB-0813-0894	HCL7V005010	WARNING LABEL, INVERTOR(HCL7V005,3A)		1
99	#N/A	HCL7V005	WARNING LABEL, INVERTOR		0
100	B-SB-0221-0610	FCL5V003011	INV MYLAR L5VC(FCL5V003,REV3A)		1
101	#N/A	FCL5V003	INV MYLAR L5VC		0
102	E-00000942	AA150XQQ001	LCD(TFT) GB150XQQ3-A000(15",1024*768)		1
103	E-00001504	AA15XL02034	LCD(TFT) QD15XL02 REV:02(15",1024*768)		1
104	M-MS-0808-9247	EBL70023013	WIRE MOUNTS L70L-E(EBL70023,REV3A)		1
105	#N/A	EBL70023	WIRE MOUNTS L70L-E		0
106	HW-00001508	FAL5V007015	LCD BKT -L L5VC-QDI(FAL5V007,REV3A)		1
107	#N/A	FAL5V007	LCD BKT -L L5VC-QDI		0
108	HW-00001509	FAL5V006019	LCD BKT -R L5VC-QDI(FAL5V006,REV3A)		1
109	#N/A	FAL5V006	LCD BKT -R L5VC-QDI		0
110	M-MS-0808-9248	FCL7A001014	AL FOIL L7A(FCL7A001,REV3A)		2
111	B-PS-0204-0068	FCL5V001019	P/B MYLAR-DOWN L5VC(FCL5V001,REV3A)		1
112	#N/A	FCL5V001	P/B MYLAR-DOWN L5VC		0
113	M-MS-0808-9249	JXLM7002011	FOIL LM7S(JXLM7002,REV3B)		1
114	#N/A	JXLM7002	FOIL LM7S		0
115	M-SCW-0824-0813	MF30060BBJ6	SCREW F3.0*6-B(NI)		3
116	M-SCW-0824-0814	MM30060BBJ3	SCREW M3.0*6,B(NI)		1
117	M-SCW-0824-0815	MS35050ILV0	SCREW M3.5*5-I(NI),W		1
118	#N/A	M35050I1	SCREW M3.5*5-I(NI)W		0
119	M-SCW-0824-6802	MM30040IBJ9	SCREW M3.0*4.0-I(NI)		9
120	#N/A	MM25040IBJ1	SCREW M2.5*4.0-I(NI)		4
121	C-BS-0303-0512	24L5VSAVS10	L5VC STAND ASSY(BLACK)		1
122	#N/A	24L5VSA1	L5VC STAND ASSY(BLACK)		0
123	C-BS-0303-0515	EAL5V003028	BASE L5VC(EAL5V003,REV3A)BLACK		1
124	#N/A	EAL5V003	BASE L5VC		0
125	M-MS-0808-9250	FBL5V002014	BASE PLATE L5VC(FBL5V002,REV3A)		1
126	#N/A	FBL5V002	BASE PLATE L5VC		0
127	M-MS-0808-9251	GAL5V002013	RUBBER FOOT L5VC(GAL5V002,REV3A)		4
128	#N/A	GAL5V002	RUBBER FOOT L5VC		0
129	M-MS-0808-9252	GAL5V003010	RUBBER FOOT-FRONT L5VC (GAL5V003,REV3A)		1
130	#N/A	GAL5V003	RUBBER FOOT-FRONT L5VC		0
131	#N/A	MF40070BJ24	SCREW F4.0*7-B (BNI)		4
132	M-LB-0813-0942	HCL5V003011	STAND LABEL L5VC(HCL5V003,REV3A)		1
133	#N/A	HCL5V003	STAND LABEL		0

Item	ViewSonic P/N	Reference P/N	Description	Location	Qty
134	#N/A	25L5VCSVS41	L5VC CHASSIS ASSY(QDI)BLACK		1
135	A-VC-0101-0364	DDL5VPCPC005	CABLE ASSY L5VC MB-VGA(14/15P,REV1A)		1
146	A-PC-0106-0314	DDL7VCPB101	CABLE ASSY L7VC POWER-MB(8P/8P,REV1A)		1
137	M-MS-0808-9234	DDL7VCTH004	CABLE ASSY L7VC BUTTON-MB(8P/10P,REV1A)		1
138	CB-00001503	DDL5TLLC101	CABLE ASSY L5TL-B MB-LCD(30P/20P,REV3A)		1
139	M-CV-0830-0282	EBL5V002014	HINGE CAP L5VC(EBL5V002,REV3A)		2
140	#N/A	EBL5V002	HINGE CAP L5VC		0
141	M-SCW-0824-0816	MM40100BCI2	SCREW M4*10.0-B(NI,NYLOK)		4
142	M-SCW-0824-6797	MF40080BJ29	SCREW F4.0*8-B(BNI)		2
143	M-MS-0808-9236	GAL7V008017	RUBBER PLUG VESA/BK L7VC(GAL7V008,R3B)		4
144	#N/A	GAL7V008	RUBBER PLUG VESA/BK L7VC		0
145	M-CV-0830-0283	GAL7V010011	RUBBER PLUG COVER /BK L7VC(GAL7V010,R3A)		2
146	#N/A	GAL7V010	RUBBER PLUG COVER /BK L7VC		0
147	#N/A	26L5VPKVS18	L5VC PACKING ASSY(TWO TONE)		1
148	A-PC-0106-0224	DM333181G97	POWER CORD 3P 1.8M(USA)V04VS35001218000		1
149	#N/A	JXLM5003011	HANDLE LM5S(JXLM5003,REV 3B)		1
150	#N/A	JXLM5003	HANDLE LM5S		0
151	M-MS-0808-8981	HAL7V001012	EPE BAG L7V(HAL7V001,REV3A)		1
152	#N/A	HAL7V001	EPE BAG		0
153	P-FM-0602-0861	HBL5V001018	END CAP(L) L5VC(HBL5V001,REV3A)		1
154	#N/A	HBL5V001	END CAP (L)		0
155	P-FM-0602-0862	HBL5V002014	END CAP(R) L5VC(HBL5V002,REV3A)		1
156	#N/A	HBL5V002	END CAP (R)		0
157	M-LB-0813-0932	HCL5V001019	ID LABEL-S L5VC(HCL5V001,REV3B)		1
158	#N/A	HCL5V001	ID LABEL-S		0
159	M-LB-0813-1043	HCL70021011	HI-POT LABEL L70L(HCL70021,REV3A)		1
160	#N/A	HCL70021	HI-POT LABEL		0
161	M-LB-0813-0745	HCL7V002011	SERIAL LEBAL(HCL7V002,REV3A)		1
162	#N/A	HCL7V002	SERIAL LEBAL		0
163	M-LB-0813-1042	HCL7V019011	CARTON LABEL L7VC(HCL7V019,REV3B)		1
164	#N/A	HCL7V019	CARTON LABEL		0
165	M-LB-0813-0747	HCL7V004013	CORE LABEL(HCL7V004,REV3A)		1
166	#N/A	HCL7V004	CORE LABEL		0
167	P-BX-0601-0951	HFL5V001011	CARTON-S L5VC(HFL5V001,REV3A)		1
168	#N/A	HFL5V001	CARTON-S		0
169	A-CD-VE510S	HGL5V001012	USER MANUAL &CD ROM-S L5VC(HGL5V001,R3A)		1
170	#N/A	JXL5V002015	LCD FILM-M L5VC(JXL5V002,REV3A)		1
171	#N/A	HFL5V003014	SPACE PLATE L5VC(HFL5V003,REV3A)		0.016
172	#N/A	HFL5V003	SPACE PLATE		0

8. Exploded Diagram and Spare Parts List



EXPLODED PARTS LIST (VE510s-1)

ViewSonic Model Number: VS10040

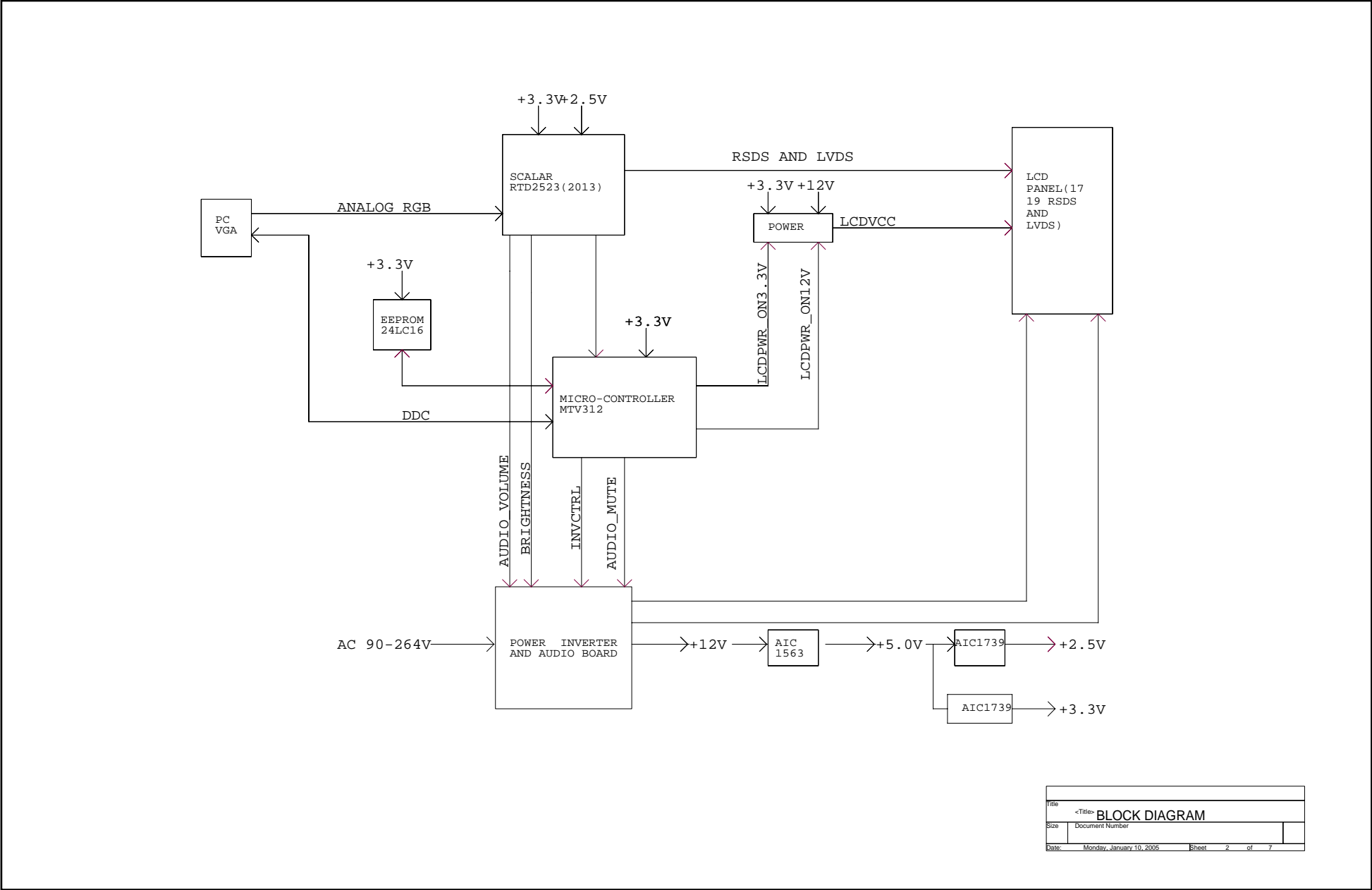
Rev: 1a

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	B-00000941	29L9IMB0021	L5VC M/B SSY (QDI)	1
2	B-00001505	AS02B012297	ADP/INV, SLS0326D12057, 90-264 VA	1
3	B-CB-0206-0178	22L5VBB0003	L5VC BUTTON/B ASSY	1
4	C-00001511	EAL5V005012	LCD BEZEL L5VC	1
5	M-MS-0808-9242	EBL7V021014	LENS L7VC	1
6	PL-BT-0706-0161	EBL5V001018	CONTROL BUTTON L5VC	1
7	M-MS-0808-9243	FEL7V003019	LOGO FRONT-VSC-38MM L7VC	1
8	M-MS-0808-9244	FEL7V004015	BIRD LOGO-10MM L7VC	1
9	M-CV-0830-0285	EAL5V002013	LCD COVER L5VC	1
10	M-CV-0830-2484	FBL7V007011	KENSINGTON CAP	1
11	M-MS-0808-9245	FBL5V001018	HINGE ASSY L5VC	1
12	M-BK-0805-0066	FBL5V003011	VESA BKT L5VC	1
13	M-MS-0808-8718	EBL7V003016	LOGO PLATE	1
14	M-MS-0808-9246	GBLM7003017	GASKET-3 LM7S	1
15	M-SCW-0824-6797	MF40080BJ29	SCREW F4.0*8-B(BNI)	7
16	M-BK-0805-0067	FAL5V001017	PCB BRACKET L5VC	1
17	B-PS-0204-0067	FCL5V002015	P/B MYLAR-UP L5VC	1
18	M-LB-0813-0894	HCL7V005010	WARNING LABEL, INVERTER	1
19	B-SB-0221-0610	FCL5V003011	INV MYLAR L5VC	1
20	E-00001504	AA15XL02034	LCD(TFT) QDI QD15XL02 V.2	1
21	M-MS-0808-9247	EBL70023013	WIRE MOUNTS L70L-E	1
22	HW-00001508	FAL5V007015	LCD BKT-L L5VC	1
23	HW-00001509	FAL5V006019	LCD BKT-R L5VC	1
24	M-MS-0808-9248	FCL7A001014	AL FOIL L7A	2
25	B-PS-0204-0068	FCL5V001019	P/B MYLAR-DOWN L5VC	1
26	M-MS-0808-9249	JXLM7002011	FOIL LM7S	1
27	M-SCW-0824-0813	MF30060BBJ6	SCREW M3.0*6, B(NI)	3
28	M-SCW-0824-0814	MM30060BBJ3	SCREW M3.0*6, B(NI)	1
29	M-SCW-0824-0815	MS35050ILV0	SCREW M3.5*5-I(NI),W	1
30	M-SCW-0824-6802	MM30040IBJ9	SCREW M3.0*4.0-I(NI)	13
31	C-BS-0303-0514	EAL5V003010	BASE L5VC	1
32	M-MS-0808-9250	FBL5V002014	BASE PLATE L7VC	1
33	M-MS-0808-9251	GAL5V002013	RUBBER FOOT L5VC	4
34	M-MS-0808-9252	GAL5V003010	RUBBER FOOT-FRONT L5VC	1
35	M-SCW-0824-6797	MF40080BJ29	SCREW F4.0*8-B(BNI)	4
36	M-LB-0813-0942	HCL5V003011	STAND LABEL L5VC	1
37	A-VC-0101-0364	DDL5VCPC005	CABLE ASSY L5VC MB-VGA	1
38	A-PC-0106-0314	DDL7VCPB101	CABLE ASSY L7VC POWER-MB	1
39	M-MS-0808-9234	DDL7VCTH004	CABLE ASSY L7VC BUTTON-MB	1
40	CB-00001503	DDL5TLLC101	CABLE ASSY L5VC MB-LCD	1
41	M-CV-0830-0282	EBL5V002014	HINGE CAP L5VC	2
42	HW-00001510	MM40100BCI2	SCREW M4*10.0-B(NI, NYLOK)	4
43	M-SCW-0824-6797	MF40080BJ29	SCREW F4.0*8-B(BNI)	2
44	M-MS-0808-9236	GAL7V008017	RUBBER PUG VESA/BKT L7VC	4
45	M-CV-0830-0284	GAL7V009013	RUBBER PLUG COVER L7VC	2
46	M-LB-0813-0932	HCL5V001019	ID LABEL-S L5VC	1
47	M-LB-0813-0745	HCL7V002011	SERIAL LABEL	1
48	M-MS-0808-9256	JXL5V001019	LCD FILM L5VC	1

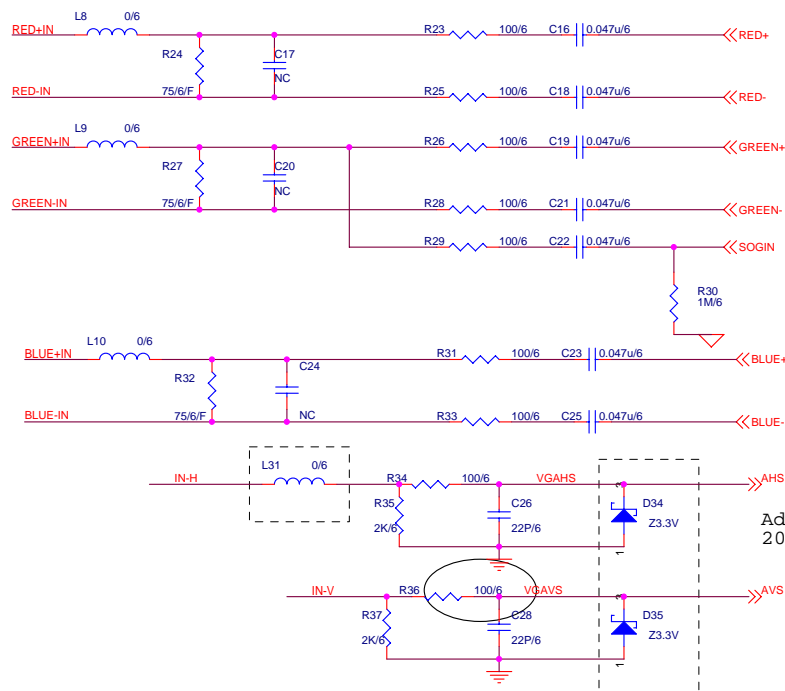
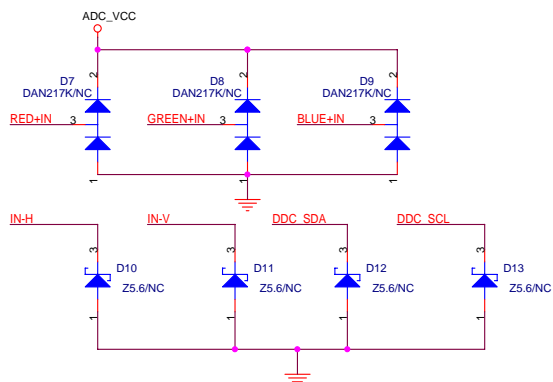
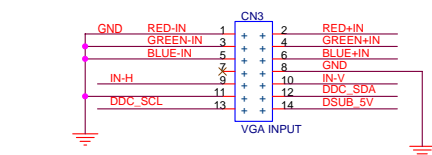
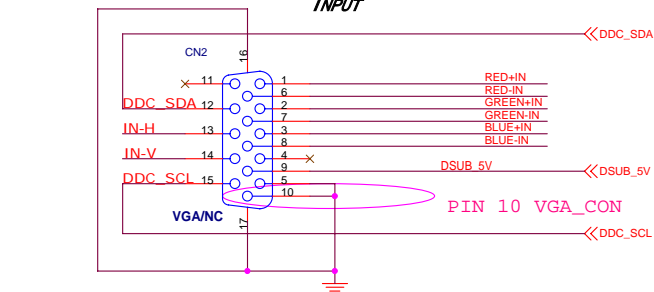
9. Block Diagram



10. Schematic Diagrams



PAGE 1 VGA INPUT

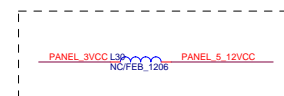
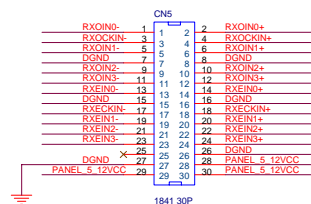
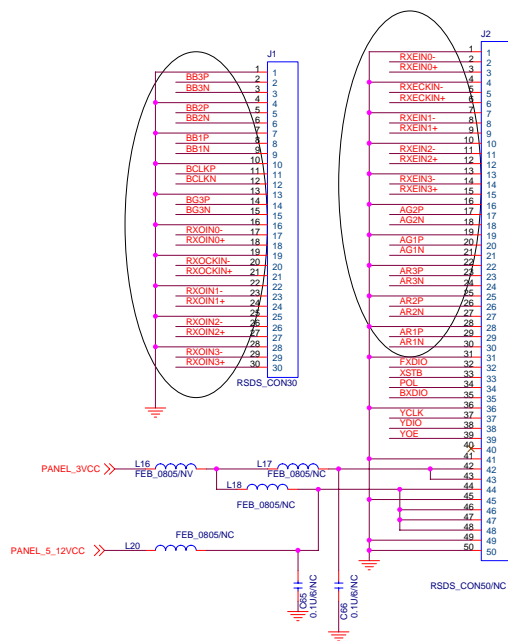
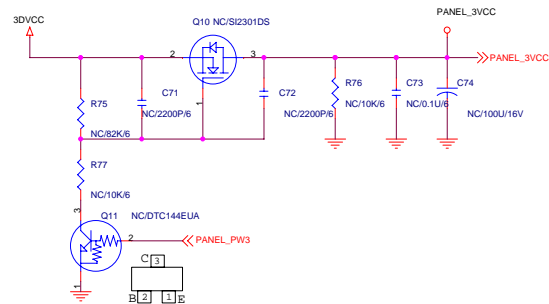
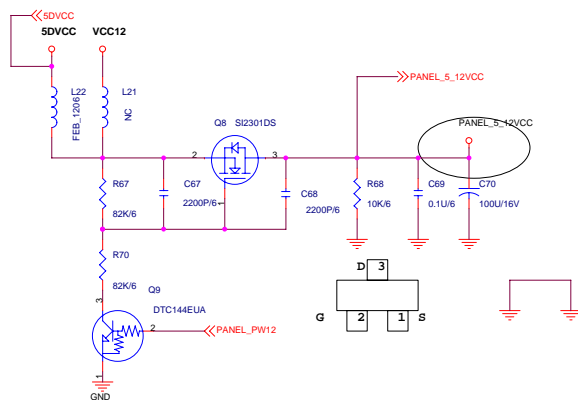


DEL L11,C32,U6,R51,R52 2004/6/17

Add D34,D35,L31
2004/6/17



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VGA INPUT			
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	DISPLAY	B	
Date:	Tuesday, February 22, 2005	Sheet	3 of 8

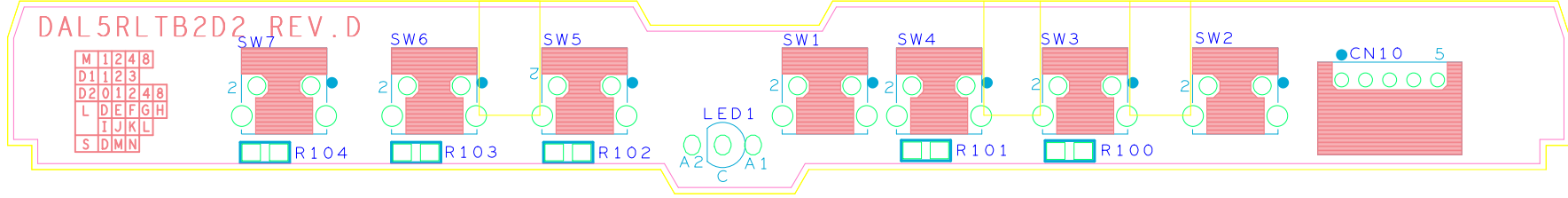
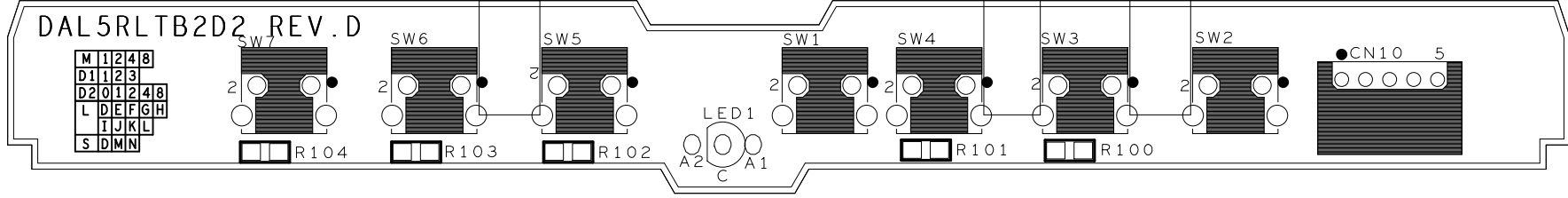


If panel is 3.3V LVDS IF, L30 must add the part 2004/4/14

Title		<Title> PANEL INTERFACE	
Size	Document Number		
Date	Monday, January 10, 2005	Sheet	6 of 7

Main Board





****Reader's Response****

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Thank you in advance for your feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content of the **VE510s/b-1** Service Manual?

<i>Unit</i>	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Bad</i>
1. Precautions and Safety Notices				
2. Specification				
3. Front Panel Function Control Description				
4. Circuit Description				
5. Adjustment Procedure				
6. Troubleshooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram and Spare Parts List				
9. Block Diagram				
10. Schematic Diagrams				
11. PCB Layout Diagrams				

B. Are you satisfied with the **VE510s/b-1** Service Manual?

<i>Item</i>	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Bad</i>
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any other opinions or suggestions regarding this service manual?

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