

Service Manual

ViewSonic VE920m-1

VE920mb-1

Model No. VS10931

19" Color TFT LCD Display

(VE920m-1_VE920mb-1_SM Rev. 1b Aug. 2006)

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Revision History

Revision	SM Editing Date	ECR Number	Description of Changes	Editor
1a	05/26/2006		Initial release	J. Chang
1b	8/28/2006		Add RSPL BOM EPL for VE920mb-1	J. Chang

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1. Precautions and Safety Notices

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



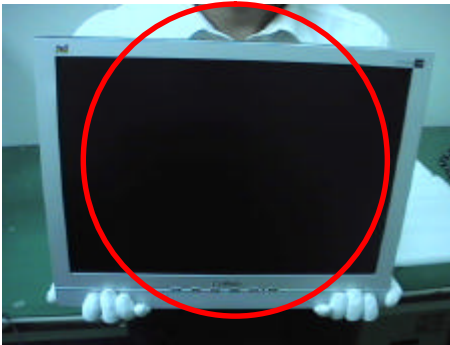

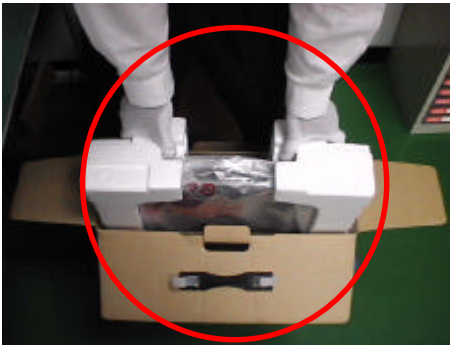



Care should be taken while servicing this LCD display. Because of the high voltage used in the inverter circuit, the voltage is exposed in such areas as the associated transformer circuits.

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

Correct methods :	Incorrect Methods :
<p>Only touch the metal-frame of the panel or the front cover of the monitor.</p> <p>Do not touch the surface of the polarizer .</p>	<p>Surface of the panel is pressed by fingers & this may cause “ MURA “</p>
	
	
<p>Take out the monitor with cushion</p>	<p>Take out the monitor by grasping the LCD panel. That may cause “ MURA“.</p>
	
<p>Place the monitor on a clean & soft foam pad .</p>	<p>Place the monitor on foreign objects . That could scratch the surface of panel</p>
	

2. Specification

Introduction

FEATURES		
TFTLCD PANEL	Size	19"
	Luminance (Typ, cd/m ²)	280 cd/m ²
	Contrast Ratio (Typ)	450:1
	Colors (6 bit + 2 bit FRC)	16.2 M colors
	Response Time (Typ)	8 ms
	Viewing Angle (H/V)	150 ° / 130 °
	Recommend resolution	1280x1024@60Hz
Input Signal	Analog (75ohms, 0.7/1.0 Vp-p)	Yes
	Digital	Yes
Sync Compatibility	Separate Sync	Yes
	Composite Sync	No
	Sync on Green	No
Compatibility	PC	Yes
	Power Mac	Yes
	TV Box (NextVision 6)	Yes
Power Voltage	AC 100-240V, 50/60Hz	Yes
Power Consumption	On Mode(Max / Typ)	58W
	Active Off Mode (Max)	2W
Audio	1.2 W (audio), 2W*2 (speaker)	Yes
Ergonomics	Tilt (20 ° to -5 °)	Yes
	Swivel	No
	Pivot	No
	Height Adjust	No
OSD Control	[◀ X] [1] [] [] [2] [⏻]	Yes
Dimension	Physical (W x H x D mm)	423 x 434 x 221 (mm) 16.7 x 17.1 x 8.7 (in)
	Package (W x H x D mm)	474 x 475 x 184 (mm) 17.6 x 18.7 x 7.2 (in)
Weight	Physical (Net kg/lb)	5.2 kg / 11.5 lb
	Package (Gross Kg/lb)	6.8 kg / 15.0 lb
Operating Condition	Temperature (/)	41 -95 /+5 -+35
	Humidity (%)	20 % - 80 %
Storage Condition	Temperature (/)	-4 -131 /-20 -55
	Humidity (%)	20 % - 85 %
Regulation	UL, cUL, FCC-B, CB, CE, NOM, TUV/GS, TUV ERGO (covers ISO13406-2 & MPRII), TCO03, GOST-R + 20 ORIGINAL COPIES HYGIENIC, SASO, PCBC, VCCI, BSMI, CCC, (PSB), (C-TICK), TUV-S, Green Mark, energy star HYGIENIC, SASO, PCBC, VCCI, BSMI, CCC, (PSB), (C-TICK), TUV-S, Green Mark, energy star	

GENERAL specification

Test Resolution & Frequency	1280x1024 @ 60Hz
Test Image Size	Full Size
Contrast and Brightness Controls	Factory Default: Contrast = 70%, Brightness = 100%

VIDEO INTERFACE

Analog Input Connector	DB-15 (Analog), refer the appendix A
Digital Input Connector	N/A
Default Input Connector	Defaults to the first detected input
Video Cable Strain Relief	Equal to twice the weight of the monitor for five minutes
Video Cable Connector DB-15 Pin out	Compliant DDC 2B
Video Signals	1. Video RGB (Analog) 2. DVI (Digital) 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 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, 1152 x 870, 1280 x 720, 1280 x 960, 1280 x 1024 * The image vertical size might not be full screen. But the image vertical position should be at the center.
Exclusions	Not compatible with interlaced video

POWER SUPPLY

Power Supply (Adapter)	Part Number: 27-D003115
Input Voltage Range	100 to 240 VAC
Input Frequency Range	50 to 60 Hertz
Short Circuit Protection	OUTPUT CAN BE SHORTED WITHOUT DAMAGE
Over Current Protection	3.3~4.5 A typical at 5 VDC
Leakage Current	3.5 MA (MAX) AT 254VAC / 60HZ
Efficiency	80 % TYPICAL AT 115 VAC FULL LOAD
Fuse	INTERNAL AND NOT USER REPLACEABLE
Power Dissipation	58 (Max) Watt
Max Input AC Current	1.8 A RMS @ 100 VAC,
Inrush Current (Cold Start)	120A(MAX) @ 240VAC , 50HZ
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 EN61000-4-4 ±2KV TRANSIENT TEST WITH NO DAMAGE

Power Supply Line Surge Immunity	Shall be able to withstand $\pm 2\text{KV}$ (L-L) and $\pm 2.3\text{KV}$ (L-PE) with no damage
Power Supply Missing Cycle Immunity	Shall be able to function properly, without reset or visible screen artifacts, when $\frac{1}{2}$ 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
US Type Power Cable	Separate 3-prong NEMA 5-15P type plug. Length = 1.8m. Connects to display. Color = Black
European Type Power Cable	Schuko CEE7-7 type plug. Length = 1.8m, Connects to display. Color = Black
CCC Type Power Cable	Separate 3-prong type plug. Length = 1.8m. Connects to display. Color = Black
Power Saving Operation(Method)	VESA DPMS Signaling
Power Consumption	ON Mode < 58 W (max) ACTIVE OFF < 2 W
Recovery Time	ON Mode = N/A, ACTIVE OFF < 3 sec

2.5 ELECTRICAL REQUIREMENT

Horizontal / Vertical Frequency

Horizontal Frequency	30 – 82 kHz
Vertical Refresh Rate	50 – 85* Hz.
Maximum Pixel Clock	135 MHz (EDID file is 140MHz)
Sync Polarity	Independent of sync polarity.

Timing Table

Item	Timing	Analog	Digital
1	640 x 350 @ 70Hz, 31.5kHz	Yes	No
2	640 x 400 @ 60Hz, 31.5kHz	Yes*	No
3	640 x 400 @ 70Hz, 31.5kHz	Yes	No
4	640 x 480 @ 60Hz, 31.5kHz	Yes	No
5	640 x 480 @ 67Hz, 35.0kHz	Yes	No
6	640 x 480 @ 72Hz, 37.9kHz	Yes	No
7	640 x 480 @ 75Hz, 37.5kHz	Yes	No
8	640 x 480 @ 85Hz, 43.27kHz	Yes	No
9	720 x 400 @ 70Hz, 31.5kHz	Yes	No
10	800 x 600 @ 56Hz, 35.1kHz	Yes	No
11	800 x 600 @ 60Hz, 37.9kHz	Yes	No
12	800 x 600 @ 75Hz, 46.9kHz	Yes	No
13	800 x 600 @ 72Hz, 48.1kHz	Yes	No
14	800 x 600 @ 85Hz, 53.7kHz	Yes	No
15	832 x 624 @ 75Hz, 49.7kHz	Yes	No
16	1024 x 768 @ 60Hz, 48.4kHz	Yes	No
17	1024 x 768 @ 70Hz, 56.5kHz	Yes	No
18	1024 x 768 @ 72Hz, 58.1kHz	Yes	No
19	1024 x 768 @ 75Hz, 60.0kHz	Yes	No
20	1024 x 768 @ 85Hz, 68.67kHz	Yes	No
21	1152 x 870 @ 75Hz, 68.7kHz	Yes	No
22	1280 x 1024 @ 60Hz, 63.4kHz	Yes	No
23	1280 x 1024 @ 75Hz, 79.97kHz	Yes	No
24	1280x 720 @ 60Hz, 45kHz (HDTV)	Yes	No

Note 1: When Vertical frequency at 85Hz or resolution, the vertical image size might not be full screen. But the vertical image position should be at the center.

Note2: *: The vertical image size might not be full screen.

Primary Presets

1280x1024 @ 60Hz

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 : 3 seconds (Max), excluding “Auto Adjust” time

Under DOS mode (640 x 350, 720 x 400 & 640 x 400), there is no “Auto Adjust” feature.

The monitor needs to do “Auto Adjust” the first time a new mode is detected but except the DOS mode 640 x 350, 720 x 400 & 640 x 400.(see section “0-Touch™ Function Actions”)

While running Change Mode, Auto Adjust or Memory Recall, the image shall blank

3. Front Panel Function Control Description

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) [MUTE] [1] [] [] [2] []	[] Power [1] BUTTON 1 [2] Button 2 [] UP ARROW BUTTON [] DOWN ARROW BUTTON [MUTE] Audio Mute on/off Note: Power Button, Button 1 and Button 2 and Mute Button 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
[] or []	To immediately activate Contrast menu. It should be change to Brightness OSD by push button [2]
[] + []	Recall both of Contrast and Brightness to default
[1] + [2]	Toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode
[1] + [] + []	White Balance. (Not shown on user's guide)
[1] + []	Power Lock
[1] + []	OSD Lock
[MUTE]	Audio Mute on /off
Remark : All the short cuts function are only available while OSD off	

Main Menu Controls

Auto Image Adjust^{*1}

Contrast/Brightness^{*2*4}

Audio Adjust

Volume^{*4}, Mute^{*4}

Color Adjust

sRGB, 9300K, 6500K(default), 5400, 5000, User Color [R, G, B]

Information

H Frequency, V Frequency, Resolution, Pixel Clock, Serial Number,
Model Number, "www.ViewSonic.com"

Manual Image Adjust

H. Size^{*1}, H./V. Position^{*1}, Fine Tune^{*1}, Sharpness^{*3}

Setup Menu

Language [English, French, German, Spanish, Italian, Finnish, Japanese, Traditional Chinese, Simplified Chinese], Resolution Notice, OSD Position, OSD Timeout, OSD Background

Memory Recall

^{*1} These functions are not available in Digital Mode

^{*2} These functions are not available under sRGB Mode

^{*3} These functions are not available under Native Resolution Mode

^{*4} These functions setting can be recalled to default by []+[]

[Remark] Please refer to the detail in the Appendix C

Function descriptions

OSD Lock short cuts function for the buttons

The OSD lock will be activated by pressing the front panel control buttons "(1), & ()" for 10 seconds. If the user then tries to access the OSD by pressing any of the buttons "1", " ", " ", "2" a message will appear on the screen for 3 seconds showing "OSD Locked". The OSD lock will be deactivated by pressing the front panel control buttons "(1), & ()" again for 10 seconds.

Note1: When the OSD is locked will lock all functions, including "Volume" and "Mute"

Note 2: Status bar indicating OSD Lock or Unlock is in progress and when complete it will indicate "OSD Locked"

Note 3: OSD Lock should not lock Power Button and Power Lock function

Power Lock short cuts function for the buttons

The power button lock will be activated by pressing the front panel control buttons "(1), & ()" for 10 seconds. Locking the power button means that the user won't be able to turn off the LCD while the power button is locked. If the user presses the power button while it is locked, a message will appear on the screen for 3 seconds showing "Power Button Locked". It also means that with the power button locked, the LCD would automatically turn back "On" when power is restored after a power failure. If the power button is not in the locked mode, then power should return to it's previous state when power is restored after a power failure. The power button lock will be deactivated by pressing the front panel control buttons "(1), & ()" again for 10 seconds.

Note 1: Status bar indicating Power Button lock or unlock is in progress and when complete it will indicate "Power Button Locked"

Note 2: Power should only be lockable in the "On State"

Memory Recall Actions

Memory Recall action on the analog and digital mode as below

1. Set the factory defaults as shown in Section 4-8
2. Clean all the mode setting buffer
3. Execute Auto Image Adjust

Note: Memory Recall should have no effect for Language, Power Lock, User Color Settings or Input Priority

Resolution Notice Actions

1. Resolution Notice OSD should show on screen after changing to non-native mode for 30 sec
2. The OSD should disappear after 10 sec or by pushing button [1] or [2]

Resolution Notice function should be disabled when push button [2] under Resolution Notice OSD

0-Touch™ Function Actions

1. Execute Auto Image Adjust when new mode detected, and save the settings to buffer for further use
 2. It should be reset by Memory Recall function
- (Should not reset by power off, power unplug and others)

OSD Auto Save

The OSD shall save new settings when it is turned off by the user or when it times out. There shall not be a separate save

AUDIO INTERFACE (SPEAKER SPECIFICATION)

Line input connection	3.5 mm stereo jack
Line input signal	1.0Vrms@1kHz
Line input impedance	10k ohm
Maximum power output (Electric)	2W
Signal to Noise Ratio	72db
Frequency response	F ₀ -20kHz (F ₀ : Lowest resonant freq.)
Distortion	<8% THD @ 1kHz
Vibration	There should be no audible vibration with volume at 100%. (Input signal within 1 Vrms)
Screen image	There should be no affect on the screen image stability under any conditions
Connector PC99 requirement Audio in	Lime Green pantone # 577C
Cable type / length	3.5mm stereo cable / 1.8m length
Audio DPMS	NOTE: THERE IS NO GUARANTEE <1 W POWER CONSUMPTION IN ACTIVE OFF MODE, WHEN THE AUDIO CABLE IS CONNECTED

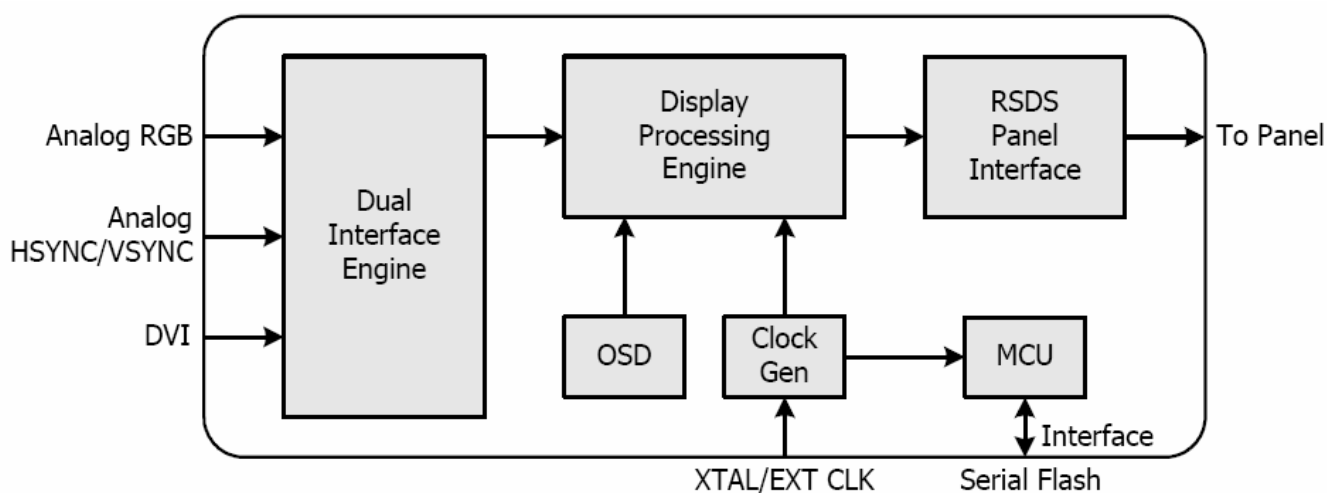
3. OSD Table

Layer 1	Layer 2	Layer 3
Auto Image Adjust		
Contrast/Brightness	Contrast (+ / -)	
	Brightness (+ / -)	
Audio Adjust	Volume (+ / -)	
	Mute	On/Off
Color Adjust	sRGB	
	9300K	
	6500K	
	5400K	
	5000K	
	User Color	Red (+ / -)
		Green (+ / -)
		Blue (+ / -)
Information		
Manual Image Adjust	Horizontal Size	+ / -
	H/V Position	H Position (+ / -)
		V Position (+ / -)
	Fine Tune	+ / -
	Sharpness	+ / -
Setup Menu	Language Select	English
		French
		German
		Spanish
		Italian
		Finnish
		Japanese
		Simplified Chinese
		Traditional Chinese
	Resolution Notice	On/Off
	Input Priority	On/Off
	OSD Position	H Position (+ / -)
		V Position (+ / -)
	OSD Time Out	5/15/30/60
	OSD Background	On/Off
Memory Recall		

4. Circuit Description

The TSUM57AK is total solution graphics processing IC for LCD monitors with panel resolutions up to SXGA. It is configured with a high-speed integrated triple-ADC/PLL, a high quality display processing engine, and an integrated output display interface that can support RSDS panel interface format. To further reduce system costs, the TSUM57AK also integrates intelligent power management control capability for green-mode requirements and spread- spectrum support for EMI management.

The TSUM57AK incorporates the world's first coherent oversampled RGB graphics ADC in a monitor controller system. The oversampling ADC samples the input RGB signals at a frequency that is much higher than the signal source pixel rate. This can preserve details in the video signal that ordinarily would be lost due to input signal jitter or bandwidth limitations in non-oversampled systems. The TSUM57AK also incorporates a new Dynamic Frame Rate (DFR) generator for the digital output video to the display panel that preserves the advantages of a fixed output clock rate, while eliminating the output end of frame short-line.



5. Adjustment Procedure

A. Function Test and Alignment Procedure

1. All Modes Reset

You should do “All Model Reset” (Refer to Chap 3. Hot Keys for Function Controls) first. This action will allow you to erase all end-user’s settings and restore the factory defaults.

2. Auto Image Adjust

The Auto Adjust is aimed to offer a best screen quality by built-in ASIC. For optimum screen quality, the user has to adjust each function manually.

A. Turn the computer and LCD monitor on.

B. Press the ‘Auto’ button on monitor keypad to Auto Adjust.

C. The LCD monitor will start the Auto Adjust process automatically and run for 10 consecutive seconds, during which time you will notice the image change.

3. Firmware

Test Pattern: Burn in Model (Refer to Chap3. Hot Keys for Function Control)

-Make sure the F/W is the latest version.

4. DCC

Test Pattern: EDID program

-Make sure it can pass test program.

5. Window Shut Down

Test Signal: 1280*1024@60Hz

Test Pattern:



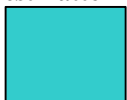
Checkered Pattern Every One Pixel (50%Green & 50%Blue)

Inspection Item: Flicker, Mura

6. Window BG

Test Signal: 1280*1024@60Hz

Test Pattern:



Window standard pattern

Inspection Item: Line Defect, Function Defect & Mura

7. 25 Gray

Test Signal: 1280*1024@60Hz

Test Pattern:



Full Screen 25% White (Gray)

Inspection Item: Particle, Line Defect & Mura

8. 50 Gray

Test Signal: 1280*1024@60Hz

Test Pattern:



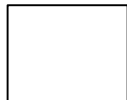
Full Screen 50% White (Gray)

Inspection Item: Bright Dot, Particle, Line Defect & Mura

9. White Box

Test Signal: 1280*1024@60Hz

Test Pattern:



Window standard pattern

Inspection Item: Particle, Line Defect, Power, Image Remain & Mura

10. Black Box

Test Signal: 1280*1024@60Hz

Test Pattern:



Window standard pattern

Inspection Item: Bright Dot, Line Defect & Power

11. RED

Test Signal: 1280*1024@60Hz

Test Pattern:



Full Screen Red

Inspection Item: Bright Dot, Partial & Line Defect

12. Green

Test Signal: 1280*1024@60Hz

Test Pattern:



Full Screen Green

Inspection Item: Bright Dot, Partial & Line Defect

13. Blue

Test Signal: 1280*1024@60Hz

Test Pattern:



Full Screen Green

Inspection Item: Bright Dot, Partial & Line Defect

14. Gray_Scale_0-100_V64

Test Signal: 1280*1024@60Hz

Test Pattern:



Vertical 64 (256) Gray Scale (Right Left , From 0 to 100% White)

Inspection Item: Line Defect & Function Defect

15. Function Test Display pattern

Item	Pattern	Description	Remark
1	Gray_Scale_0-100_V	Vertical 64 (256) Gray Scale (右 左 , From 0 to 100% White)	Figure 1
2	Gray_Scale_0-100_H	Horizontal 64 (256) Gray Scale (上 下 , From 0 to 100% White)	Figure 2
3	Black	Full Screen Black	Figure 3
4	Red	Full Screen 50% Red	Figure 4
5	Green	Full Screen 50% Green	Figure 5
6	Blue	Full Screen 50% Blue	Figure6
7	White	Full Screen White	Figure7
8	Black_Tile	Black Tile Under White Background	Figure 8

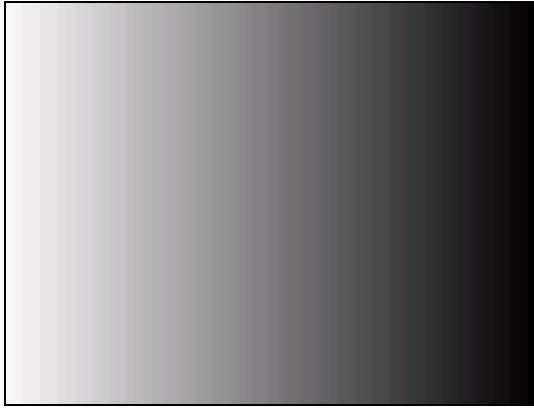


Figure 1



Figure 2



Figure 3

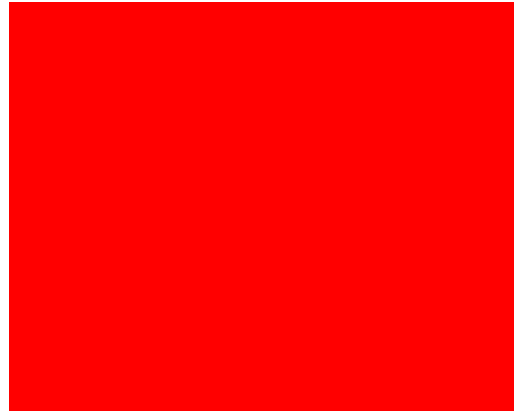


Figure 4

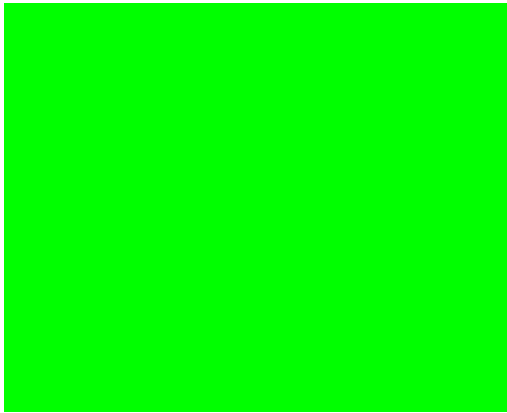


Figure 5

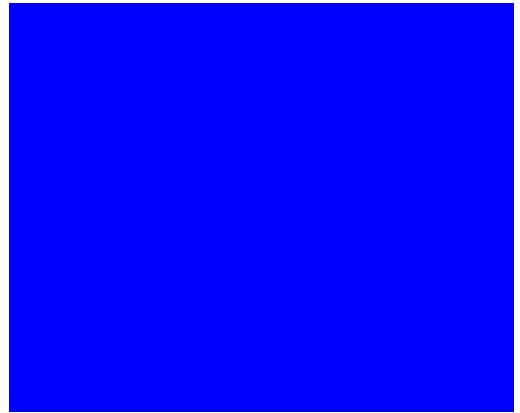


Figure 6

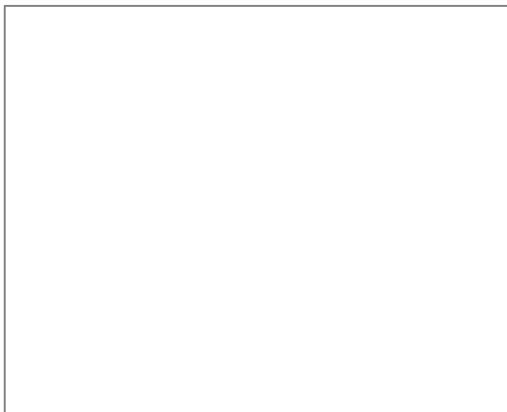


Figure 7

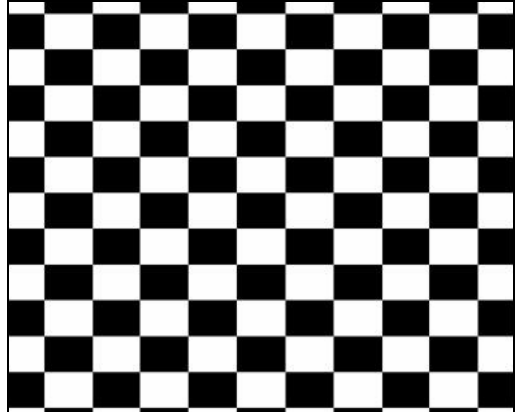


Figure 8

BIOS update procedure

1. To setup ISP environment

Hardware:

PC or Notebook , Parallel(Printer) cable , ISP tool(Fig 1)

Software:

ISP driver .

If the O.S. was Win2000 or Win XP please have to install

PORT95NT.exe



Fig1

In order to ensure can execute ISP program, please set BIOS in PC or Notebook as Fig 2

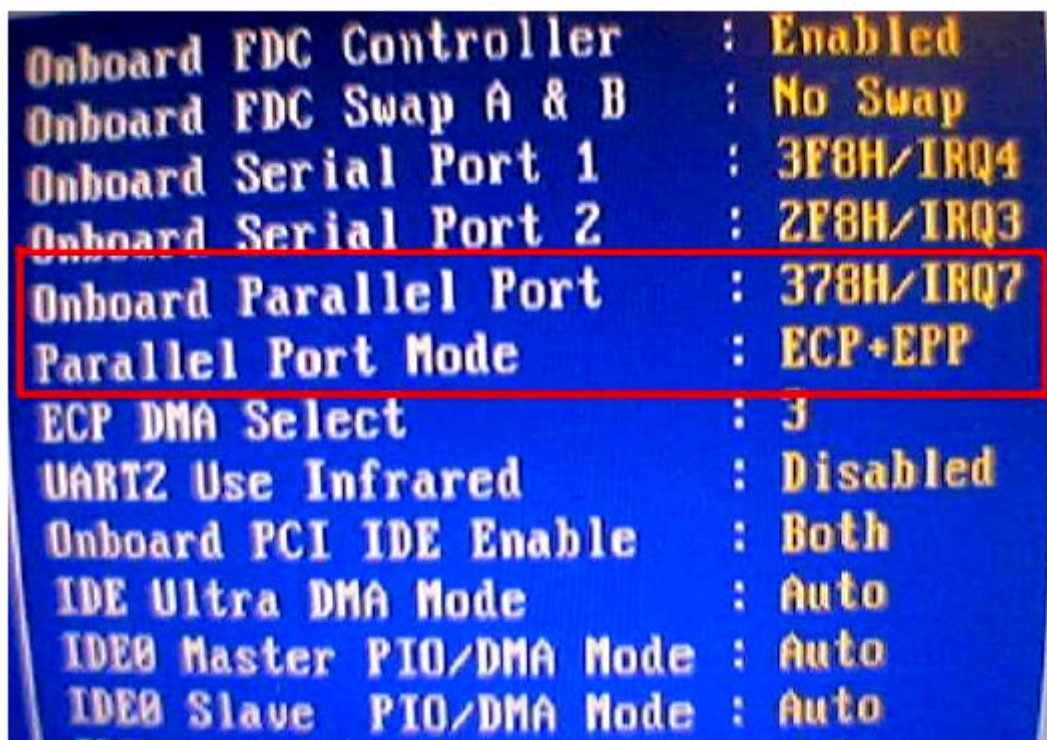


Fig 2

2. Install ISP

2.1 User could download ISP driver and PORT95NT install file from Myson Century

website(//www.myson.com.tw)

2.2 After extracting the zip file, the total files list as Fig 2.2, and double click the file of setup.exe to install.

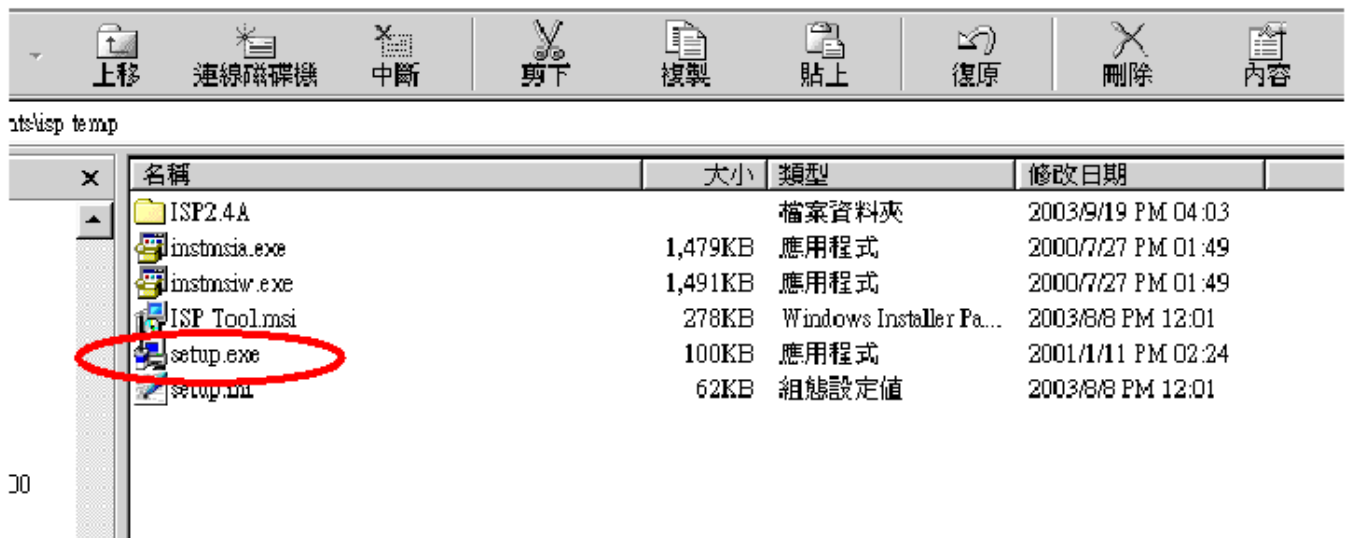


Fig 2.2

2.3 Press “ Next ” button to continue., see Fig 2.3

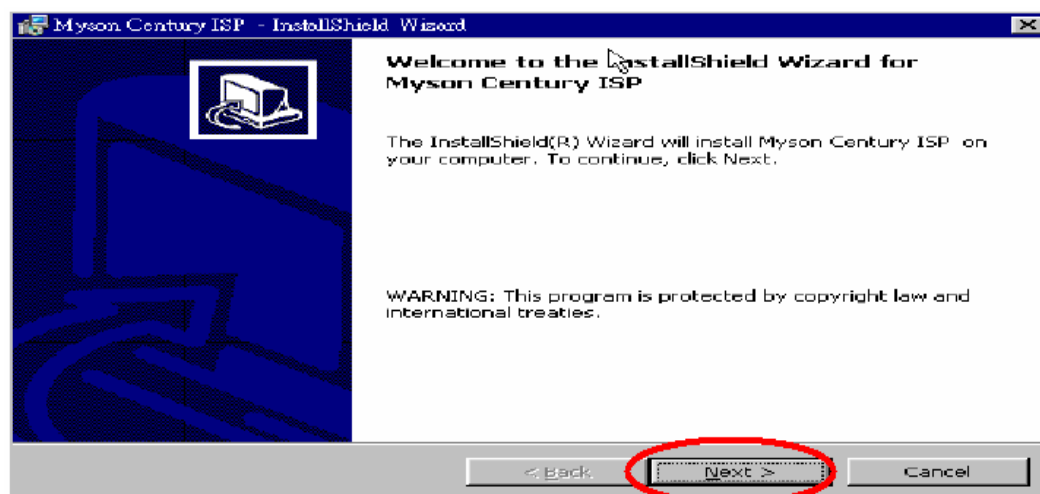


Fig 2.3

2.4 Keep default setting or press “ Change ” button for selecting the path that you want , and then press “ Next ” button to continue, see Fig 2.4.

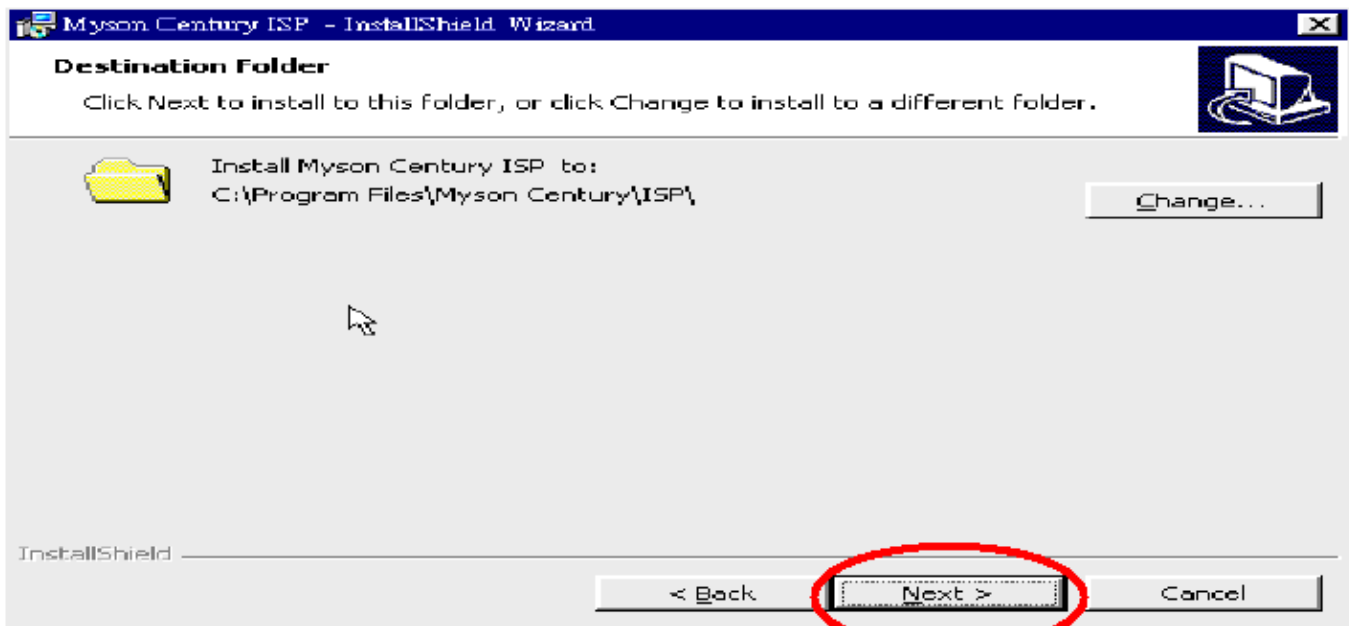


Fig 2.4

2.5 Press “ Install ” button to continue, see Fig 2.5

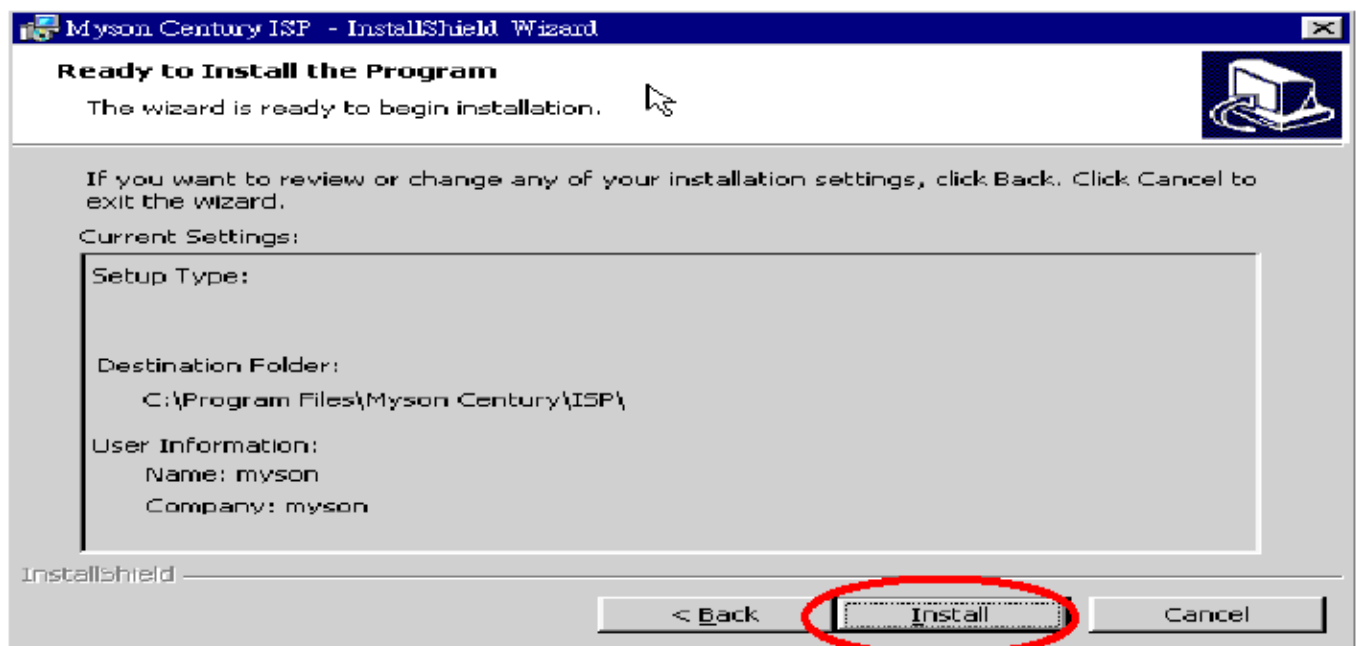


Fig 2.5

2.6 The Installer Information shows package warning, press “ Ignore ” button to continue, see Fig 2.6.

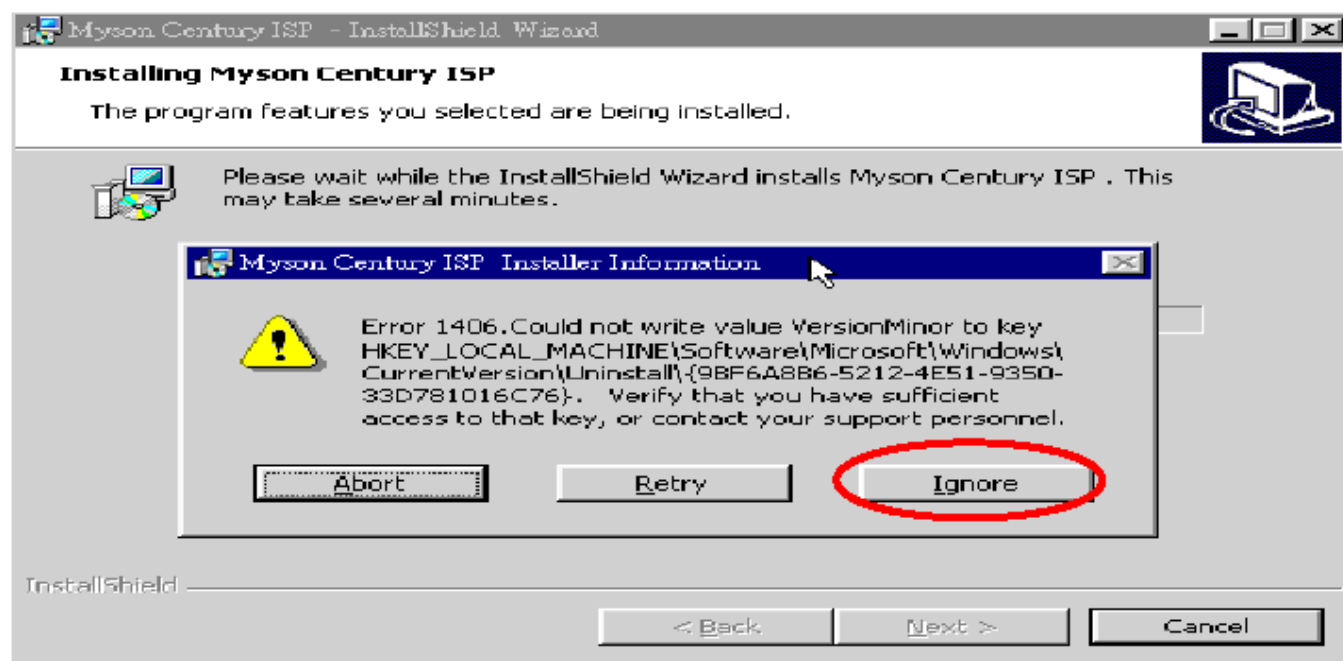


Fig 2.6

2.7 Installation has finished, press “ Finish ” button, see Fig 2.7.

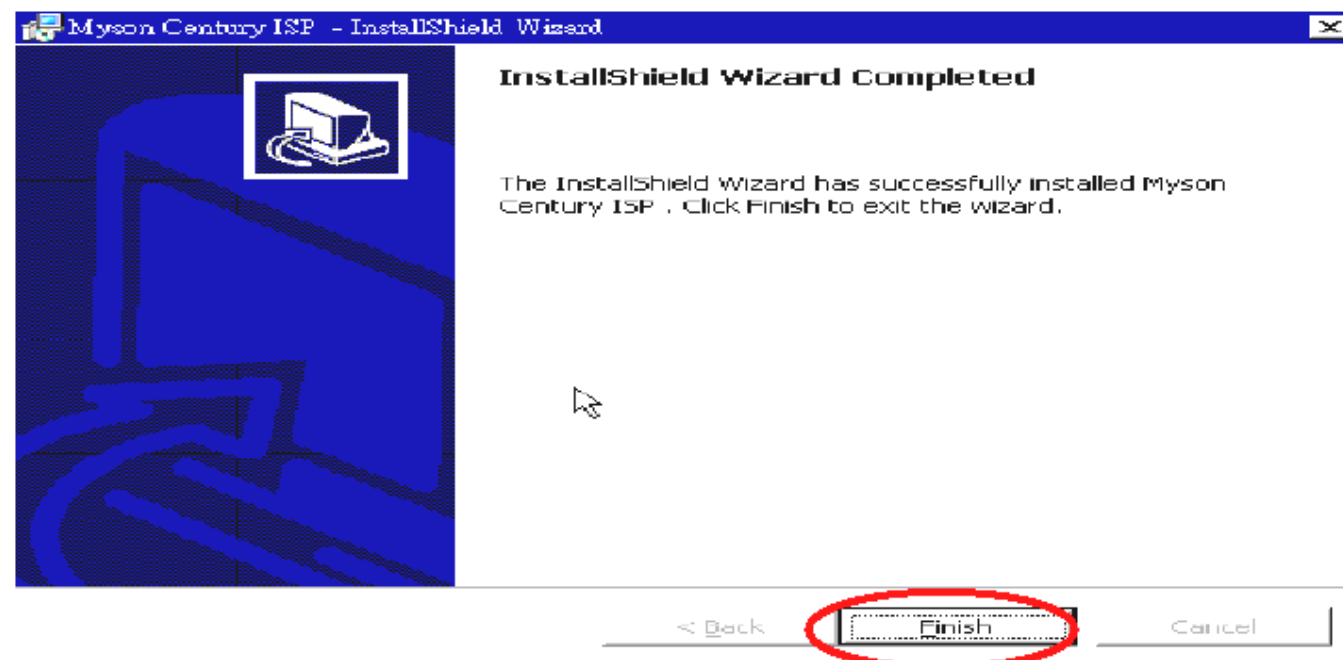


Fig 2.7

3. ISP security code

3.1 After installation, we could find the shortcut in the setting path or the program bar (default setting), see Fig 3.1.

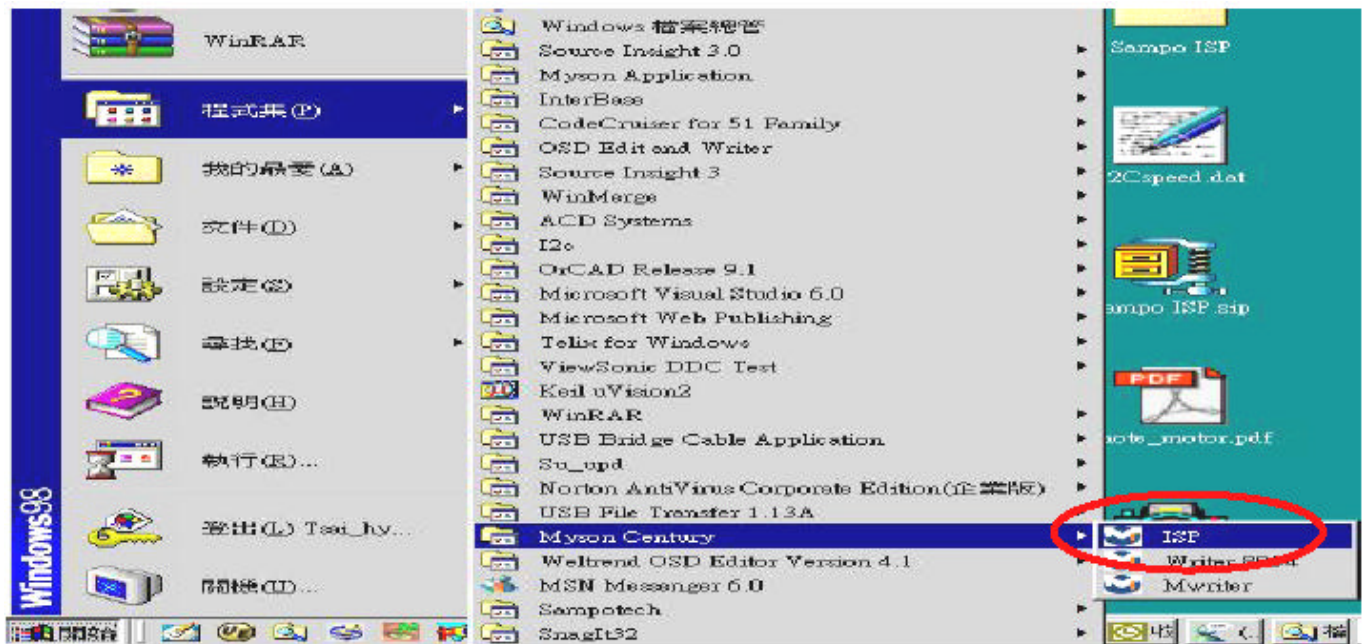


Fig 3.1

2.2 Security file is a key to use ISP function, press “確定” button, see Fig 3.2.

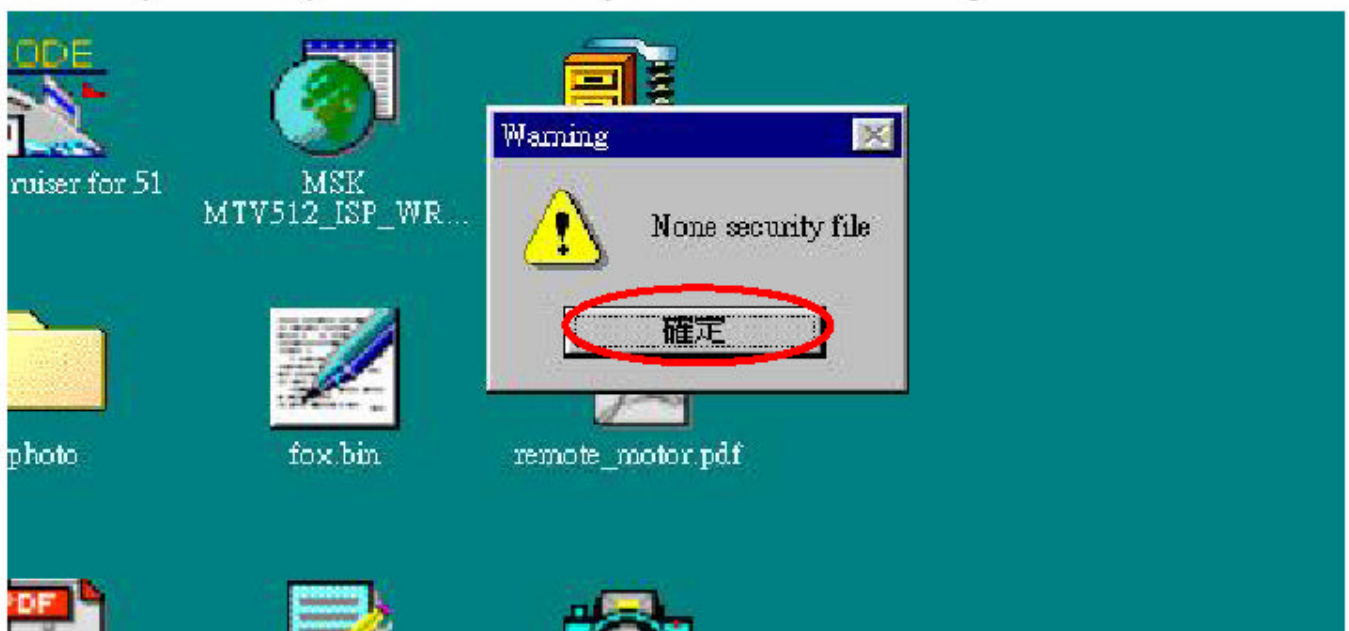


Fig 3.2

3.3 The warning is used to remind user of that different CPU rate may cause ISP function fail(it is limited by IIC protocol), press “ 確定 ” button, see Fig 3.3.



Fig 3.3

2.4 Press “ Create Security File ” button to key in **security code**. Adjusting bar to decrease **speed of IIC bus**, see Fig 3.4.

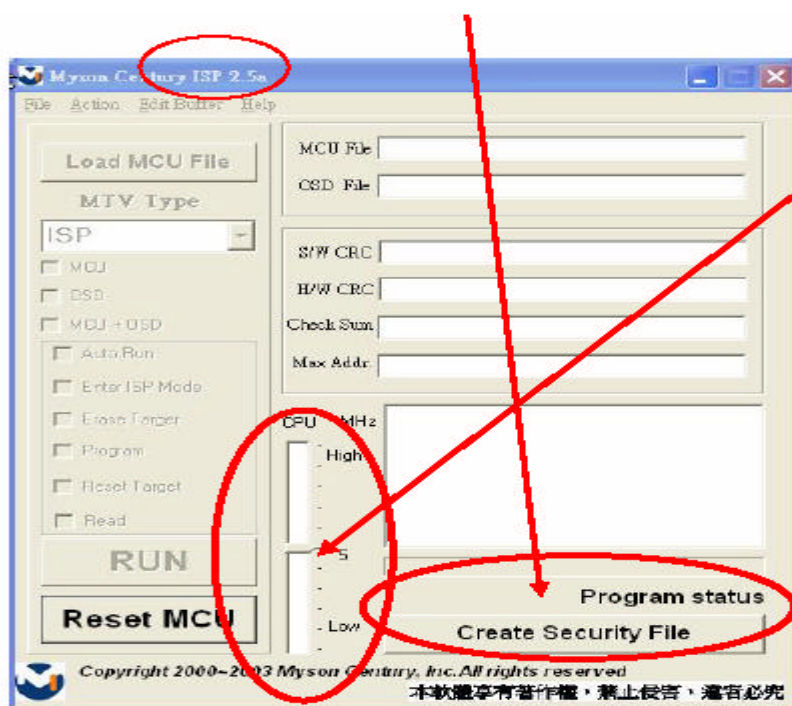


Fig 3.4

3.5 At least 2 Command No of security code, see Fig 3.5, and different security code between hardware ISP and software ISP. The security code of software ISP is set by user while coding, but the security code of hardware ISP is set by Myson Century.

The screenshot shows a 'Security' window with a list of 16 commands. Each command has an address field and a range '0x00 - 0xFF'. The 'Command No' field is highlighted with a red circle and contains the value '2'. Below the list are 'OK' and 'CLEAR' buttons. To the right, there are additional fields and buttons, including 'n status' and 'File'.

Command	Address	Range
ISP Slave Add.		0x00 - 0xFF
SlaveB Add.		0x00 - 0xFF
Command 1		0x00 - 0xFF
Command 2		0x00 - 0xFF
Command 3		0x00 - 0xFF
Command 4		0x00 - 0xFF
Command 5		0x00 - 0xFF
Command 6		0x00 - 0xFF
Command 7		0x00 - 0xFF
Command 8		0x00 - 0xFF
Command 9		0x00 - 0xFF
Command 10		0x00 - 0xFF
Command 11		0x00 - 0xFF
Command 12		0x00 - 0xFF
Command 13		0x00 - 0xFF
Command 14		0x00 - 0xFF
Command 15		0x00 - 0xFF

Fig 3.5

3.6 Fig 3.6 shows the setting for security code of **hardware ISP**, it needs **4** Command No, and key in command sequentially for **94, 94, AC, CA, 53**.

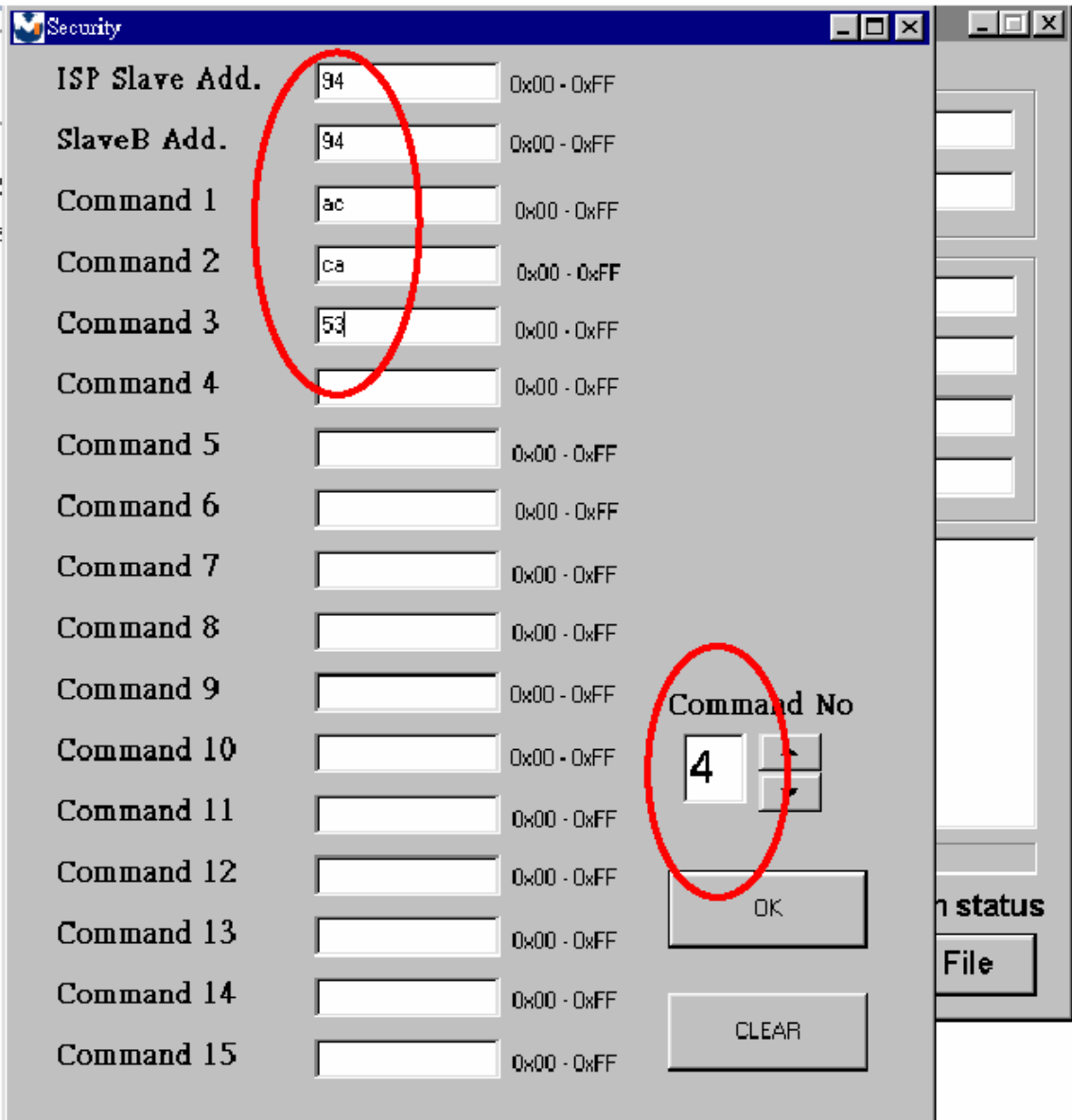


Fig 3.6

3.7 Fig 3.7 shows the setting for security code of **software ISP**, it needs **2** Command No, and key in command sequentially for **7C, 4C, 77**. The Command No and command must be set by user while coding. About the detail of setting, please refer to Section 6 Boot code of ISP.

The screenshot shows a 'Security' dialog box with the following fields and values:

Field	Value	Range
ISP Slave Add.	7C	0x00 - 0xFF
SlaveB Add.	4C	0x00 - 0xFF
Command 1	77	0x00 - 0xFF
Command 2		0x00 - 0xFF
Command 3		0x00 - 0xFF
Command 4		0x00 - 0xFF
Command 5		0x00 - 0xFF
Command 6		0x00 - 0xFF
Command 7		0x00 - 0xFF
Command 8		0x00 - 0xFF
Command 9		0x00 - 0xFF
Command 10		0x00 - 0xFF
Command 11		0x00 - 0xFF
Command 12		0x00 - 0xFF
Command 13		0x00 - 0xFF
Command 14		0x00 - 0xFF
Command 15		0x00 - 0xFF

Command No: 2

Buttons: OK, CLEAR

Fig 3.7

4. Use ISP to program MCU

- 4.1 Select MTV type first, load the binary or Intel hex file that you want to program into the MCU, and select “ Auto ” item, then press “ RUN ” button, see Fig 4.1.
- 4.2 If user changes the MTV type, it must load file again, or the buffer of load file will be cleared.
- 4.3 CRC (cyclic redundancy check): the host can check CRC register’s result instead of reading every byte in flash. The message of Check MCU CRC OK means that the Host verify ok for the progress of program.

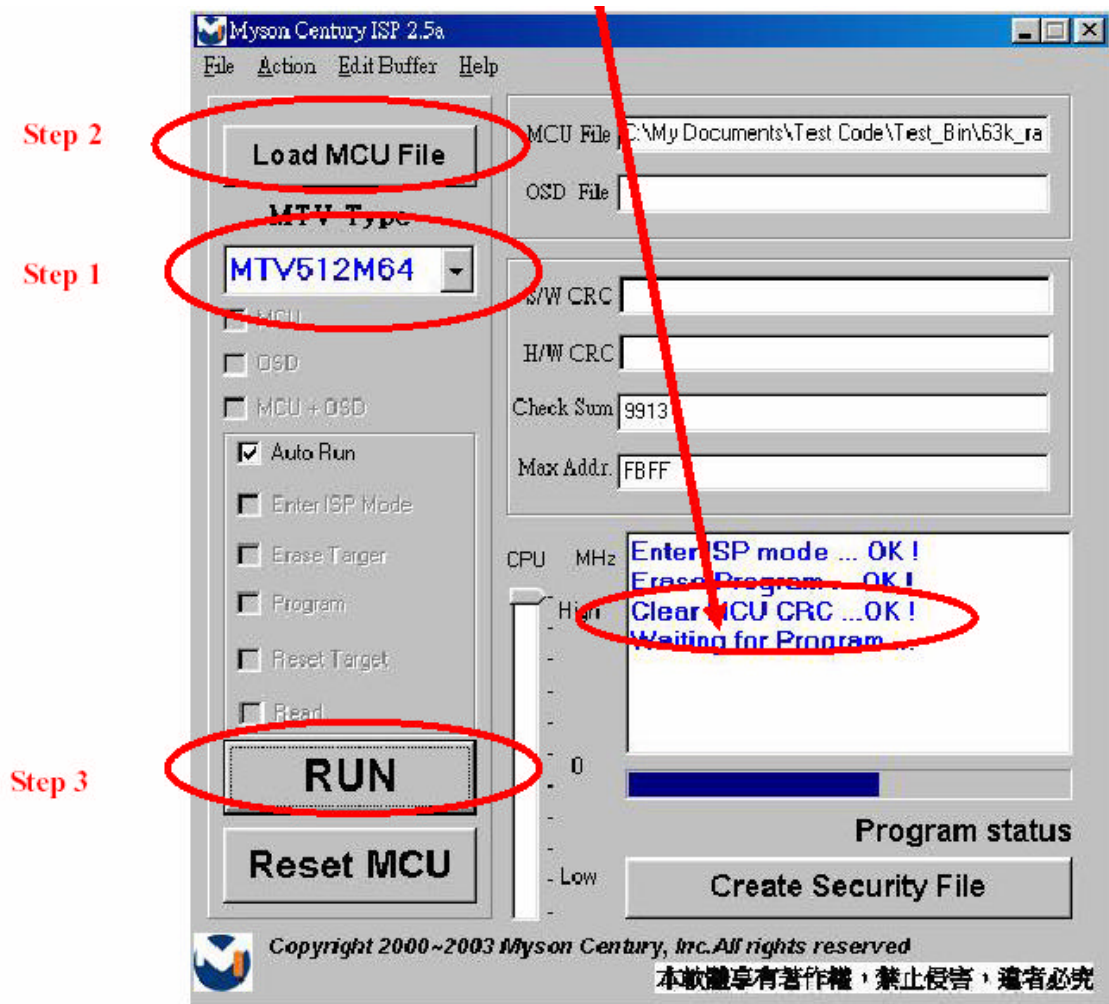


Fig 4.1

5 Use ISP to read MCU content

5.1 Only software ISP could read the MCU content, it is according to program the boot code while coding. The limitation is used for the security of customer ' s code. Select “ Read Target ” item, and press “ RUN ” button, the MCU content will show as Fig 5.1.

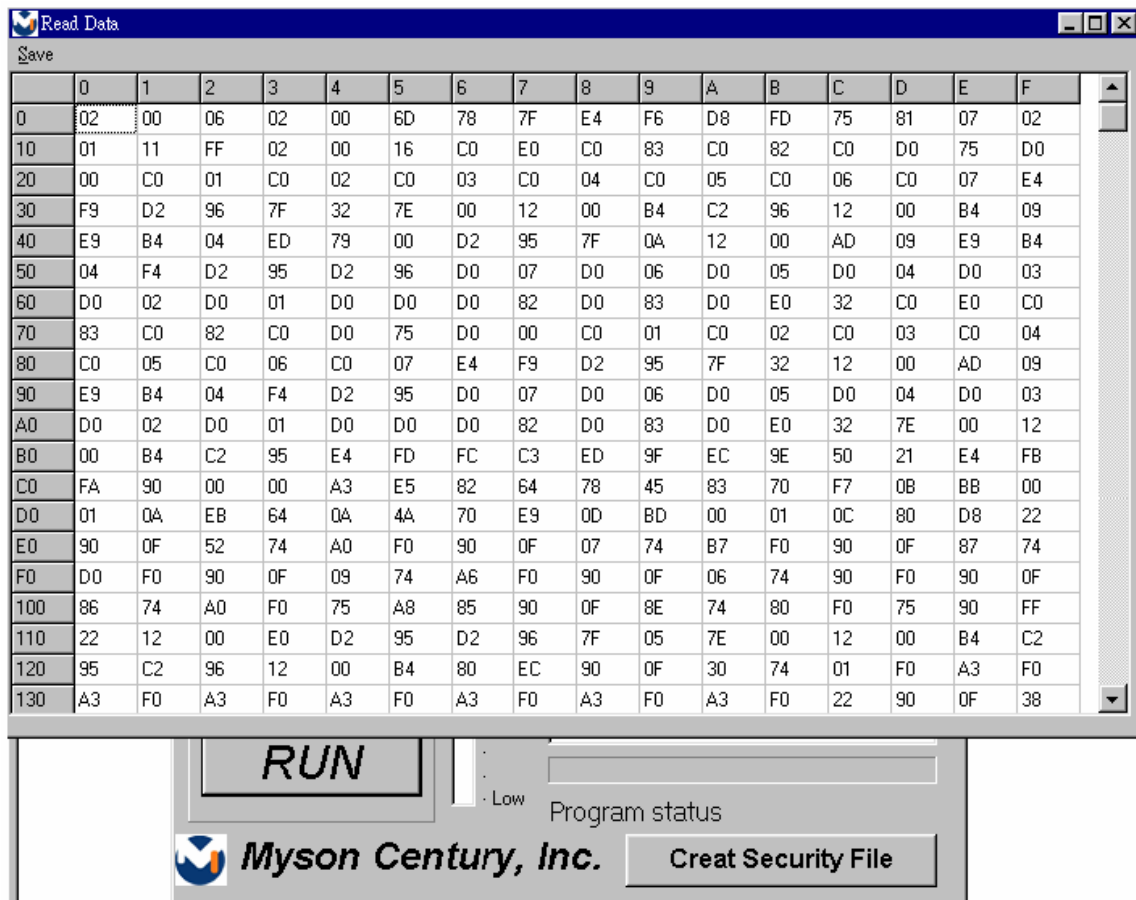


Fig 5.1

5.2 If user uses hardware ISP to read MCU content, it shows as Fig 5.2.

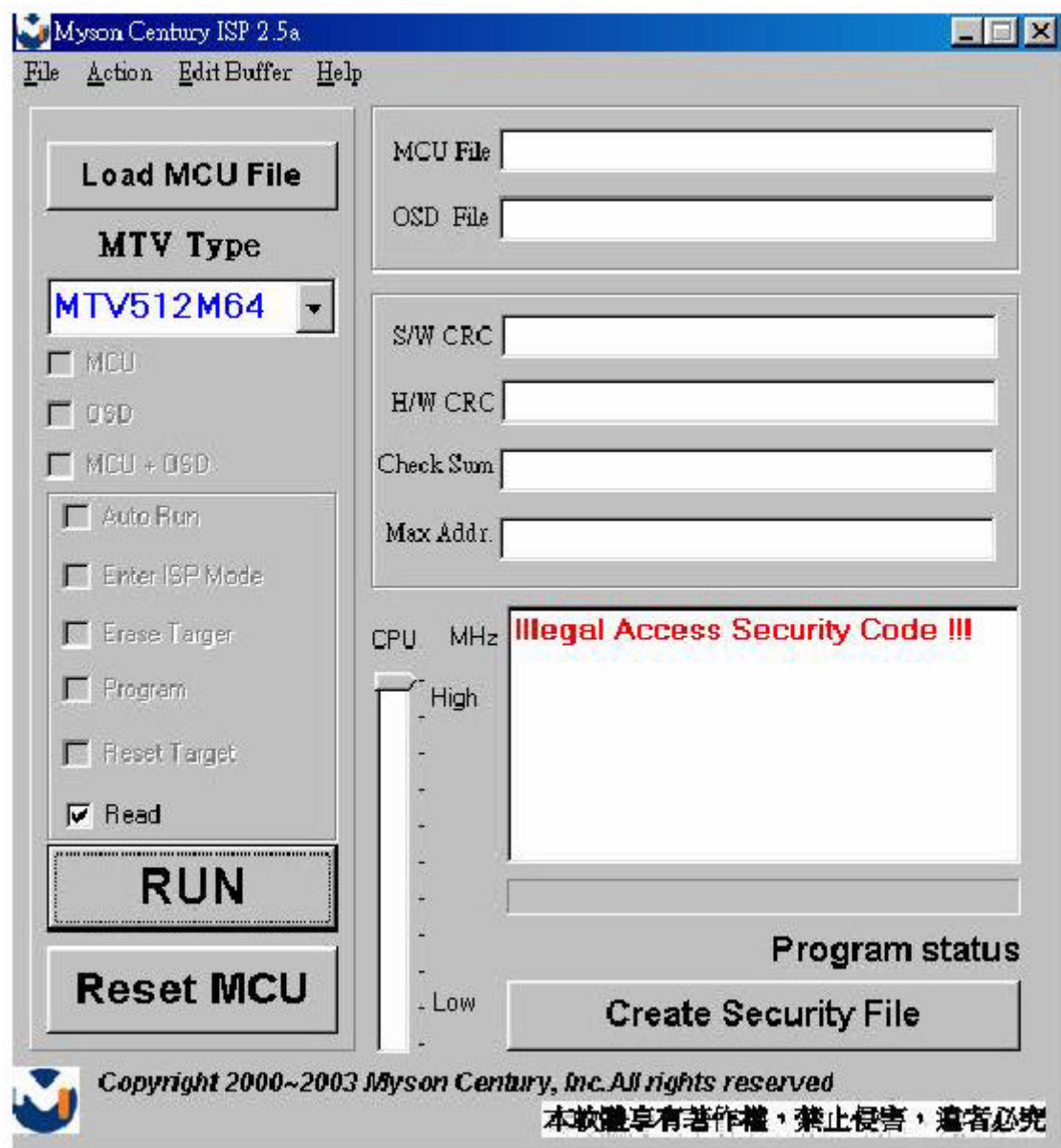
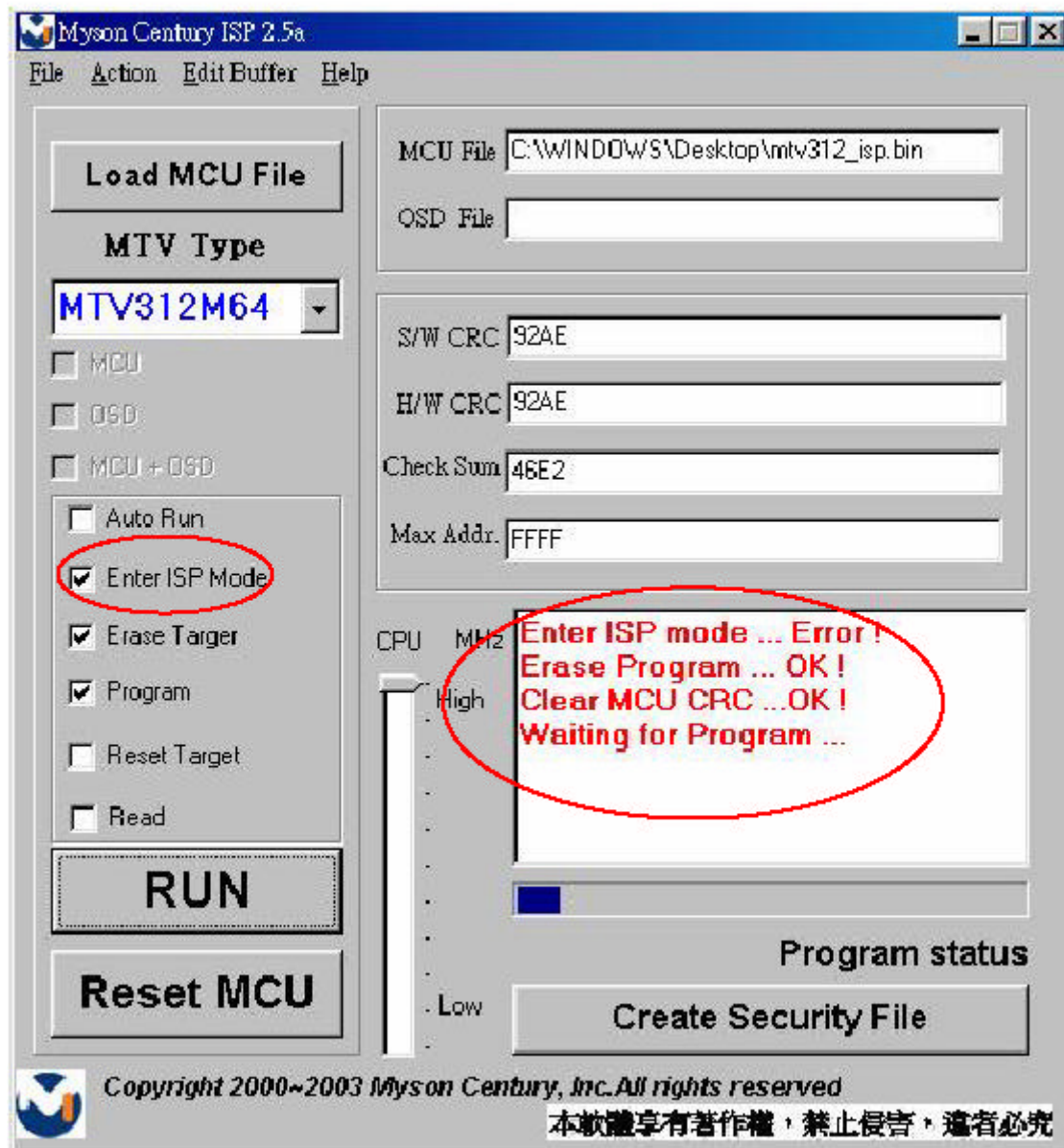
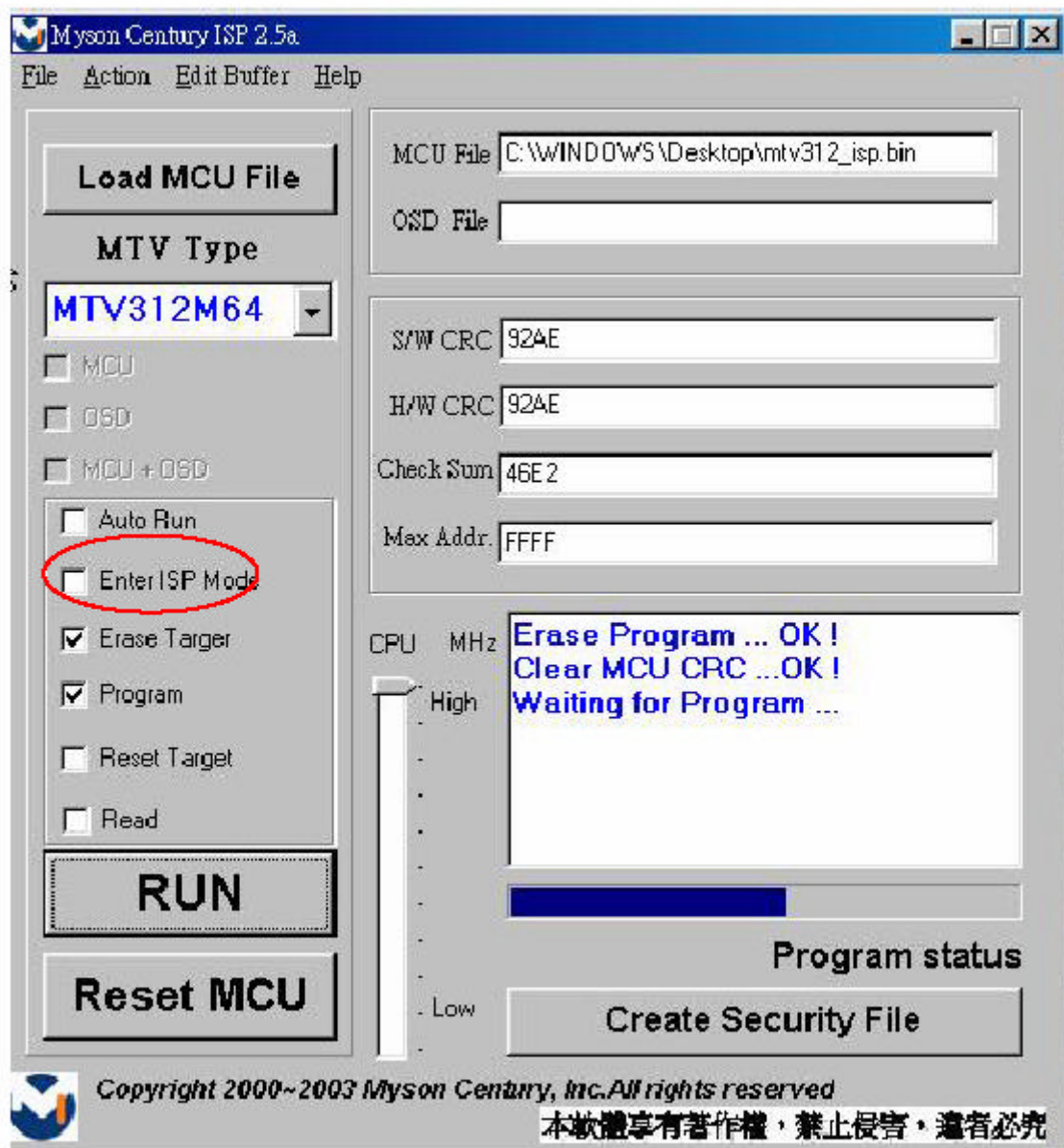


Fig 5.2

6 Re-entry the ISP Mode

When you could not select or click ' **Reset MCU** ' button and enter ISP mode again, you refer the message as below:





Note:

(1) Disable the 'Enter ISP Mode' option to avoid the error message display.

(2) If you are using the MTV312M64 or before MCU serials, the MCU will always be in 'ISP Mode' even if programming fails or erases the MCU. Instead of selecting or pressing 'Reset MCU'.

7. Boot code of ISP

7.1 Hardware ISP

- (1) Without boot code
- (2) Fixed security code: 94, 94, AC, CA, 53
- (3) Attention to the pin of HSCL (1) and HSDA (1) should keep in enable
- (4) MTV412M, MTV512M, CS8954 support hardware ISP

7.2 Software ISP

- (1) With boot code
- (2) User define the security code
- (3) Attention to the pin of HSCL (1) and HSDA (1) should keep in enable
- (4) Only software ISP could read the MCU content
- (5) MTV212M, MTV312M, MTV230M, MTV412M, MTV512M, CS8954 support software ISP

7.3 Boot code of software ISP

- (1) Initialize MCU
 - (a) Define the I/O pin to HSCL (1) and HSDA (1)
 - (b) Define the slave B address
 - (c) Enable 8051 INT1 (ISR 2)
- (2) Coding for INT1 while get into ISP mode
 - (a) Clear watchdog to prevent reset during ISP period
 - (b) Disable all interrupt to prevent CPU wake-up
 - (c) Write ISP slave address
 - (d) Write 93h to ISP enable address to enable ISP
 - (e) Enter 8051 idle mode

7.4 The followings show the relationship between the code and the security code.

```

//
XRAM[SLVADDR]=0x80|(0x4c>>1);
// Set P3.0, P3.1, P3.4, p3.5 to IIC related pins
XRAM[PADMOD0]=0xc0;
XRAM[PADMOD1]=0xff;
XRAM[PADMOD2]=0xf7;
XRAM[PADMOD3]=0xff; // Use HSCL, HSDA, ISCL, ISDA
XRAM[HVSTUS]=0xe0; // enable composite
XRAM[HV_INTEN]=0x01;

TH0=0x0fc;
TLO=0x18;
IT1=0;
TMOD=0x51;
TRO=1;
//IE=0x86;
IE = 0x84; //enable INT1
P1=0x0ff; // Set a:
}

```

```

if( ( INTFLG&0x20 ) !=0 )
{
XRAM[IIC_INTFLG]=INTFLG&0x08;
}
if( ( INTFLG&0x40 ) !=0 )
{
if( (XRAM[IIC_STUS1]&0x80 ) !=0)
{
temp=XRAM[TXRCBBUF];
if( temp == 0x77)
{
//test=1;-----
IE=0;
XRAM[WDT]=0;
XRAM[ISPSLV]=0x7c;
XRAM[ISPEN]=0x93;
PCON=1;
}
}
}

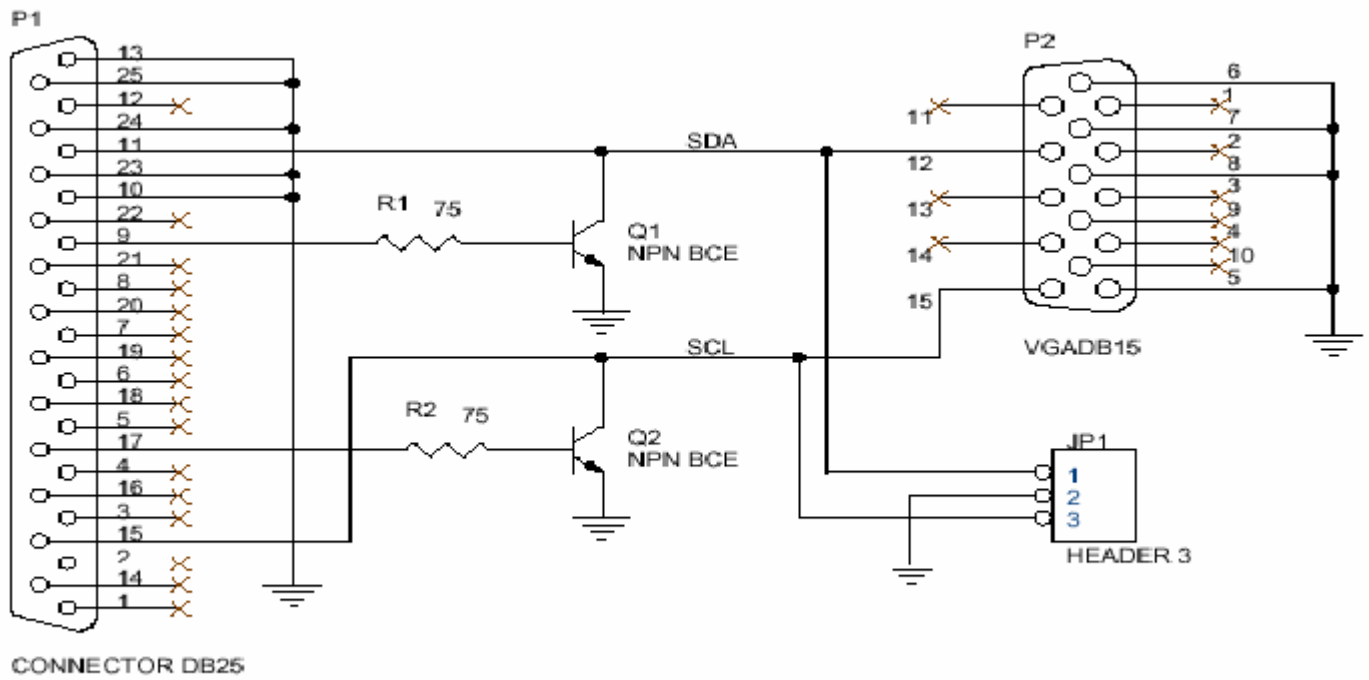
```

Security		
ISP Slave Add.	7c	0x00 - 0xFF
SlaveB Add.	4c	0x00 - 0xFF
Command 1	7d	0x00 - 0xFF
Command 2		0x00 - 0xFF
Command 3		0x00 - 0xFF
Command 4		0x00 - 0xFF
Command 5		0x00 - 0xFF
Command 6		0x00 - 0xFF
Command 7		0x00 - 0xFF
Command 8		0x00 - 0xFF
Command 9		0x00 - 0xFF
Command 10		0x00 - 0xFF
Command 11		0x00 - 0xFF
Command 12		0x00 - 0xFF
Command 13		0x00 - 0xFF
Command 14		0x00 - 0xFF
Command 15		0x00 - 0xFF

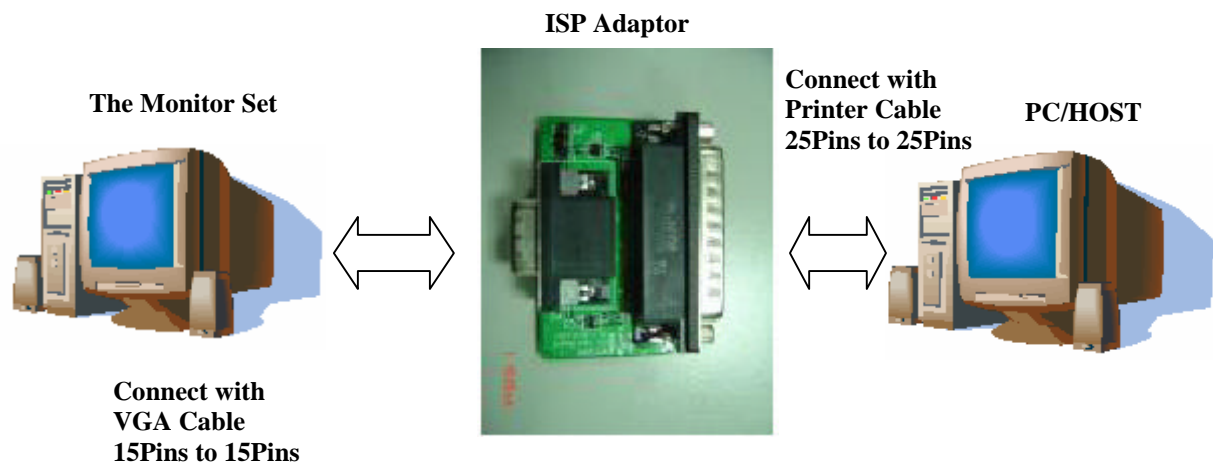
Command No:

OK CLEAR

8. ISP Adaptor Schematic



9. Adatptor Linking



Packing Procedure

1.1 Paste protection film to protect the monitor. (Figure 1)

1.2 Put the monitor in the PE bag and seal the bag with tape. (Figure 2)



Figure 1



Figure 2

1.3 Put the cushions on the monitor. (Figure 3)

1.4 Place the monitor into the carton and then put all the accessories into the carton. As last, close the carton and seal it with tape. (Figure 4)



Figure 3



Figure 4

Monitor Assembly and Disassembly

5.1 Separate Stand Assy

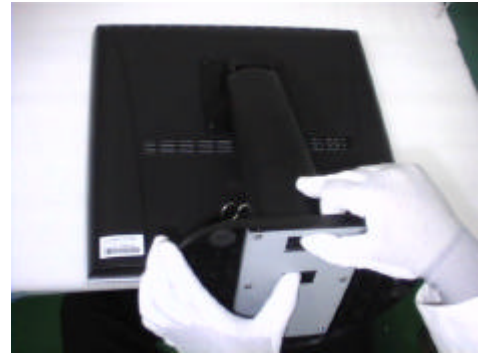
5.1.1 Remove Seat Assy

Step 1 :

Press Stand Assy's bottom part in
Seat Hinge

Step 2:

Remove Seat Assy



5.1.2 Separate Stand Assy

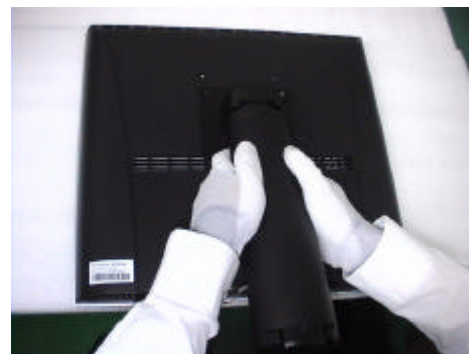
Step 1 :

Loose and Remove 2 screws



Step 2 :

Remove Stand Assy



5.2 Separate Rear Cover (Rear Case Assy)

Separate Bezel hooks to take Bezel and Rear Cover apart.

Step 1 :

Remove Cover Hinge



Step 2 :

Loose and Remove 2 screws



Step 3 :

Separate Bezel hooks to take Bezel and Rear Cover apart.



Step 4 :

Remove Rear Cover



Step 5 :

Completed

5.3 Remove Power Board

5.3.1 Remove FFC



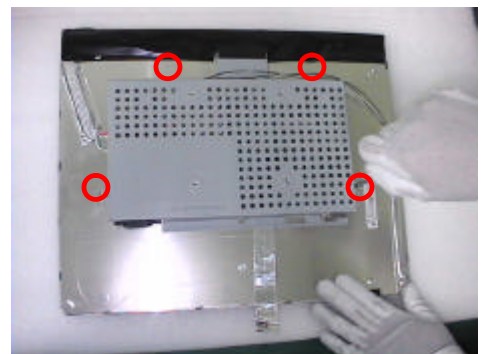
5.3.2 Lift up LCD module and remove Bezel



5.3.3 Remove Metal Cover

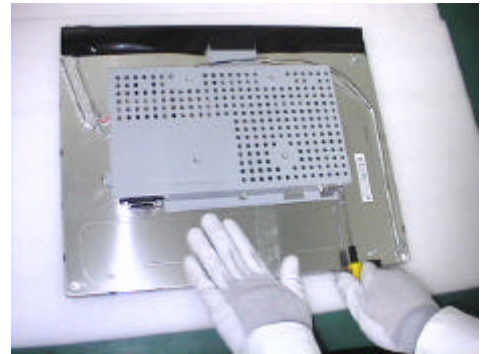
Step 1 :

Loose and remove 4 screws



Step 2 :

Loose and remove 2 screws



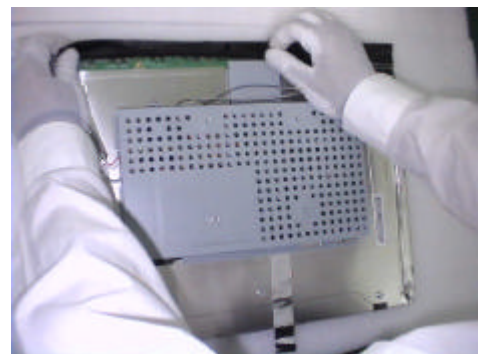
Step 3 :

Loose and remove 2 screws



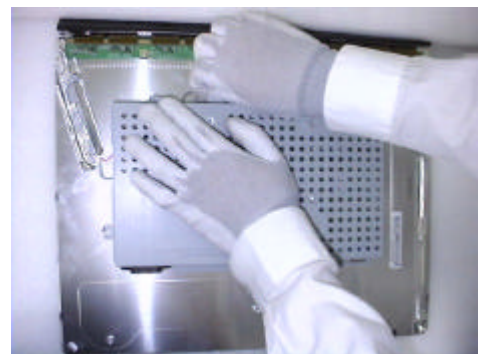
Step 4 :

Remove the tape



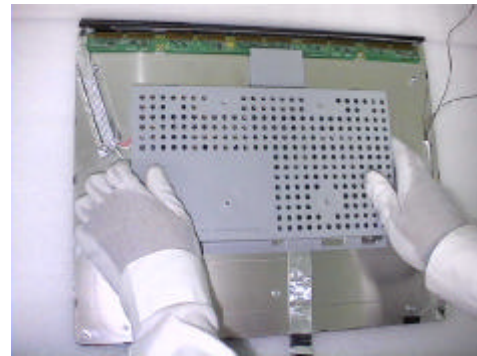
Step 5 :

Remove 2 pieces of Backlight wires.



Step 6 :

Remove the PCBA Cover



5.3.4 Remove Power PCBA

Step 1 :

Remove 2 pieces of Backlight wires.



Step 2 :

Loose and remove 4 screws



Step 3 :

Remove Power PCBA



5.4 Change New Power Board

Step 1 :

Insert New Power PCBA



Step 2 :

Fasten 2 fixed screws of Power PCBA



Step 3 :

Insert 2 pieces of Backlight wires.



5.5 Remove AD PCBA

5.5.1 Remove FFC

Step 1 :

Remove 2 FFCs



Step 3 :

Loose and remove 4 screws



Step 4 :

Remove AD PCBA



Step 5 :

Completed



5.6 Change New AD PCBA

Step 1 :

Insert New AD PCBA



Step 2 :

Fasten 4 screws



Step 3 :

Insert FFC



Step 4 :

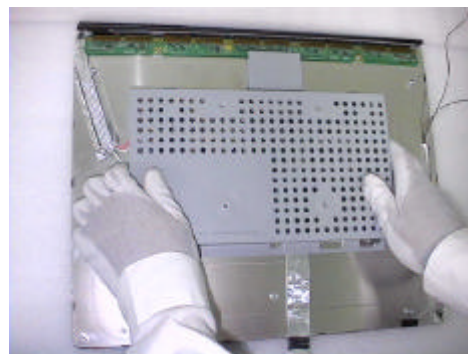
Insert 2 FFC
Completed



5.7 Metal Cover Assembly

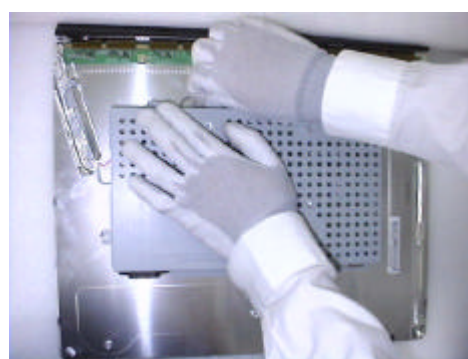
Step 1 :

Place the PCBA Cover



Step 2 :

Insert 2 pieces of Backlight wires.



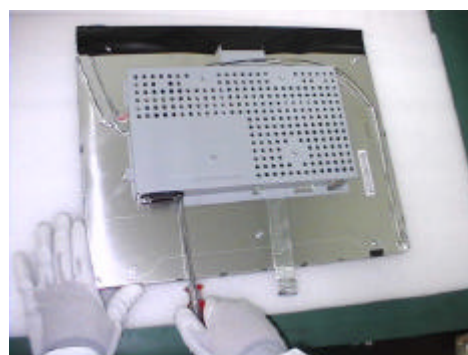
Step 3 :

Join the tape



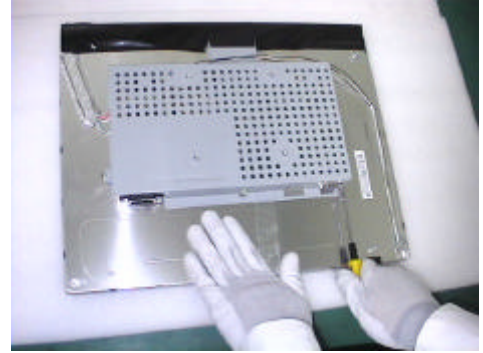
Step 4 :

Fasten 2 screws



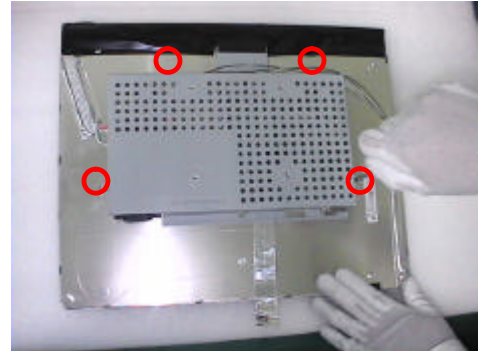
Step 5 :

Fasten 2 screws



Step 6 :

Fasten 2 screws



Step 7 :

Place LCD module to LCD Bezel.



Step 8 :

Insert FFC



5.8 Remove OSD PCBA

Step 1:

Separate both Audio
Cable



Step 2 :

Take OSD PCBA apart



Step 3:

Completed



5.9 Change New OSD PCBA

Step 1 :

Place New OSD PCBA



Step 2 :

Insert Audio Cable to connectors
of OSD PCBA



Step 3:

Completed

5.10 Rear Cover Assy Assembly

Step 1 :

Place Rear Cover



Step 2 :

Fasten 2 screws



Step 3 :

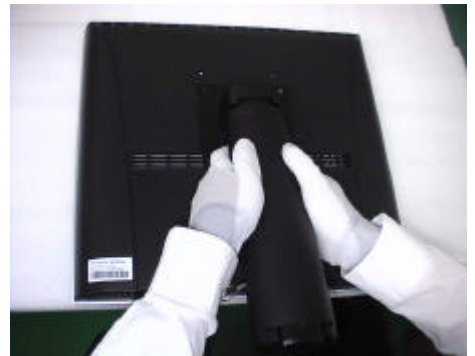
Remove Cover Hinge



5.11 Stand Assy Assembly

Step 1:

Place Seat Assy



Step 2 :

Fasten 4 screws

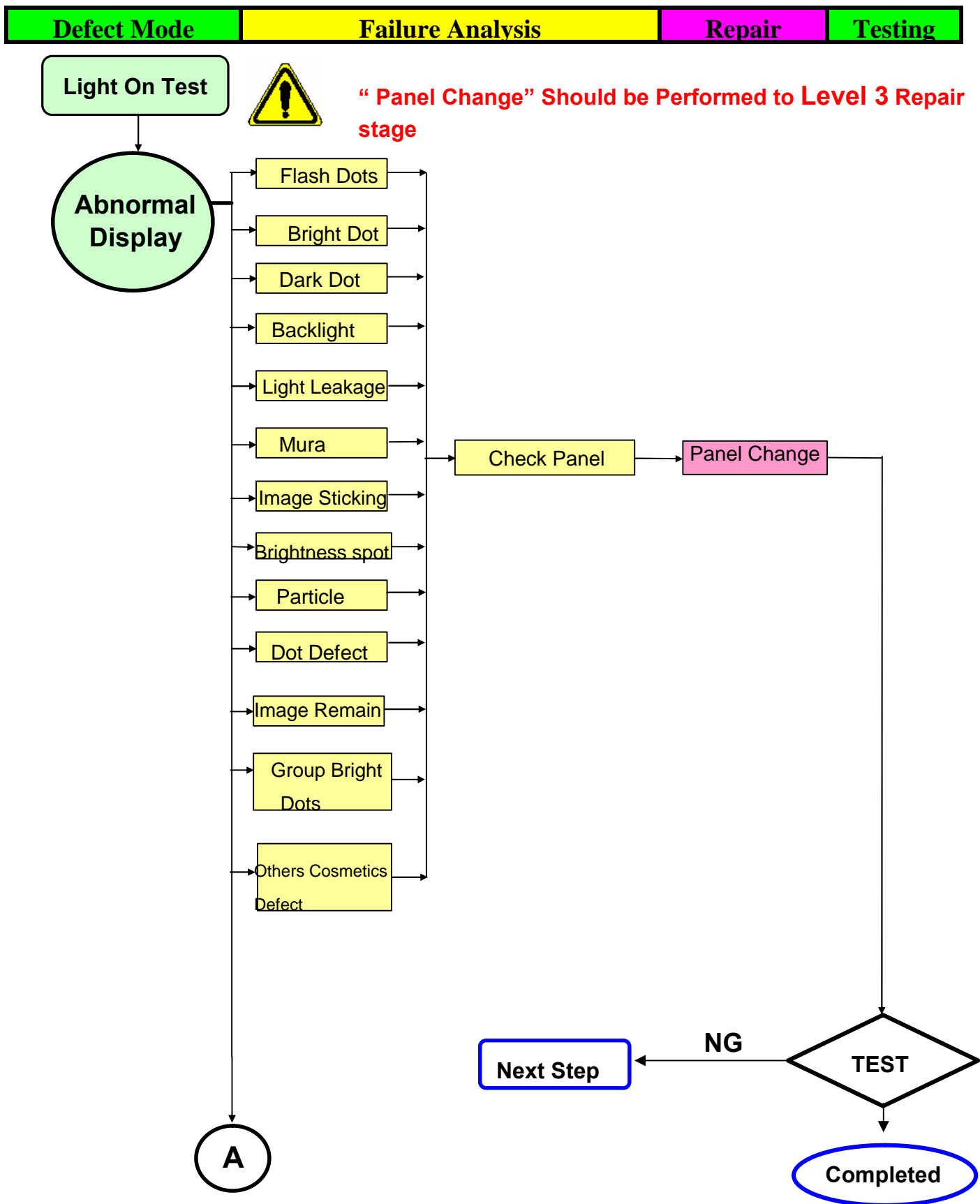


Step 3:

Join Seat Assy

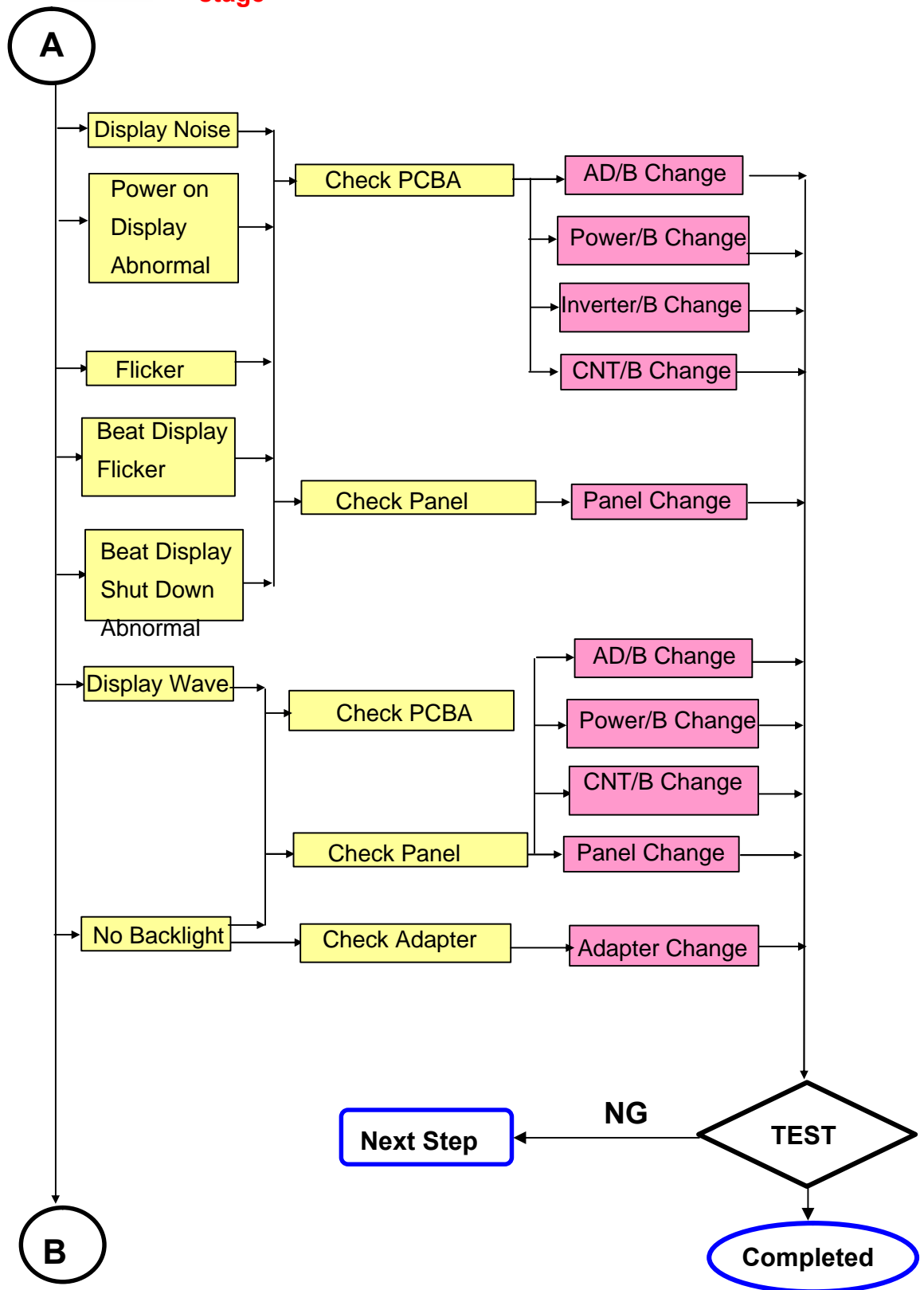


6. Troubleshooting Flow Chart



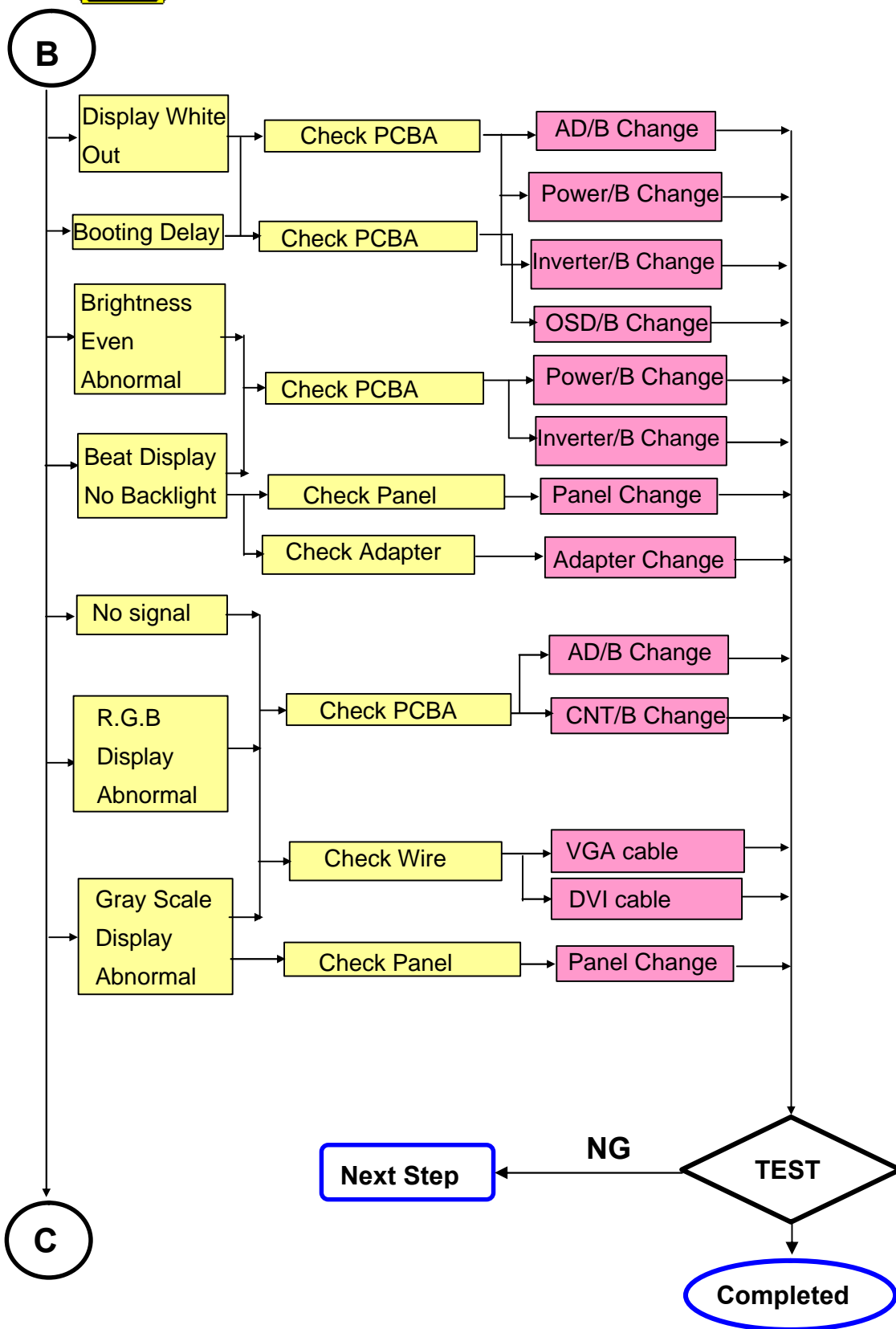


“ Panel Change” Should be Performed to Level 3 Repair stage



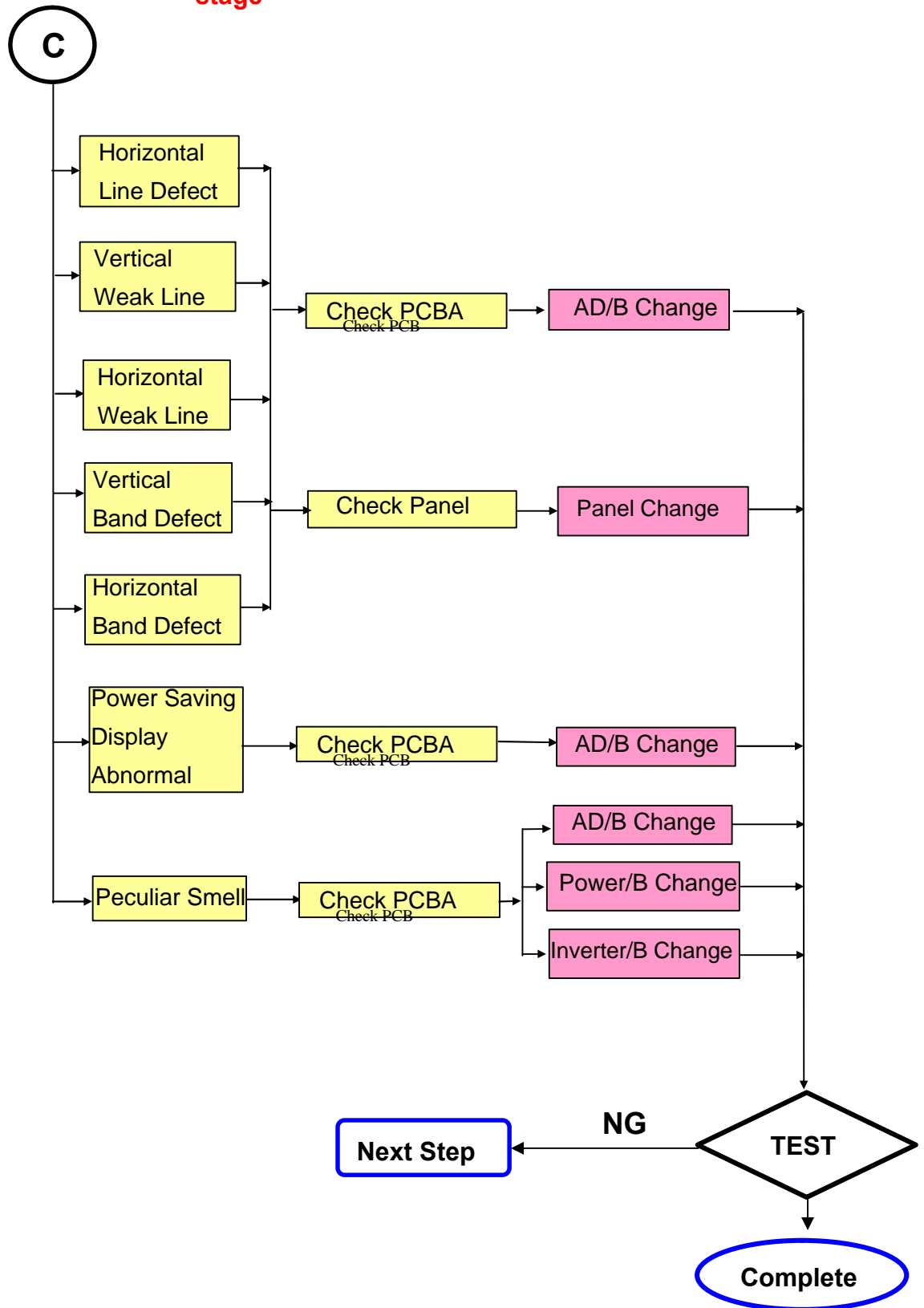


“ Panel Change ” Should be Performed to Level 3 Repair



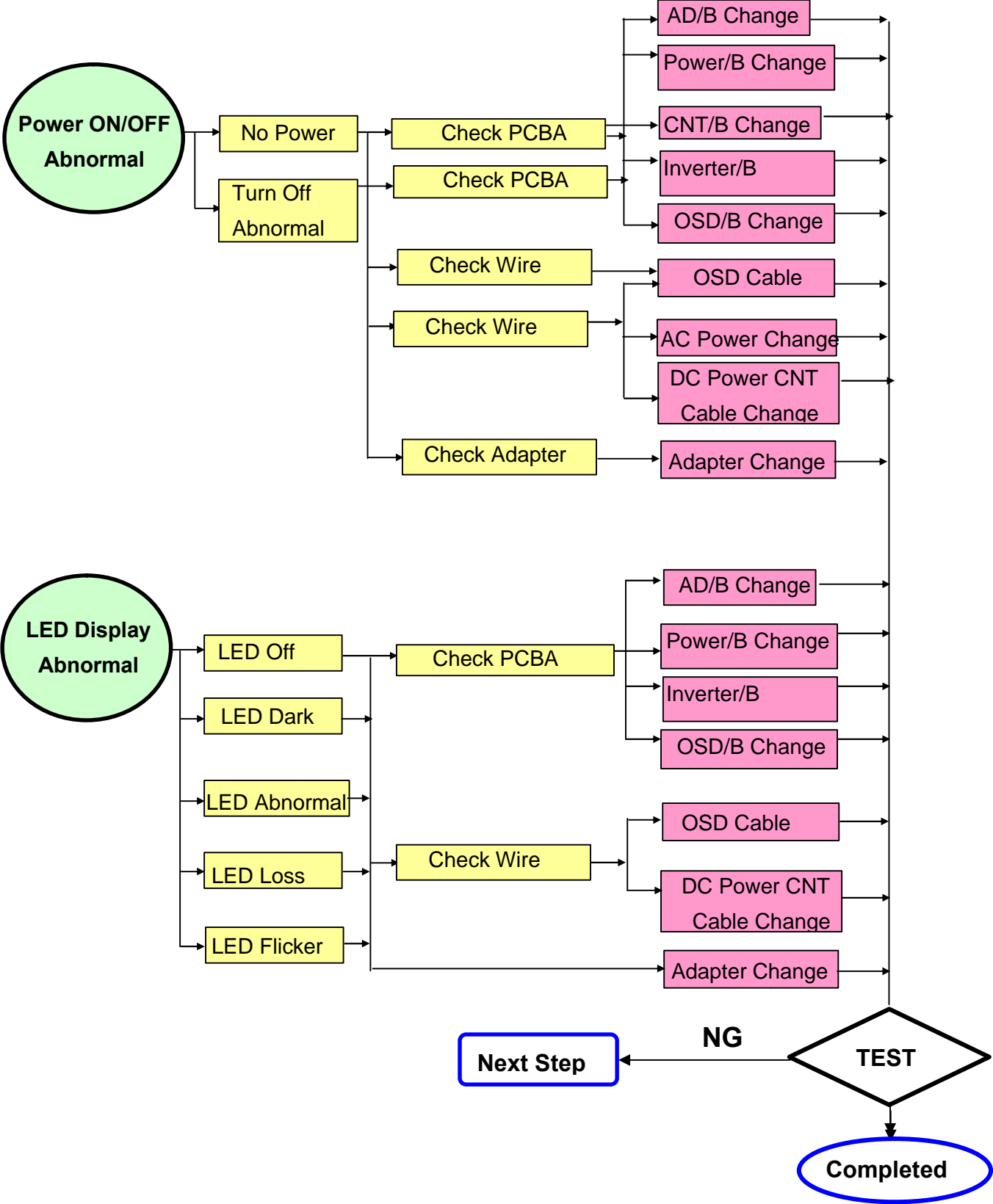


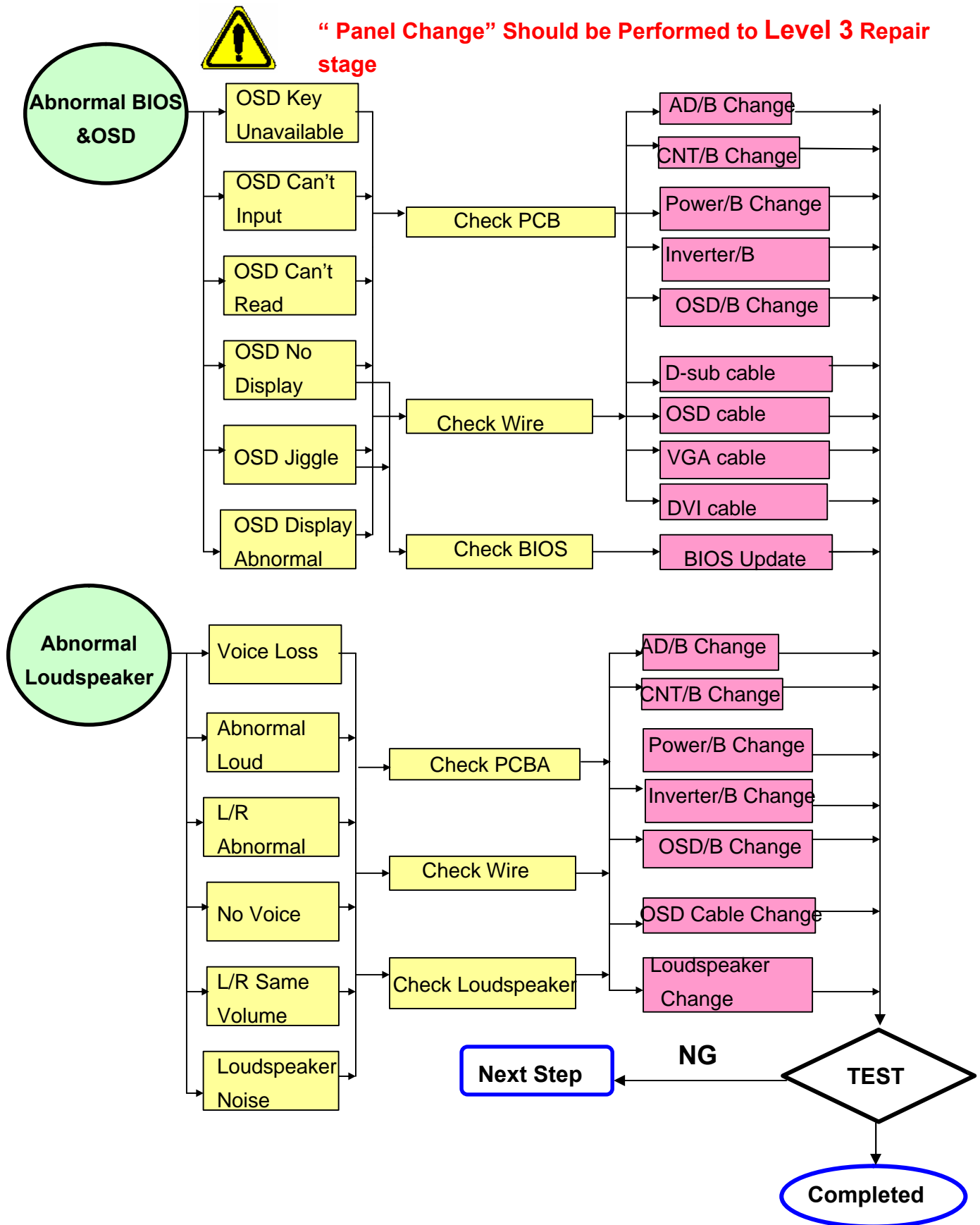
“ Panel Change ” Should be Performed to Level 3 Repair stage





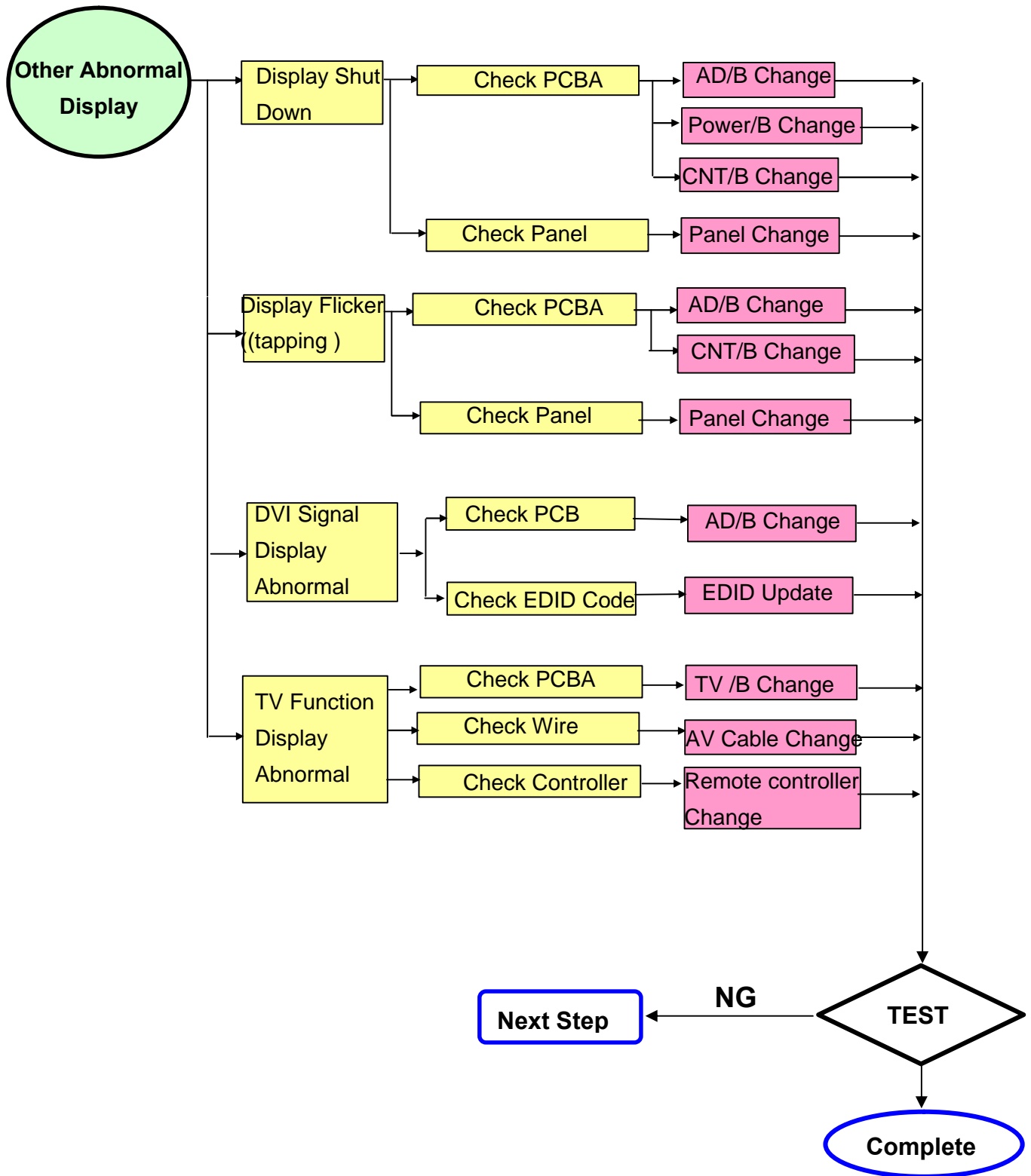
“ Panel Change ” Should be Performed to Level 3 Repair







“ Panel Change” Should be Performed to Level 3 Repair



Trouble Shooting Analysis

Check the information in this section to see if the problems can be solved before requesting repair.

Note : The consumers are only allowed to solve the problems described as below. Any unauthorized product modification, or failure to follow instructions supplied with the product will end the warranty immediately.

- **No image**
 - ◆ Make sure power button is ON.
 - ◆ Check whether the LCD monitor and computer power cords are plugged and whether there is a supply of power.
- **No Signal Input**
 - ◆ Check the signal connection between the computer and LCD monitor.
- **“Out of Range”**
 - ◆ Check the computer image output resolution and frequency and compare the value with the preset values (Please refer to [Appendix-Display Mode]).
- **Fuzzy Image**
 - ◆ Adjust Phase.
- **Image too bright**
 - ◆ Adjust brightness and contrast by OSD.
- **Image too dark**
 - ◆ Adjust brightness and contrast by OSD.
- **Irregular image**
 - ◆ Check the signal connection between the computer and LCD monitor.
 - ◆ Perform Auto Adjust.
- **Distorted image**
 - ◆ Reset the LCD monitor
 - ◆ Take off extra accessories (such as signal extension cord).
- **Image is not centered**
 - ◆ Use OSD Image Menu to adjust H_Position and V_Position.
 - ◆ Check image size setting.
 - ◆ Perform Auto Adjust.
- **Size is not appropriate**
 - ◆ Use OSD Image Menu to adjust H_Position and V_Position.
 - ◆ Check image size setting.
 - ◆ Perform Auto Adjust.
- **Uneven color**
 - ◆ Use OSD Color Menu to adjust color setting.
- **Color too dark**
 - ◆ Use OSD Color Menu to adjust color setting.
- **Dark area distorted**
 - ◆ Use OSD Color Menu to adjust color setting.
- **White color is not white**
 - ◆ Use OSD Color Menu to adjust color setting.

7. Recommended Spare Parts List

RECOMMENDED SPARE PARTS LIST (VE920m-1)

ViewSonic Model Number:VS10931

Rev: 1a

Serial No. Prefix: Q7T

Item	Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty
1	Accessories:						
	Lips Without Audio, DAC-19M001 BF, Ver:00 A, 19 V/2.5 A, 5 V/3 A, 4L, 4.9 mA, 2380 V		A-00004021	27-D003115			1
2	Power Cord, UL, SVT#18/3C, 75°C, LP-30B+LS-13, L=1830+/-50mm, Black, Linetek, 18AWG, No Bag		A-00005946	32E1818015 (AJ0E3T5A2M)			1
3	Power Cord, CCC, 300/500V, 0.75mm2, 3C, PC-323+COC-01, L=1830+/-50mm, Black, Linetek, 18AWG, No Bag		A-00005947	32E1818013 (AJ0E3T5C2M)			1
4	Power Cord, CEE, SP-023+IS-14, H05VV-F, 3G, 0.75mm2, CT-12, L=1800+/-50mm, I-SHENG, 18AWG, Black, No Bag		A-00005948	32E1818018 (AJ0E3T5E2M/K2M)			1
5	Power Cord, BSI, H05VV-F, 0.75mm2, 3C, LP-60L+LS-60, L=1830+/-50mm, Black, 18AWG, PSB Mark, Linetek, No Bag		A-00005949	32E1818060 (AJ0E3T5K2M)			1
6	Power Cord, VCTF 3G 0.75mm^2 CNS CT-08, Black, BSMI, 1800 mm, I Sheng		A-00005950	32-D001922 (AJ0E3T5W2M)			1
7	PC Board Assembly:						
	PCBA for , A190E3, A190E3-T-K, 303-02, Rev.31		B-00004023	35-D002998			1
8	Main Board , A190E3, A190E3-T-S1, 303-11, Rev.07		B-00005942	35-D003765			1
9	Cabinets:						
	Cover Hinge, A190E3-H0F, ABS PA-757N, BLACK C J91A11B5, Injex		C-00004026	40-D003812			1
10	Seat Assy, A170E1-H0P, ASSY, Black, Cherng Jyieh		C-00005847	40-D008680			1
11	Front Panel, A190E3-H0M, ASSY, Silver, Injex Plastic, Analog		C-00005943	40-D008790			1
12	Back Cover, A190E3-H0M, ASSY, Black, Injex Plastic		C-00005944	40-D008678			1
13	Cover A190E3-H0M, ASSY, Black		C-00005945	40-D008677			1
14	Cables:						
	Audio Cable, A150X2, 18AWG, 180cm, Black, JCE		CB-00000544	32F2818004			1
15	FFC_X, 0.50x45x62xCx(5/5)x(0.175x0.3), 45 Pins, no AL foil		CB-00004034	32-D000557			2
16	FFC-OSD, 22 Pins, TennRich		CB-00004035	32-D003899			1
17	Monitor Cable, A150X2, 30AWG, 180cm, Black, JCE		CB-00004287	32F3018003			1
18	Documentation						
	Safety Label for , A190E3-H0M, 120 mmx50 mm, Chang Huang, VSC VE920m-1, Green II		DC-00005951	77-D009065			1
19	User Guide for A190E3-H0M, Complex, 1C, Yi Ching, VSC VE920m-1+Caution Card, Green II		DC-00005953	76-D009060			1
20	CD-ROM for A190E3-H0M, Complex, 1C, Yi Ching, VSC VE920m-1Green II		DC-00005954	76-D009062			1
21	Carton Label for , A190E3-H0M, 76.2 mmx76.2 mm, Chang Huang, VSC VE920m-1, Green II		DC-00005957	77-D009064			1
22	Hardware:						
	Screw, M3*P0.5*4, φ5.5*2		HW-00000553	42A9930008			2000
23	Screw, M3*P1.27*12, φ5.5*2		HW-00000556	42A9990005			2000
24	SCREW, M4, P=0.7 mm, L=8 mm, Round Head, Phillips Cross Recess, plate Ni, Screw_with_Washer, SHYE CHING SCREW, head D8		HW-00004042	42-D000649			2000
25	SCREW, M4, P=0.7 mm, L=15 mm, Round Head, Phillips Cross Recess, Zn(Black), Screw_with_Washer, Hama Naka Motogawa/Shye Ching		HW-00005884	42-D001756			2000
26	Miscellaneous:						
	Stand-Off 4 #40*11.8		M-00000559	42A9940007			2000
27	Tape, Security Tape, OPP, L900xW50x0.045mm, VSC		M-00000560	7345511002			1
28	Packing Material:						
	PE Foam Bag, Protector, 570*600*0.13, A190E1-H01, white		P-00000595	7841919921			1
29	Generic Foam Set		P-00001347	30833			
30	Generic Box		P-00002515	20653			
31	Craft Box , A190E3-H0M, paper, printing, 474 mmx184 mmx475 mm, Chen Ti Paper, VSC VE920m-1, Green II		P-00005952	78-D009063			1
32	Craft Foam, A190E3-H0M, EPS, White, 460 mmx175 mmx210 mm, Telung, PS Foam(Left), Green II		P-00005955	78-D008901			1
33	Craft Foam, A190E3-H0M, EPS, White, 460 mmx175 mmx210 mm, Telung, PS Foam(Right), Green II		P-00005956	78-D008902			1
34	Plastics:						
	Panel Protector Film, A190E2-H06, mylar, 400X325X0.1 MM		PL-00005958	73-D001222			1

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.

Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate repeated cross checks of each item between this version and prior versions.

RECOMMENDED SPARE PARTS LIST (VE920mb-1)

ViewSonic Model Number: VS10931

Rev:1a

Serial No. Prefix: QEJ

Item	Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty
1	Accessories: Power Cord		A-00002058	32E1818013			1
2	PC Board Assembly: Control Board ,Rev.31		B-00004023	35-D002998			1
3			B-00005940	27-D003115			1
4	Power Supply Board Ver:00 Main Board,Rev.07		B-00005942	35-D003765			1
5	Cabinets: Cover Hinge		C-00004026	40-D003812			1
6			C-00005847	40-D008680			1
7	Seat Assy		C-00005944	40-D008678			1
8	Back Cover		C-00005945	40-D008677			1
9	Cover-Stand Assy		C-00008027	40-D012371			1
10	Cables: Front Panel (Bezel)		C-00008027	40-D012371			1
11	Audio Cable,180cm		CB-00000544	32F2818004			1
12	Flat Cable (FFC X, 0.50x45x62xCx(5/5)x(0.175x0.3)		CB-00004034	32-D000557			2
13	Flat Cable (FFC-OSD,22)		CB-00004035	32-D003899			1
14	Monitor Cable,180cm		CB-00004287	32F3018003			1
15	Documentation: Safety Label		DC-00008031	77-D012469			1
16	Carton Label		DC-00008032	77-D012470			1
17	User's Guide		DC-00008033	76-D009873			1
18	Hardware: Screw,M3*P0.5*4,φ5.5*2		HW-00000553	42A9930008			2000
19	Screw,M3*P1.27*12,φ5.5*2		HW-00000556	42A9990005			2000
20	SCREW,M4,P=0.7 mm,L=8 mm		HW-00004042	42-D000649			2000
21	SCREW,M4,P=0.7 mm,L=15 mm		HW-00005884	42-D001756			2000
22	SCREW,4,P=0 mm,L=11.8 mm		HW-00006041	42A9940007			2000
23	Miscellaneous: Tape,Security Tape,OPP,L900xW50x0.045mm		M-00000560	7345511002			1
24	Packing Material: PE Foam Bag		P-00000595	7841919921			1
25	Generic Foam Set		P-00001347	30833			
26	GenericCarton		P-00002515	20653			
27	Craft Foam(Left)		P-00005955	78-D008901			1
28	Craft Foam(Right)		P-00005956	78-D008902			1
29	Craft Box		P-00008021	78-D012473			1
30	Plastics: Panel Protector Film		PL-00005958	73-D001222			1

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.

Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate repeated cross checks of each item between this version and prior versions.

BOM LIST (VE920m-1)

ViewSonic Model Number: VS10931

Rev: 1a

Serial No. Prefix: Q7T

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	N/A	MJ0E501K01	19" Semi Product,19E5-L01,Default			1
2	N/A	L3J005XXXX	19" Cr TN (Panel Base)	Common	L4J005XXXX	1
3	N/A	73-C000047	ACF,COG,AC-8405Z-23 1.5mmX100M,100000 mmx1.5 mm,COG-ACF,Green I	Common	7344191016	0.00318
4	N/A	36-D001339	Driver IC,Scan,A170E1,HX8633CPD400,256Channel,Green I	Common	36X8633401, 36-D001185	4
5	N/A	7344191017	ACF,AC-4251FY-16,100M/RL,Green I	Common		0.00398
6	N/A	36X8002971	Driver IC,COF,Data,HX8002CB97,COF,M190E5-L01,384Channel,Green I	Common		10
7	N/A	35-D002646	PCBA for ,A190E3-H,A190E3-H-X,301-03,Rev.03,ODM,Green II	Common	35-D000669	1
8	N/A	73-D002676	ACF,PCB,AC-9825R-35,100000 mmx1.5 mm,PCB-ACF,Green I	Common	7344191004 7344100000	0.00398
9	N/A	7349951002	Silicone,TORAY/-9187L,330g	Common		0.4
10	N/A	PJ0EFT0Q06	Olympic,19"W,Function BOM,D-sub+Audio,TSU17AK+8002F			1
11	HW-00005679	42A9930008	SCREW,3,P=0.5 mm,L=4 mm,Pan Head,Green I	Common		15
12	M-00000559	42A9940007	SCREW,4,P=0 mm,L=11.8 mm,Hexagon Stand Off,Socket,Green I	Common		2
13	HW-00004042	42-D000649	SCREW,M4,P=0.7 mm,L=8 mm,Round Head,Phillips Cross Recess,plate color Zn,Screw with Washer,Shye Ching/Hama Naka Motogawa,head D8,Green I	Common		2
14	N/A	27-D003115	Lips Without Audio,DAC-19M001 BF,Ver:01 A,19 V/2.5 A,5 V/3 A,4L,4.9 mA,2380 V,RoHS	Common		1
15	B-00005942	35-D003765	PCBA for ,A190E3,A190E3-T-S1,303-11,Rev.07,ODM,Green I	Common		1
16	N/A	41-D004053	Metal Frame Front Assy,A190E3,ASSY,SECC 10.6+mylar,Green I	Common		1
17	CB-00004034	32-D000557	FFC,0.50x45x62xCx(5/5)xx(0.175x0.3),45 Pins,no AL foil,Green I	Common		2
18	N/A	41-D002610	Cover AD Assy,A190E3,secc,cover ad+mylar,D SUB/AUDIO,Green I	Common		1
19	N/A	44-D003904	Backlight Unit,A190E3,CLT BL,HAT,Green I	Common		1
20	N/A	73-D004702	Isolated Tape,PET,147 mmx137 mmx0.1 mm,Green I	Common		1
21	N/A	PJ0EAS000(A2M) PJ0EACS000(C2M) PJ0EAE1000(E2M) PJ0EAKU000(K2M) PJ0EAW5000(W2M)	Olympic,19",Accessory BOM,D-sub+Audio,USA 3 pin,Black,Power built-in;RoHS Olympic,19",Accessory BOM,D-sub+Audio,China 3 pin,Black,Power built-in;RoHS Olympic,19",Accessory BOM,D-sub+Audio,European / Korea 2 pin,Black,Power built-in;RoHS Olympic,19",Accessory BOM,D-sub+Audio,None,Black,Two power cords of UK & EU for VSC,Power built-in;RoHS Olympic,19",Accessory BOM,D-sub+Audio,Taiwan 3 pin,Black,Power built-in;RoHS			1
22	N/A	32F2818004	Audio Cable,A150X2,18AWG,180cm,Black,JCE,Green I	Common	32F2818011	1
23	CB-00004287	32F3018003	Accessory Cable,D-Sub,BLACK,A150X2,Green I	Common	32-D002132	1
24	A-00000458	32E1818015	Power Cord,UL,SVT#18/3C,LP-30B+LS-13,L=1830+/-50mm,Black,Linetek,18AWG,No Bag,Green I	A2M	32E1818019	1
25	A-00002058	32E1818013	Power Cord,CCC,300/500V,0.75mm2,3C,PC-323+COC-01,L=1830+/-50mm,Black,Linetek,18AWG,No Bag,Green I	C2M	32E1818021	
26	A-00002059	32E1818018	Power Cord,SP-023+IS-14,Black,CEE,1800 mm,Green I	E2M,K2M	32E1818016	1
27	A-00002057	32E1818060	Power Cord,BS1,H05VV-F,0.75mm2,3C,LP-60L+LS-60,L=1830+/-50mm,Black,18AWG,PSB Mark,Linetek,No Bag,Green I	K2M	32E1818020	1
28	A-00004047	32-D001922	Power Cord,VCTF 3G 0.75mm^2 CNS CT-08,Black,BSML,1800 mm,GreenII	W2M	32-D002330	1
29	N/A	PJ0E12M000(A2M) PJ0E12M002(C2M) PJ0E12M001(E2M) PJ0E12M003(K2M) PJ0E12M004(W2M)	Olympic,19",ID BOM,D-sub+Audio,USA,Silver Black,VSC, Olympic,19",ID BOM,D-sub+Audio,China,Silver Black,VSC, Olympic,19",ID BOM,D-sub+Audio,European,Silver Black,VSC, Olympic,19",ID BOM,D-sub+Audio,UK,Silver Black,VSC, Olympic,19",ID BOM,D-sub+Audio,TWN,Silver Black,VSC,			1
30	HW-00000556	42A9990005	Screw,M3*P1.27*12,g5.5*2,Steel,Green I	Common		2
31	HW-00005884	42-D001756	SCREW,M4,P=0.7 mm,L=15 mm,Round Head,Phillips Cross Recess,Zn(Black),Screw with Washer,Green I	Common		4
32	B-00004023	35-D002998	PCBA for ,A190E3,A190E3-T-K,303-02,Rev.31,ODM,Green II	Common		1
33	C-00004026	40-D003812	Cover Hinge,A190E3-H0F,ABS PA-757N,BLACK C J91A11B5,Green II	Common		1
34	CB-00004035	32-D003899	FFC,22 Pins	Common		1
35	N/A	73-D004605	Isolated Tape,PET,384 mmx48 mmx0.05 mm,Green I	Common		1
36	C-00005944	40-D008678	Rear Assy,A190E3-H0M,ASSY,Black,Green II	Common		1
37	C-00005943	40-D008790	Bezel Assy,A190E3-H0M,ASSY,Silver,Analog,Green II	Common		1
38	C-00005945	40-D008677	Stand Assy,A190E3-H0M,ASSY,Black,Green II	Common		1
39	MULTIPLE MATCH	73-D001222	Panel Protector Film,A190E2-H06,mylar,400X325X0.1 MM,Green I	Common		1
40	DC-00005951	77-D009065	Safety Label for ,A190E3-H0M,120 mmx50 mm,VSC VE920m-1,Green II	Common		1
41	N/A	77-D009061	SN Label for ,A190E3-H0M,VSC VE920m-1,Green II	A2M,E2M,K2M,W2M		1
42	N/A	77-D009059	SN Label for ,A190E3-H0M,50 mmx25 mm,VSC VE920m-1 for China,Green II	C2M		1
43	HW-00002076	7841595111	Corner Protector,paper,50 mmx50 mmx1850 mm,Green I	Common		0.0083
44	M-00000592	7841995111	Separator, A190E1-H01,1130 mmx955 mmx11 mm,Default,Non Green	Common		0.021
45	P-00000595	7841919921	Bag,570 mmx600 mmx0.13 mm,White,Non Green	Common		1
46	DC-00000586	7741999141	Label,Pallet Barcode Label,75x40,A190E2-H03,VSC,Non Green	Common		0.021
47	N/A	7345511002	Tape,Security Tape,OPP,1.900xW50x0.045mm,VSC,Non Green	Common		0.085
48	N/A	77-D000114	Customer Label,A170E1-H0G,180 mm,100 mm,Green I	C2M		1
49	N/A	77-D000118	Customer Label,A170E1-H0G,130 mm,80 mm,Green I	C2M		1
50	N/A	78-D000275	Warranty Card,A170E1-H0G,143 mmx210 mm,VSC VA712,Green I	C2M		1
51	N/A	77-D001323	Customer Label for ,A170E1-H0G,15 mmx15 mm,QC Pass Label_VSC_ for China,Green I	C2M		1
52	N/A	78-D001494	Pallet,A190E1-H01,Wooden,150 mmx970 mmx135 mm,Green I	Common		0.021
53	N/A	73-D005094	Tape,20 mmx20 mmx0.1 mm,PET,Green I	Common		1
54	C-00005847	40-D008680	Seat Assy,A170E1-H0P,ASSY,Black,Green II	Common		1
55	P-00005955	78-D008901	Cushion,A190E3-H0M,EPS,White,460 mmx175 mmx210 mm,PS_Foam(Left),Green II	Common		1
56	P-00005956	78-D008902	Cushion,A190E3-H0M,EPS,White,460 mmx175 mmx210 mm,PS_Foam(Right),Green II	Common		1
57	N/A	79-D009027	Shipping Package Information for ,A190E3-H0M,Viewsonic	Common		1
58	DC-00005953	76-D009060	MENU for A190E3-H0M,Complex,1C,VSC VE920m-1+Caution Card,Green II	A2M		1
59	N/A	76-D009062	MENU for A190E3-H0M,Complex,1C,VSC VE920m-1 include CD-ROM,Green II	C2M,E2M,K2M,W2M		1
60	DC-00005957	77-D009064	Carton Label for ,A190E3-H0M,76.2 mmx76.2 mm,VSC VE920m-1,Green II	Common		1
61	P-00005952	78-D009063	Carton,A190E3-H0M,474 mmx184 mmx475 mm,VSC VE920m-1,Green II	Common		1

BOM LIST (VE920mb-1)

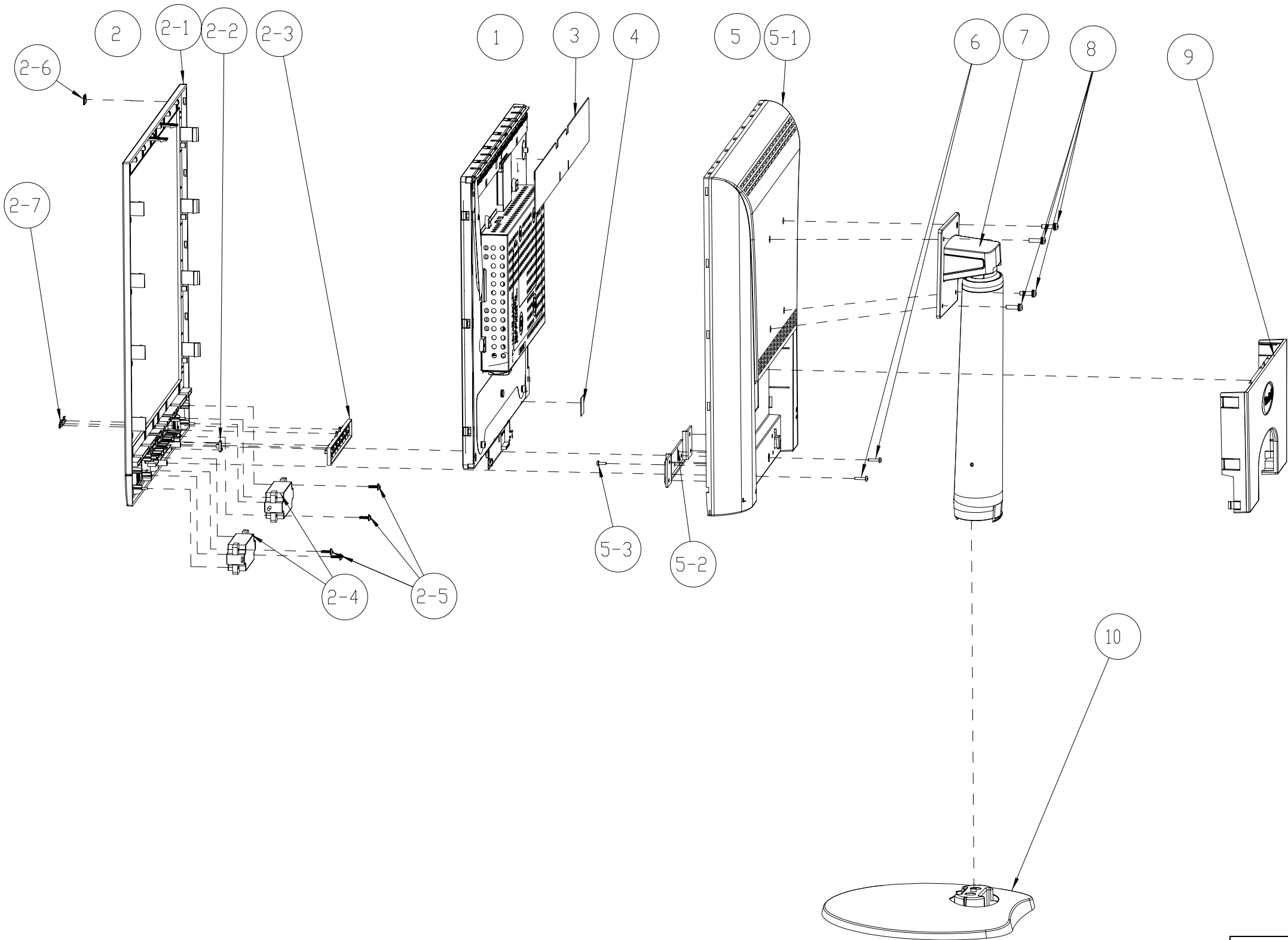
ViewSonic Model Number : VS10931

Rev.:1a

Serial No. Prefix: QEJ

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	N/A	MJ0E501K01	19" Semi Product,19E5-L01,Default	1
2	N/A	7349951002	Silicone	0.4
3	N/A	7344191017	ACF,AC-4251FY-16,100M/RL,Green I	0.004
4	N/A	36X8002971	Driver IC,COF,Data,COF,M190E5-L01,Green I	10
5	N/A	L3J005XXXX	19" Cr TN 8ms (Panel Base)	1
6	N/A	36-D001339	Driver IC,Scan,A170E1,Green II	4
7	N/A	73-C000047	ACF,COG,AC-8405Z-23 1.5mmX100M,100000 mmx1.5 mm,COG-ACF,Green I	0.003
8	N/A	35-D002646	PCBA for ,A190E3-H,A190E3-H-X,301-03,Rev.03,ODM,Green II	1
9	N/A	73-D002676	ACF,PCB,AC-9825R-35,100000 mmx1.5 mm,PCB-ACF,Green I	0.004
10	N/A	PJ0EACS000	Olympic,19",Accessory BOM,D-sub+Audio, 3 pin,Black,Power built-in;RoHS	1
11	A-00002058	32E1818013	Power Cord,PC-323+COC-01,Black,CCC,1830 mm,Green I	1
12	CB-00000544	32F2818004	Accessory Cable,Audio,NONE,Black,Pins-Pins,Green I	1
13	CB-00004287	32F3018003	Accessory Cable,D-Sub,BLACK,A150X2,Green I	1
14	N/A	PJ0EFT0Q06	Olympic,19"W,Function BOM,D-sub+Audio	1
15	HW-00000553	42A9930008	SCREW,3,P=0.5 mm,L=4 mm,Pan Head,Green I	15
16	HW-00006041	42A9940007	SCREW,4,P=0 mm,L=11.8 mm,Hexagon Stand Off,Socket,Green I	2
17	CB-00004034	32-D000557	FFC,0.50x45x62xCx(5/5)x(0.175x0.3),45 Pins,Green I	2
18	HW-00004042	42-D000649	SCREW,M4,P=0.7 mm,L=8 mm,Round Head,Green I	1
19	N/A	41-D002610	Cover AD Assy,A190E3,cover_ad+mylar,D_SUB/AUDIO,Green I	1
20	B-00005940	27-D003115	Lips Without Audio,DAC-19M001 BF,Ver:01 A,19 V/2.5 A,5 V/3 A,4L,4.9 mA,2380 V,RoHS	1
21	B-00005942	35-D003765	PCBA for ,A190E3,A190E3-T-S1,303-11,Rev.07,ODM,Green II	1
22	N/A	44-D003904	Backlight Unit,A190E3,Green I	1
23	N/A	41-D004053	Metal Frame Front Assy,A190E3,ASSY,SECC t0.6+mylar,Green I	1
24	N/A	10-D009090	Software (EDID_D-SUB),A190E3,Checksum(83),19 Analog Port,Green II	1
25	N/A	10-D010801	Software (BIOS),A190E3,19E3TSA004,Checksum(0x7BC5),MTV312 Analog+Audio,Green II	1
26	N/A	PJ0EI1M300	Olympic,19",ID BOM,D-sub+Audio,Black,Height adjustable model	1
27	P-00000595	7841919921	Bag,570 mmx600 mmx0.13 mm,Green I	1
28	M-00000560	7345511002	Tape,A170E1-H0P,900 mmx50 mmx0 mm	0.058
29	PL-00005958	73-D001222	Panel Protector Film,A190E2-H06,mylar,400X325X0.1 MM,Green I	1
30	HW-00005884	42-D001756	SCREW,M4,P=0.7 mm,L=15 mm,Round Head,Green I	4
31	N/A	78-D002030	Corner Protector,5mm,A170E1-H0M,50 mmx50 mmx1850 mm,Green I	0.083
32	N/A	77-D002070	SN Label for ,A170E1-H0M,75 mmx40 mm,Pallet Bar Code Label, A170E1-H0M,Green I	0.021
33	N/A	42-D002091	SCREW,M3,P=1.27 mm,L=12 mm,Pan Head,Green I	2
34	B-00004023	35-D002998	PCBA for ,A190E3,A190E3-T-K,303-02,Rev.31,Green II	1
35	C-00004026	40-D003812	Cover Hinge,A190E3-H0F,ABS PA-757N,BLACK C_J91A11B5,Green II	1
36	CB-00004035	32-D003899	FFC,22 Pins,Green I	1
37	N/A	73-D004605	Isolated Tape,PET,384 mmx48 mmx0.05 mm,Green I	1
38	N/A	73-D005094	Tape,20 mmx20 mmx0.1 mm,Green I	1
39	N/A	77-D005180	Customer Label for ,A170E1-H0G,180 mmx100 mm,Green II	1
40	N/A	77-D005193	Customer Label for ,A170E1-H0G,15 mmx15 mm,Green II	1
41	N/A	77-D005191	Customer Label for ,A170E1-H0G,130 mmx80 mm,Green II	1
42	N/A	78-D005895	SeparatorA170E1-H0G,1130 mmx955 mmx11 mm,Green II	0.021
43	N/A	78-D005934	Pallet,A170E1-H0G,Wooden,N/A,1150 mmx970 mmx135 mm,Green II	0.021
44	C-00005847	40-D008680	Seat Assy,A170E1-H0P,ASSY,Black,Green II	1
45	C-00005944	40-D008678	Rear Assy,A190E3-H0M,ASSY,Black,Green II	1
46	C-00005945	40-D008677	Stand Assy,A190E3-H0M,ASSY,Black,Green II	1
47	P-00005955	78-D008901	Cushion,A190E3-H0M,EPS,White,460 mmx175 mmx210 mm,PS_Foam(Left),Green II	1
48	P-00005956	78-D008902	Cushion,A190E3-H0M,EPS,White,460 mmx175 mmx210 mm,PS_Foam(Right),Green II	1
49	N/A	79-D009027	Shipping Package Information for ,A190E3-H0M	1
50	DC-00008033	76-D009873	MENU for A190E3-H0M,Green II	1
51	N/A	78-D010933	Warranty Card,A170E1-H0G,Green II	1
52	C-00008027	40-D012371	Bezel Assy,A190E3-H0M,ASSY,Black,Green II	1
53	N/A	77-D012475	SN Label for ,A190E3-H0M,50 mmx25 mm,VE920mb,Green II	1
54	P-00008021	78-D012473	Carton,A190E3-H0M,474 mmx184 mmx477 mm,VE920mb,Green II	1
55	DC-00008032	77-D012470	Carton Label for ,A190E3-H0M,76.2 mmx76.2 mm,VE920mb,Green II	1
56	DC-00008031	77-D012469	Safety Label for ,A190E3-H0M,120 mmx50 mm,VE920mb,Green II	1

8. Exploded Diagram and Exploded Parts List



ViewSonic Corporation		
Model		
Title		
Date		Rev:

EXPLODED PARTS LIST (VE920m-1)

ViewSonic Model Number: VS10931

Rev: 1a

Serial No. Prefix: Q7T

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	N/A	MJ0E501K01	ISM_A190E3_HAT	1
2	C-00005943	40-D008790	BEZEL ASSY	1
2-1	N/A	40-D003809	BEZEL	1
2-2	N/A	40-D003811	LENS	1
2-3	N/A	40-D003805	KEYPAD	1
2-4	N/A	33-D000377	SPEAKER 4ohm 2w	2
2-5	N/A	42-D001524	SCREW T2.5*10L	4
2-6	N/A	77-D000226	VSC BIRDLOGO	1
2-7	N/A	77-D000224	VSC NAME PLATE	1
3	N/A	73-D004605	MYLAR PCBX	1
4	N/A	73-D005094	MYLAR LIGHT LEAKAGE	1
5	C-00005944	40-D008678	REAR ASSY	1
5-1	N/A	40-D003813	REAR	1
5-2	N/A	41-D003804	SUPPORT PLATE	1
5-3	HW-00000557	42A9930017	SCREW T3*8L	1
6	HW-00000556	42A9990005	SCREW T3*12L	2
7	C-00005945	40-D008677	STAND ASSY	1
8	N/A	42-D000314 42A9930013	SCREW M4*15L	4
9	C-00004026	40-D003812	COVER HINGE	1
10	C-00005847	40-D008680	SEAT ASSY	1

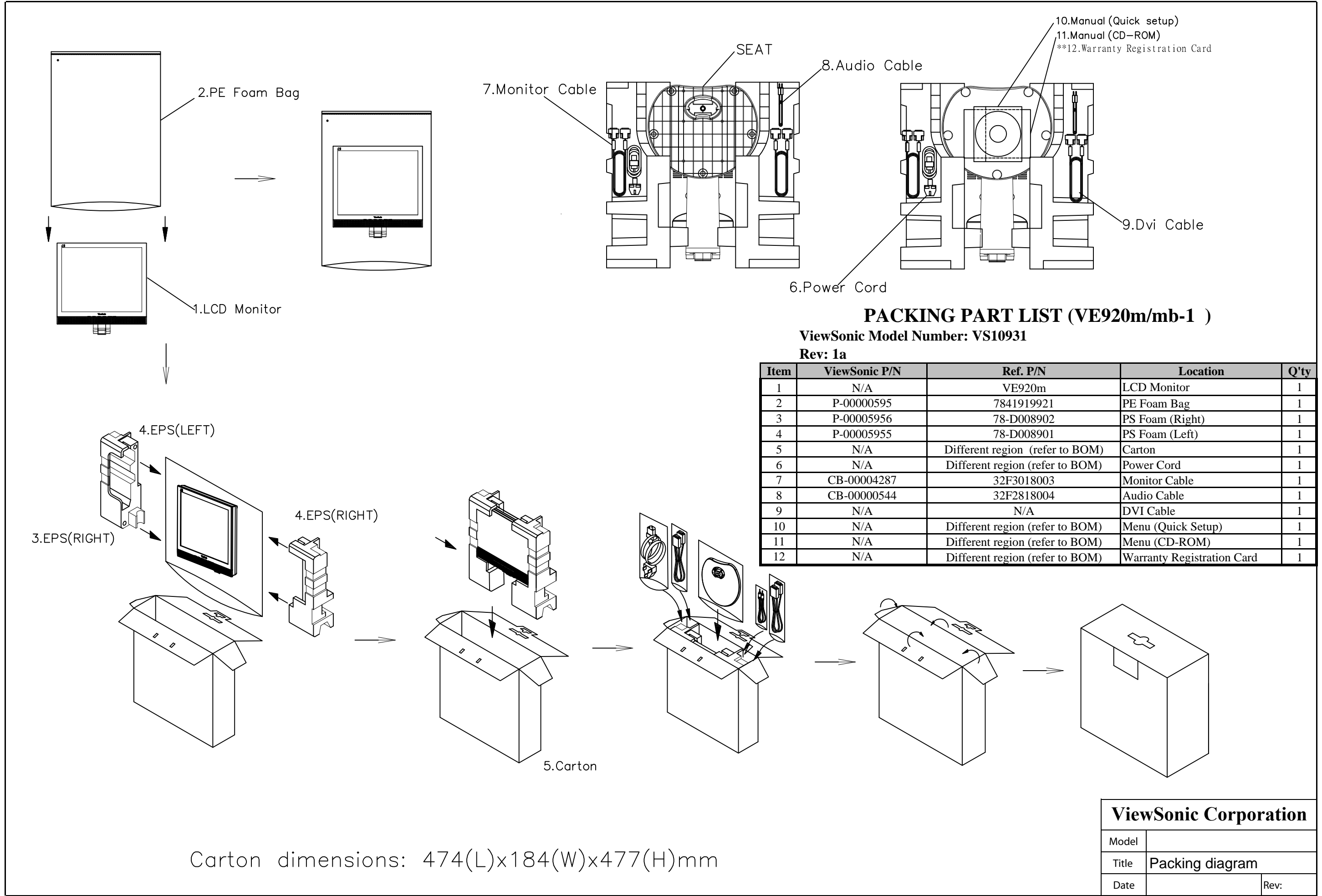
EXPLODED PARTS LIST (VE920mb-1)

ViewSonic Model Number: VS10931

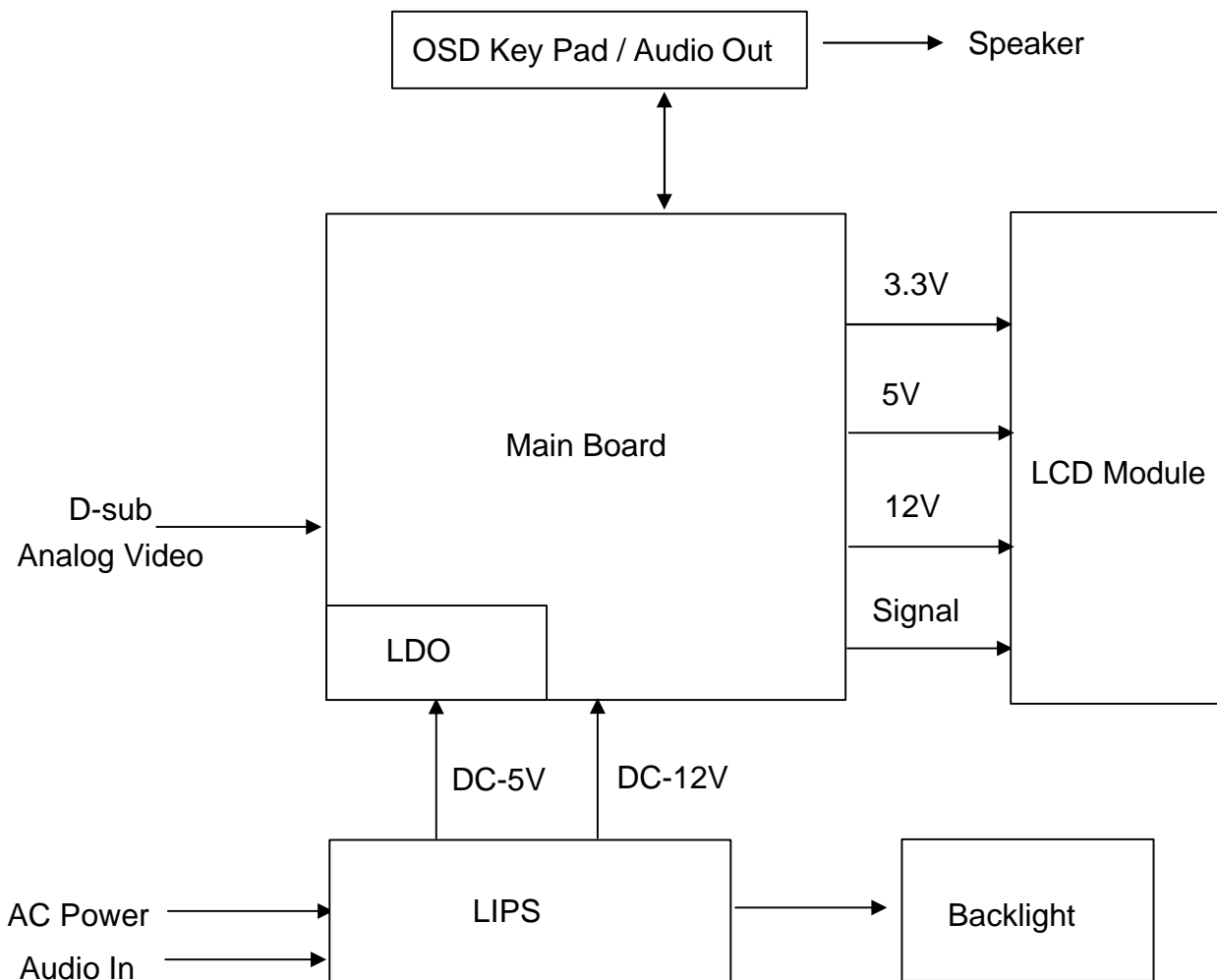
Rev: 1a

Serial No. Prefix: QEJ

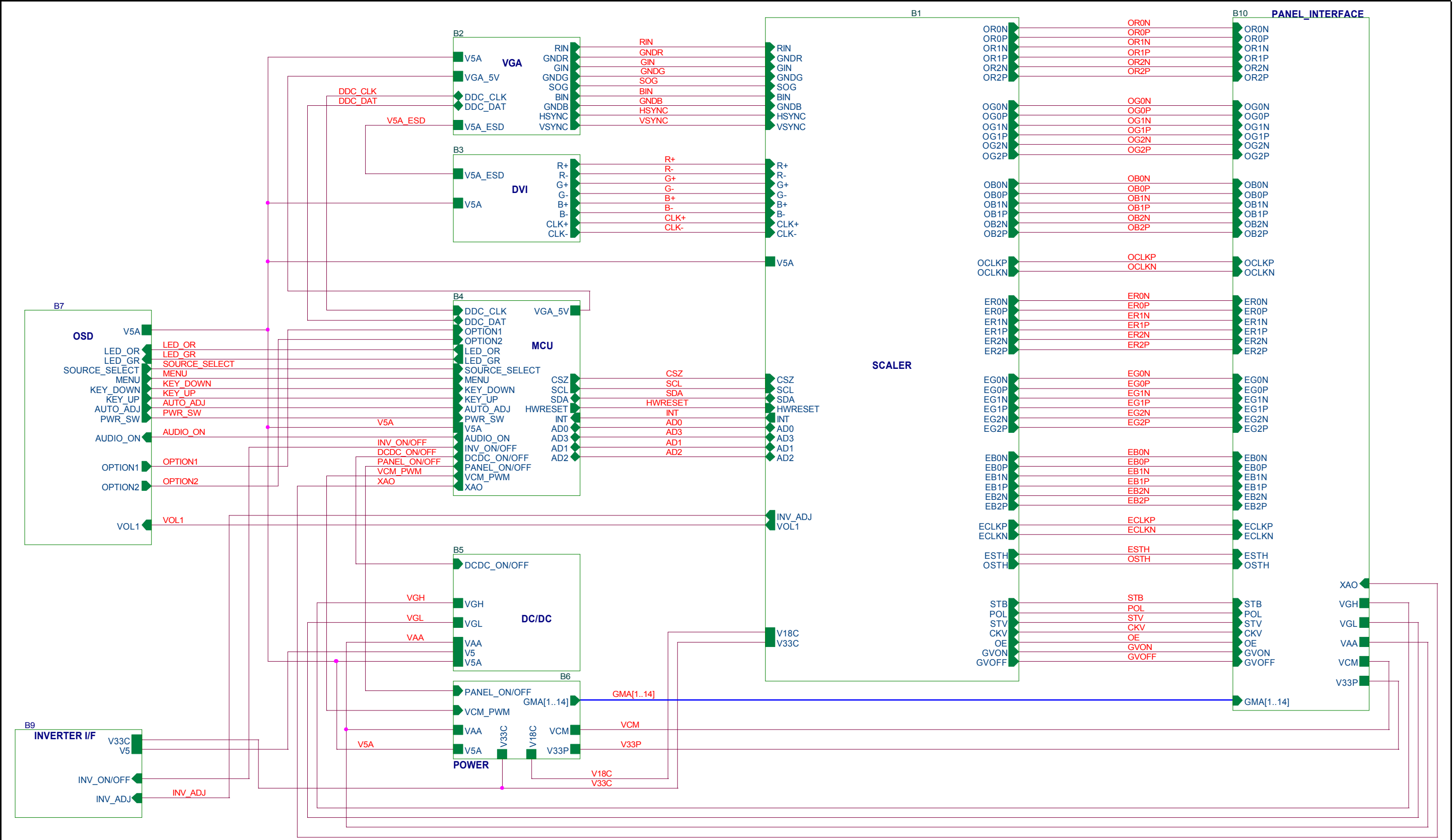
Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	N/A	MJ0E501K01	ISM_A190E3_HAT	1
2	C-00008027	40-D012371	BEZEL ASSY	1
2-1	N/A	40-D003809	BEZEL	1
2-2	N/A	40-D003811	LENS	1
2-3	N/A	40-D003805	KEYPAD	1
2-4	N/A	33-D000377	SPEAKER 4ohm 2w	2
2-5	N/A	42-D001524	SCREW T2.5*10L	4
2-6	N/A	77-D000226	VSC BIRDLOGO	1
2-7	N/A	77-D000224	VSC NAME PLATE	1
3	N/A	73-D004605	MYLAR PCBX	1
4	N/A	73-D005094	MYLAR LIGHT LEAKAGE	1
5	C-00005944	40-D008678	REAR ASSY	1
5-1	N/A	40-D003813	REAR	1
5-2	N/A	41-D003804	SUPPORT PLATE	1
5-3	HW-00000557	42A9930017	SCREW T3*8L	1
6	HW-00000556	42A9990005	SCREW T3*12L	2
7	C-00005945	40-D008677	STAND ASSY	1
8	N/A	42-D000314 42A9930013	SCREW M4*15L	4
9	C-00004026	40-D003812	COVER HINGE	1
10	C-00005847	40-D008680	SEAT ASSY	1



9. Block Diagram

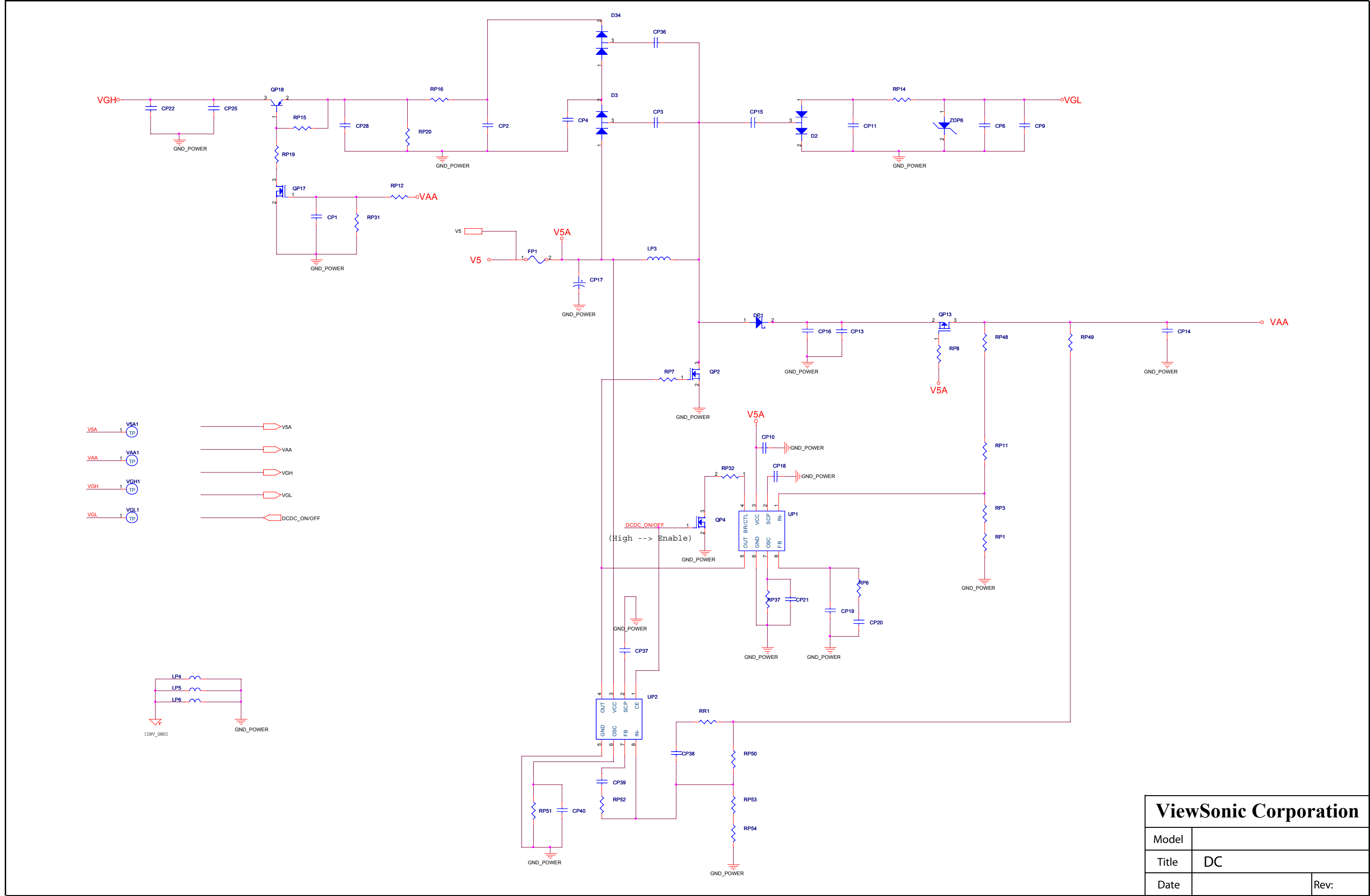


10. Schematic Diagrams

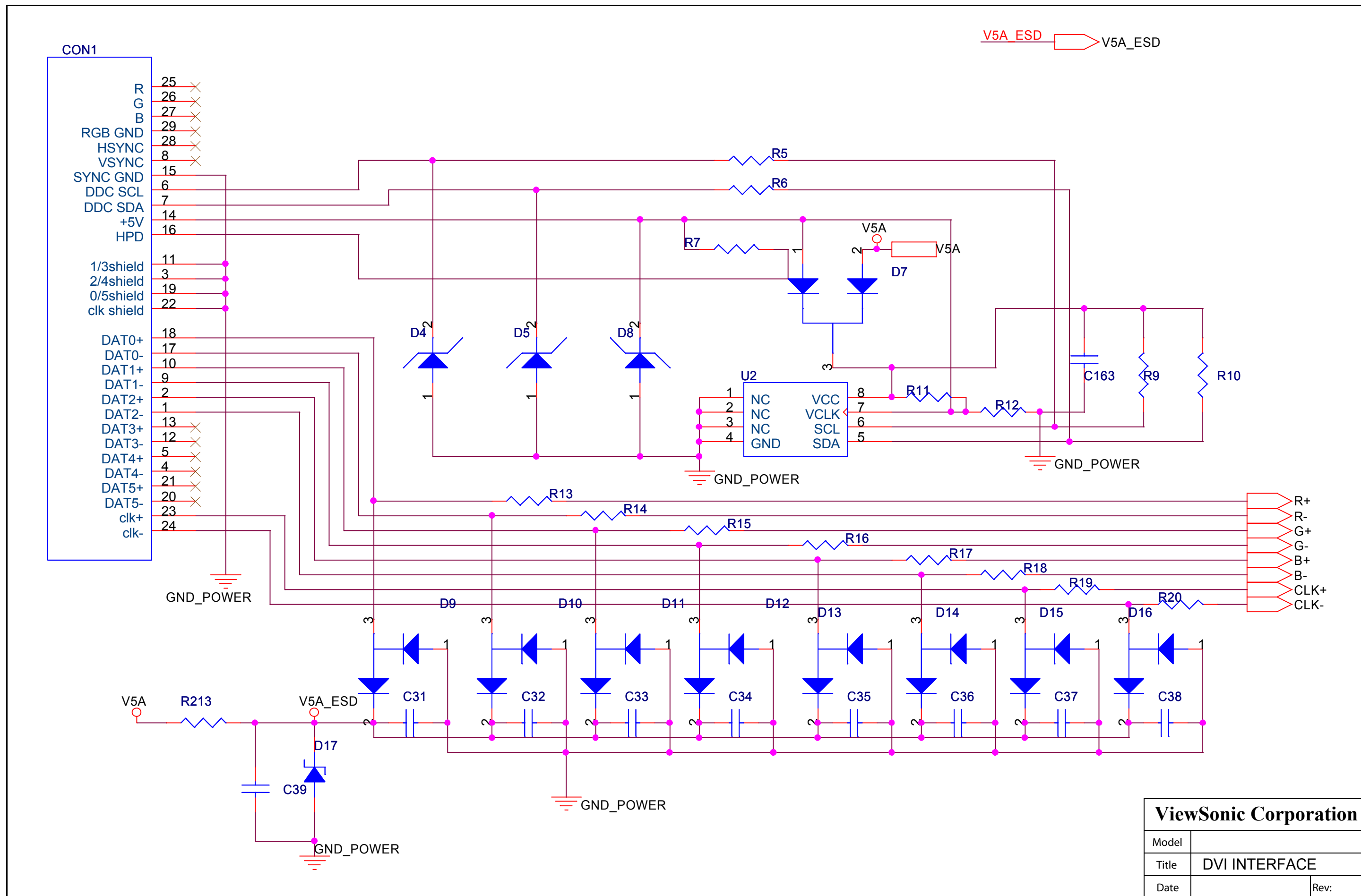


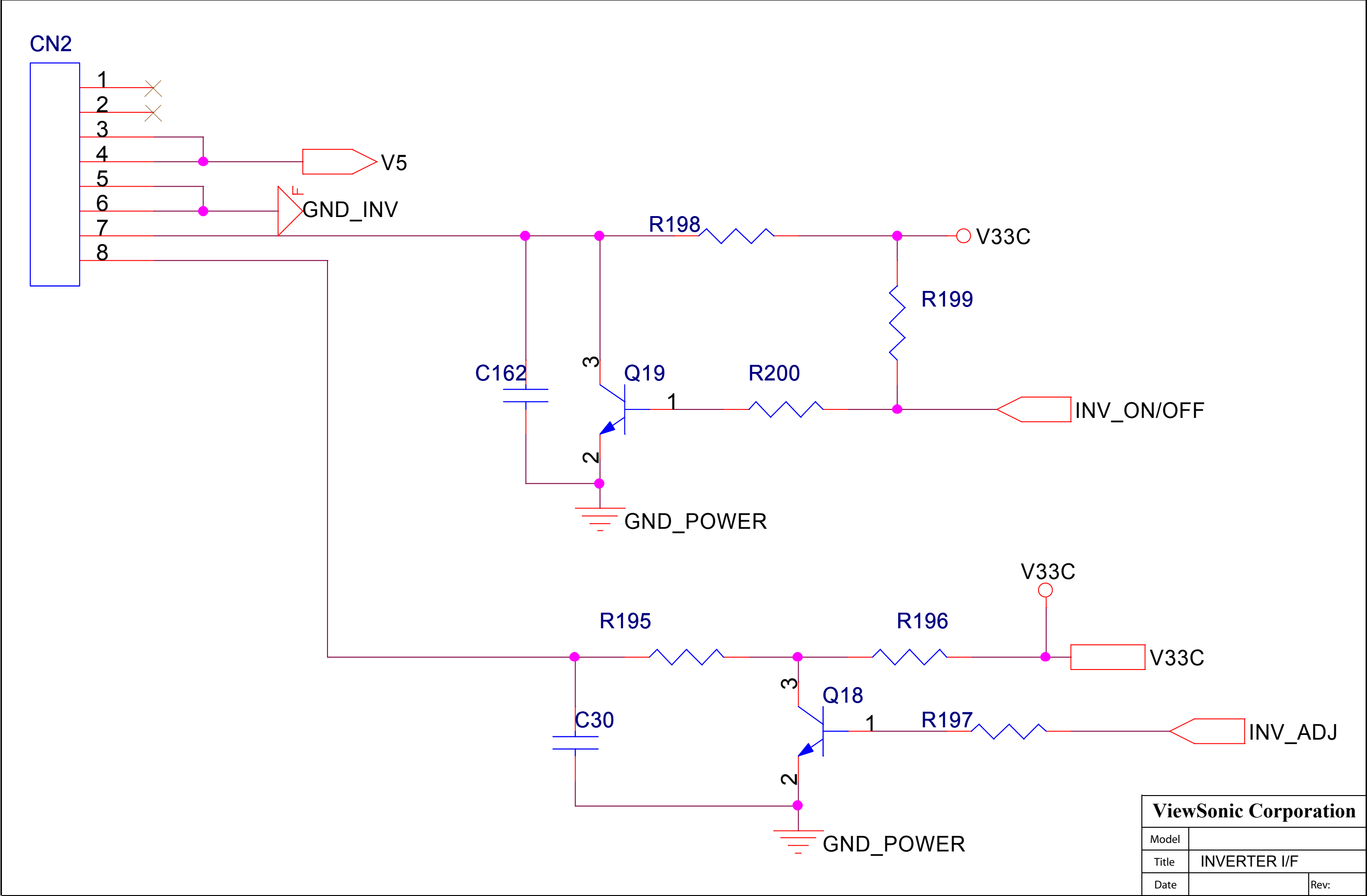
ViewSonic Corporation

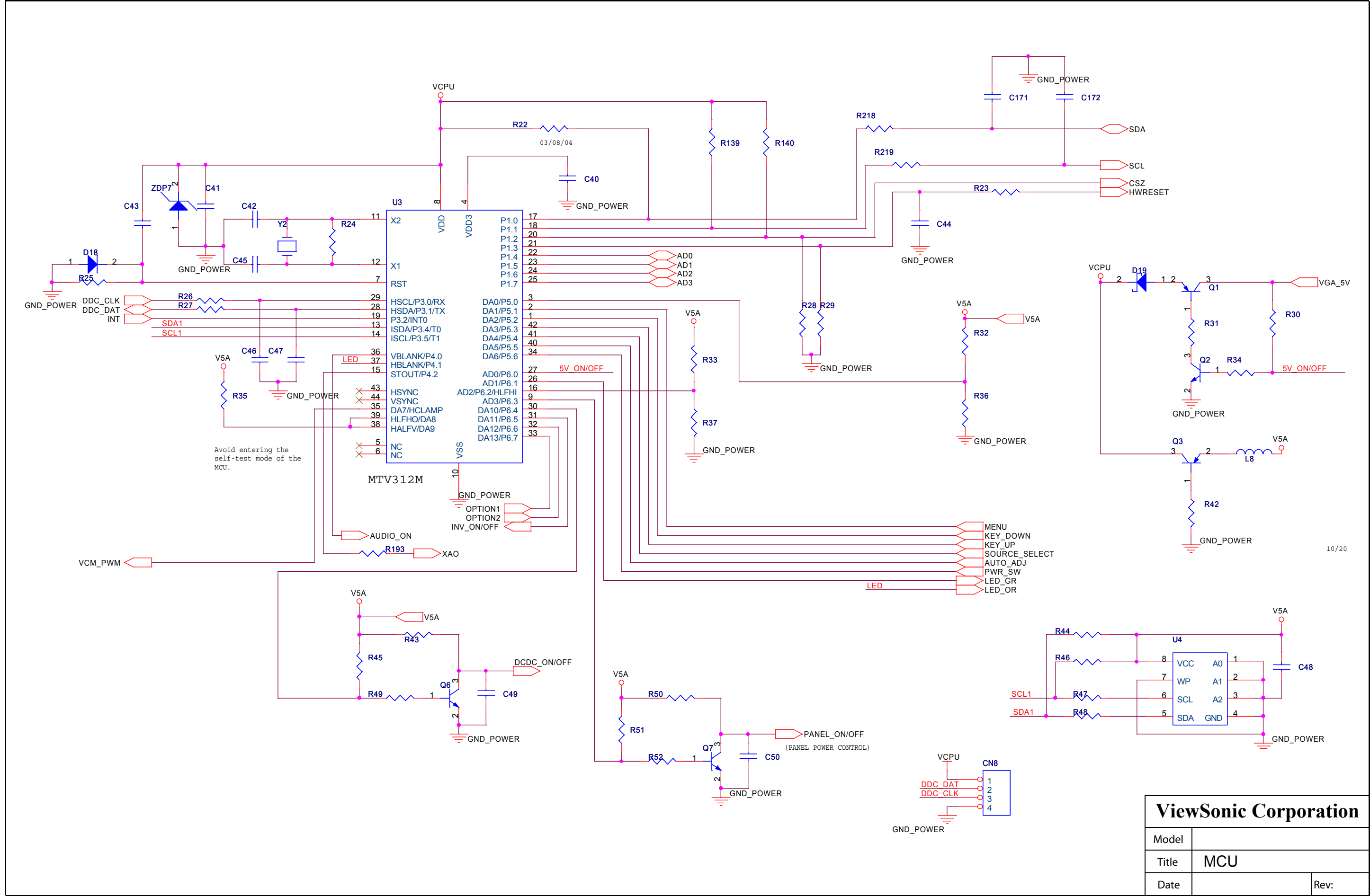
Model		
Title	TOP	
Date		Rev:



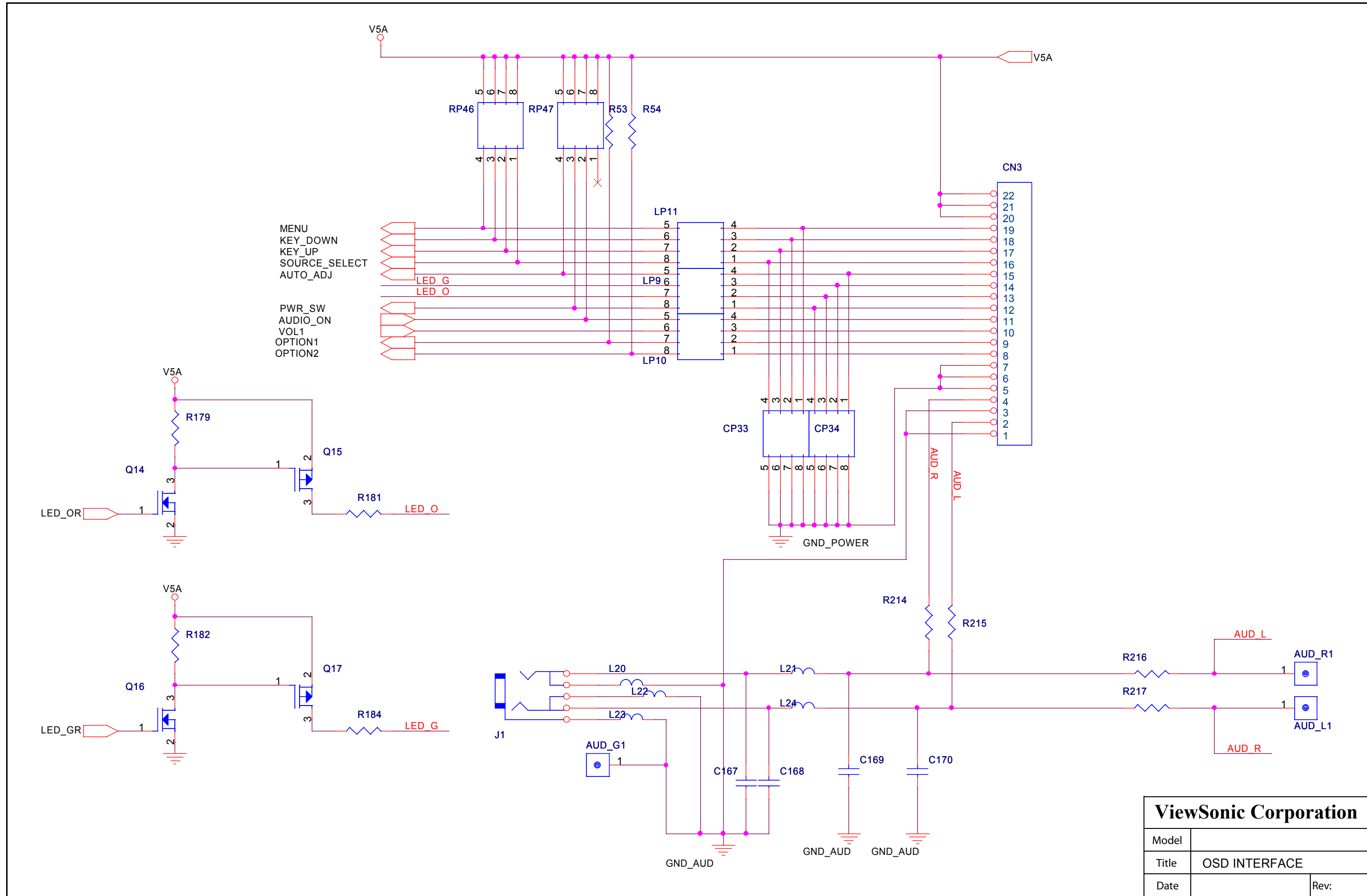
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Model		
Title	DC	
Date		Rev:

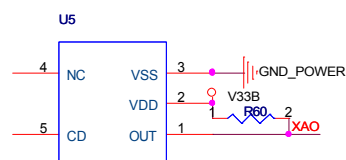
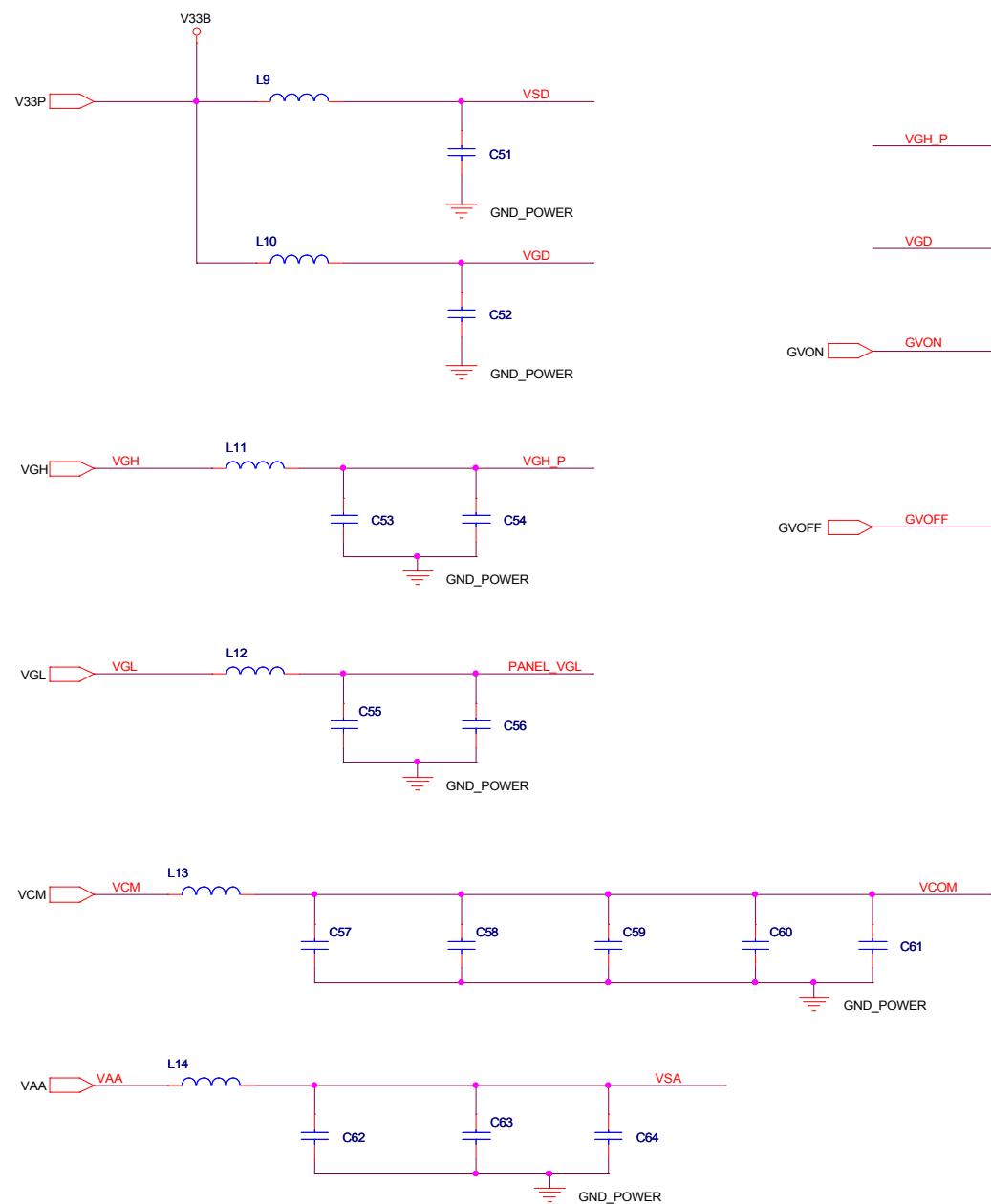




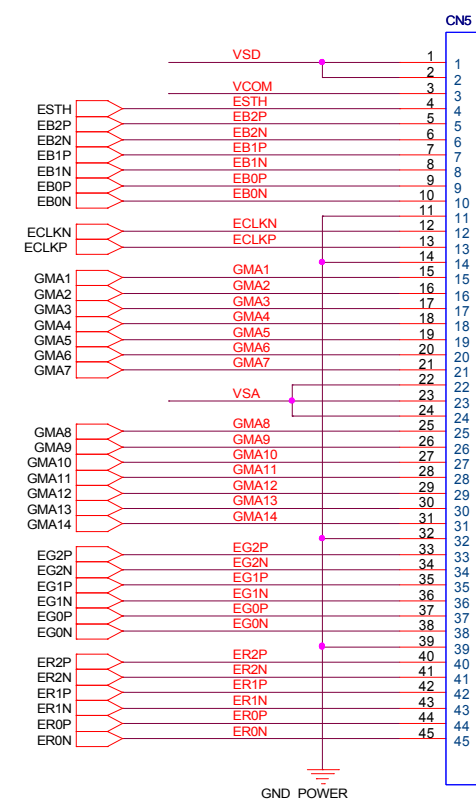
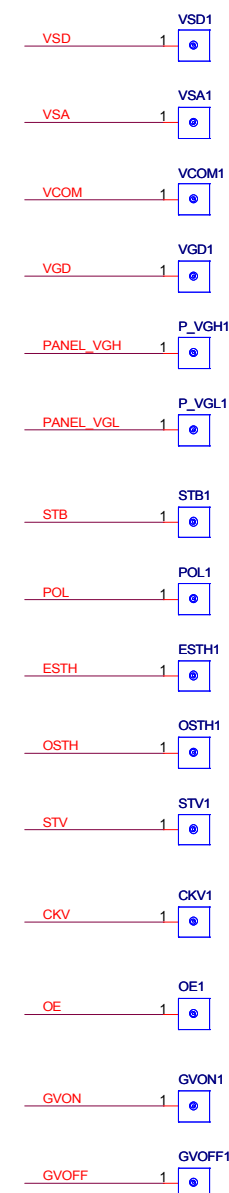
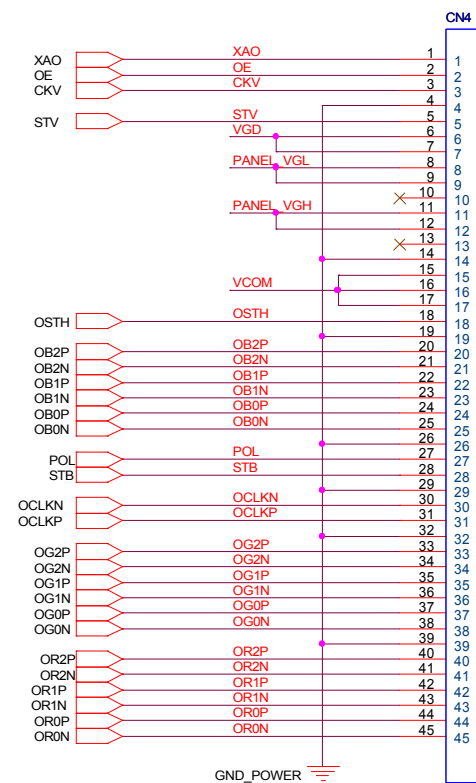
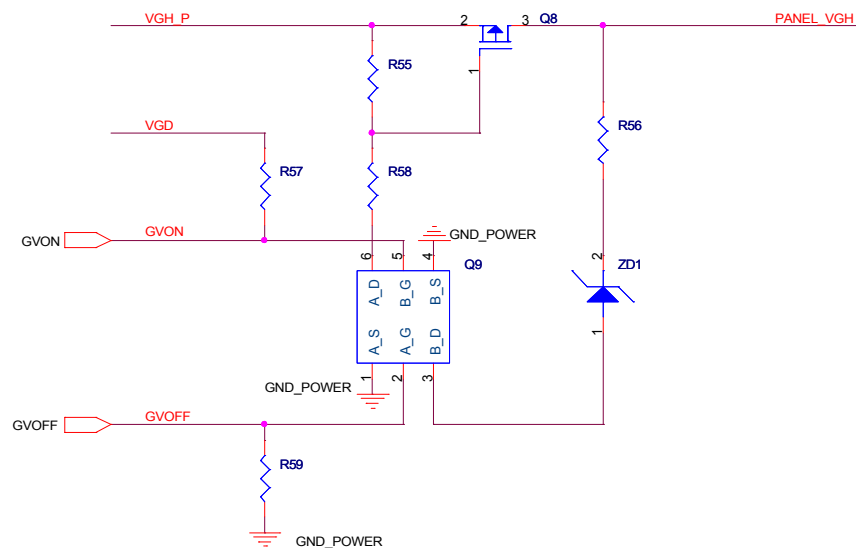


ViewSonic Corporation		
Model		
Title	MCU	
Date		Rev:



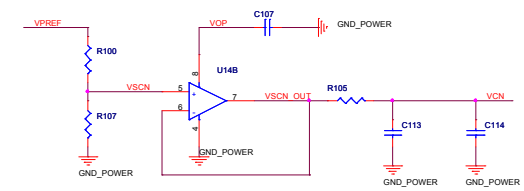


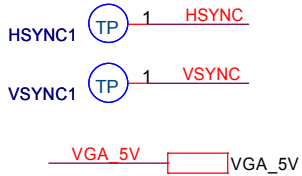
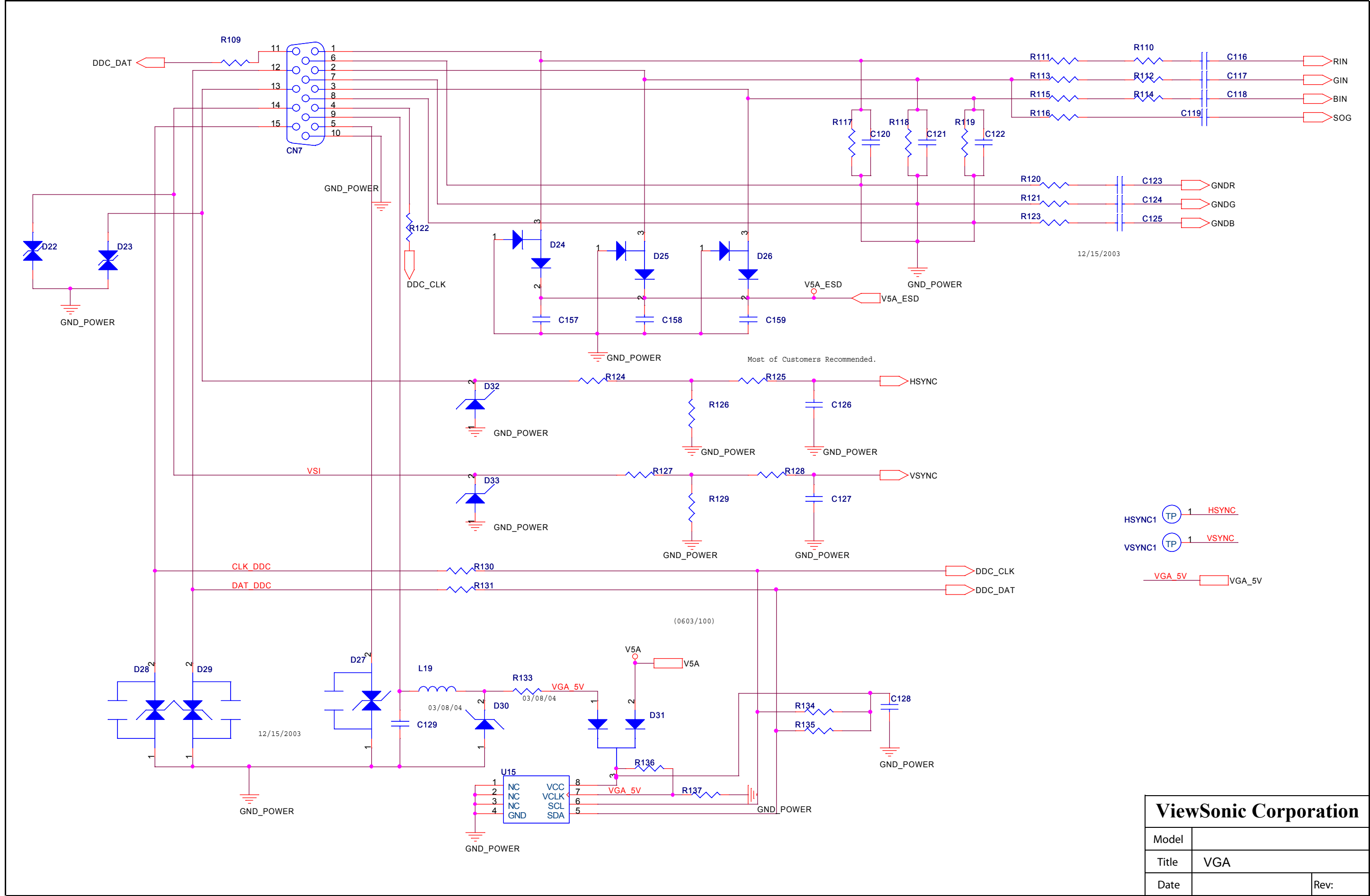
(3-STEP)



ViewSonic Corporation

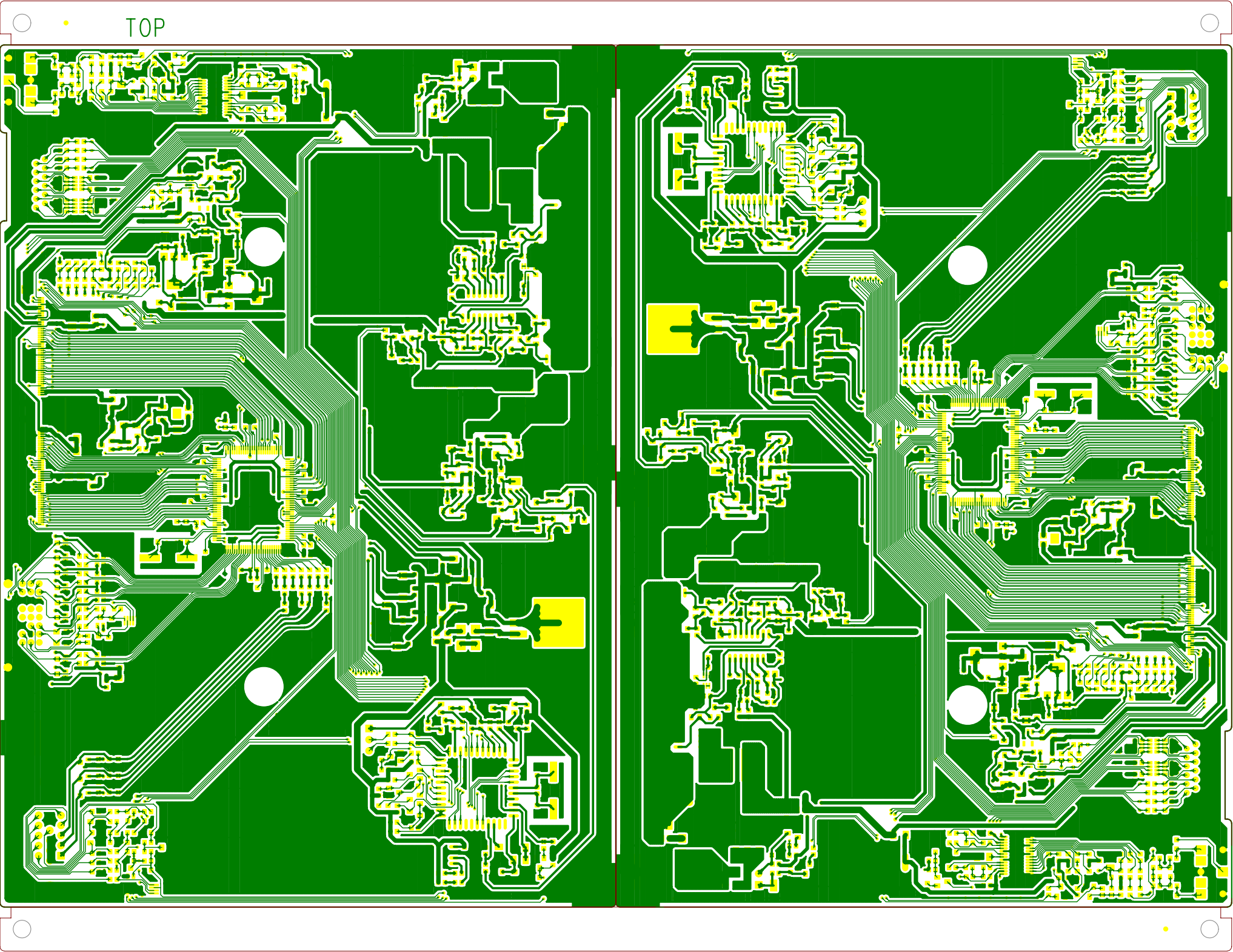
Model		
Title	PANEL I/F	
Date		Rev:





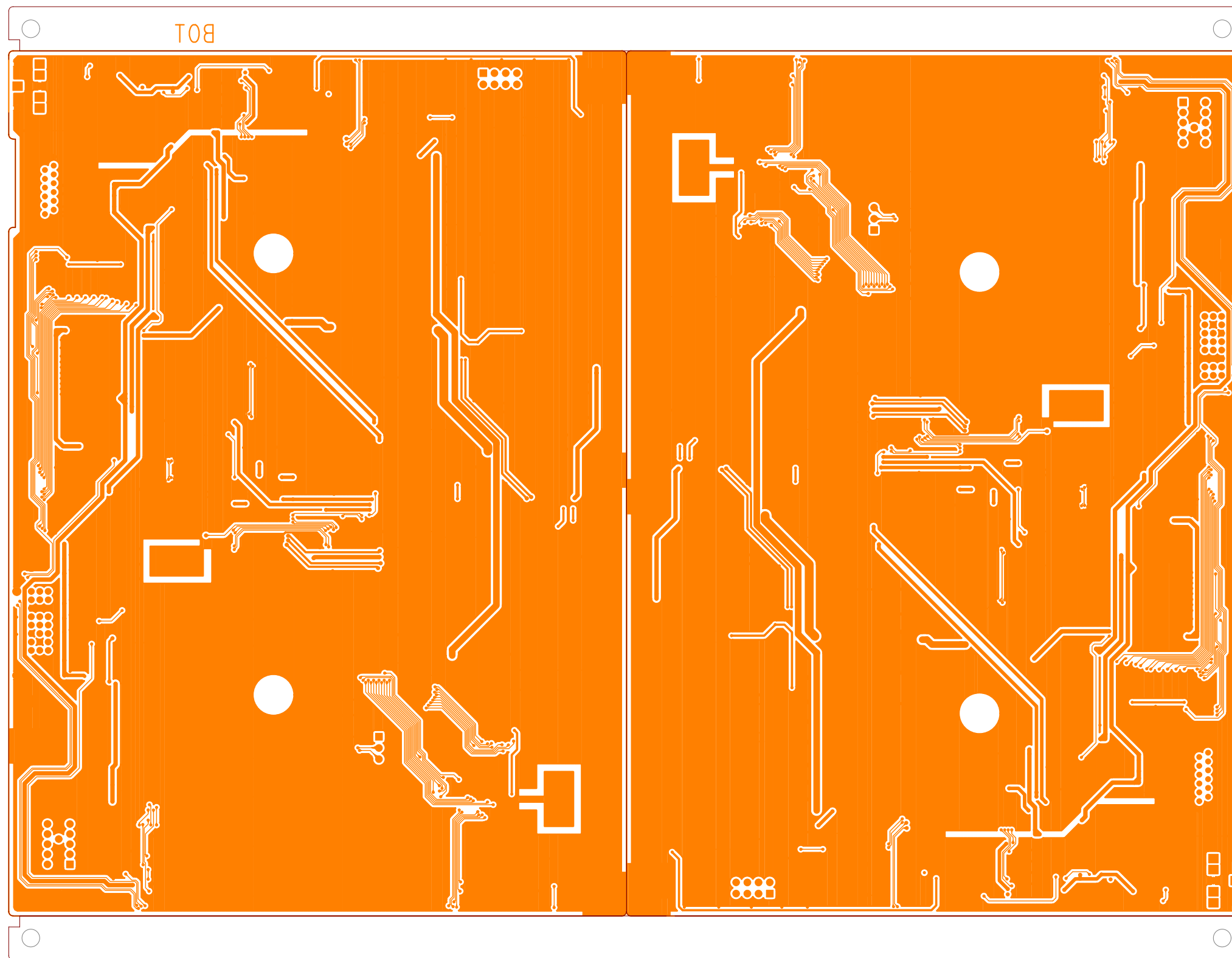
ViewSonic Corporation

Model	
Title	VGA
Date	Rev:

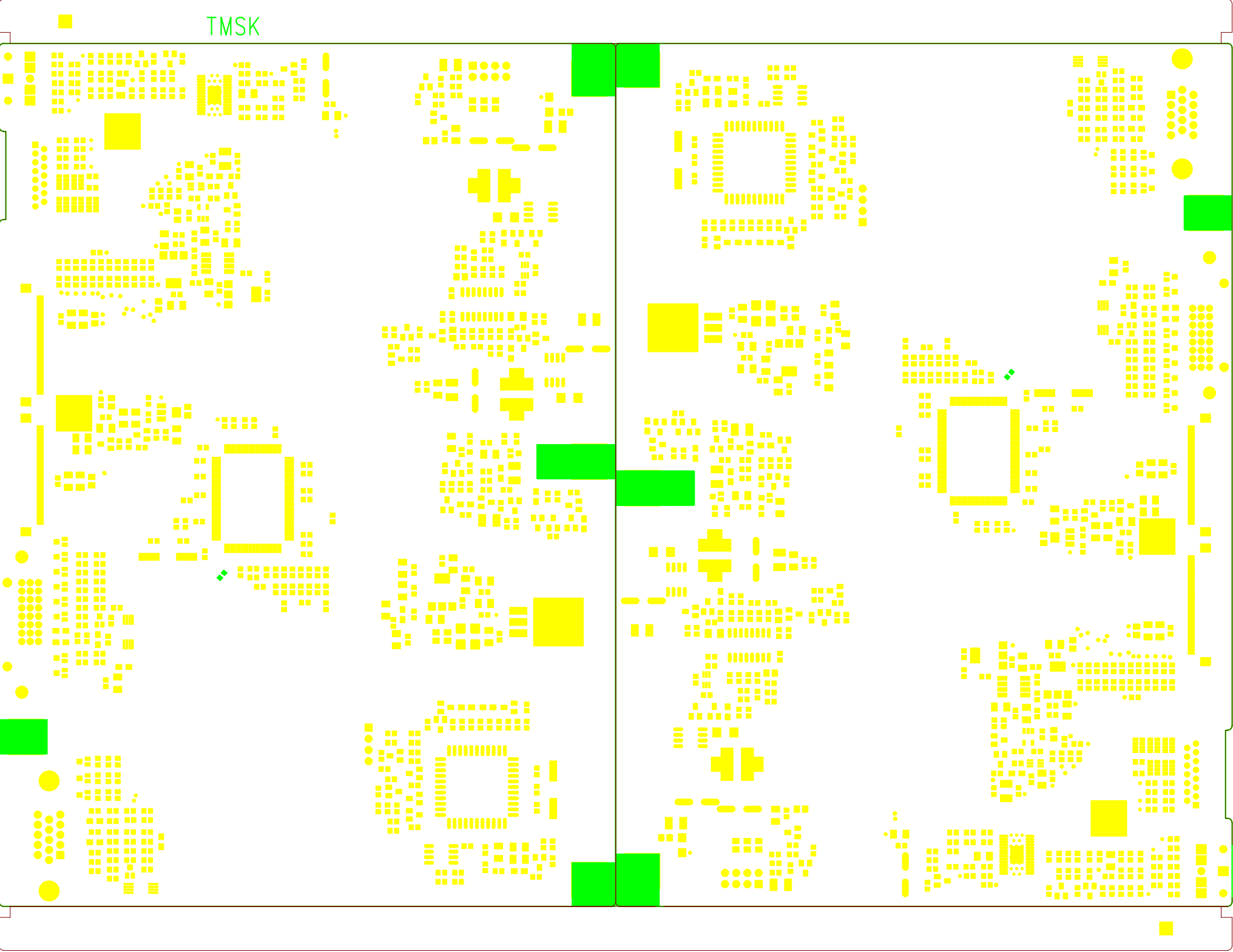


ViewSonic Corporation

Model		
Title	TOP	
Date		Rev:

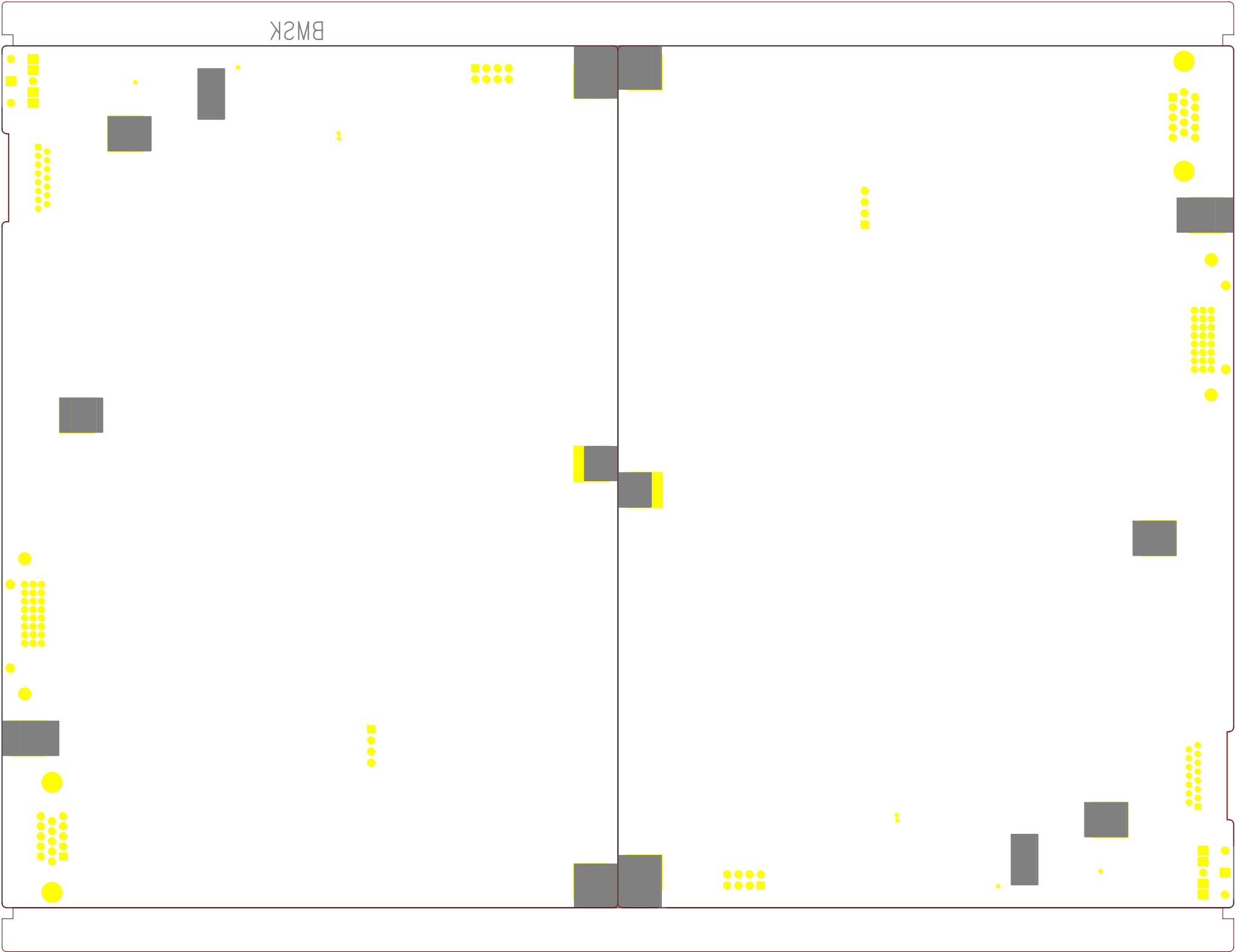


ViewSonic Corporation		
Model		
Title	BOT	
Date		Rev:

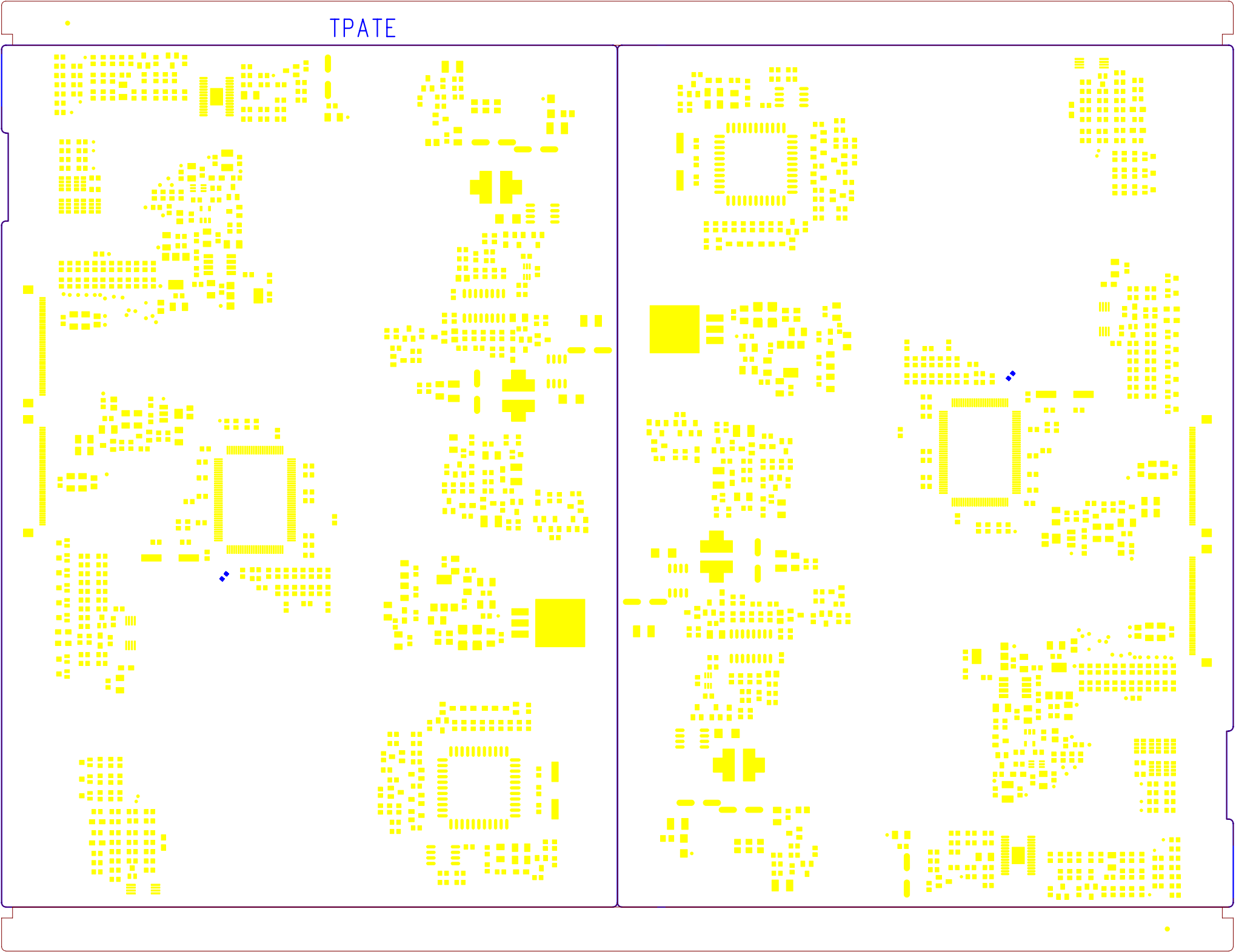


ViewSonic Corporation

Model		
Title	TMSK	
Date		Rev:



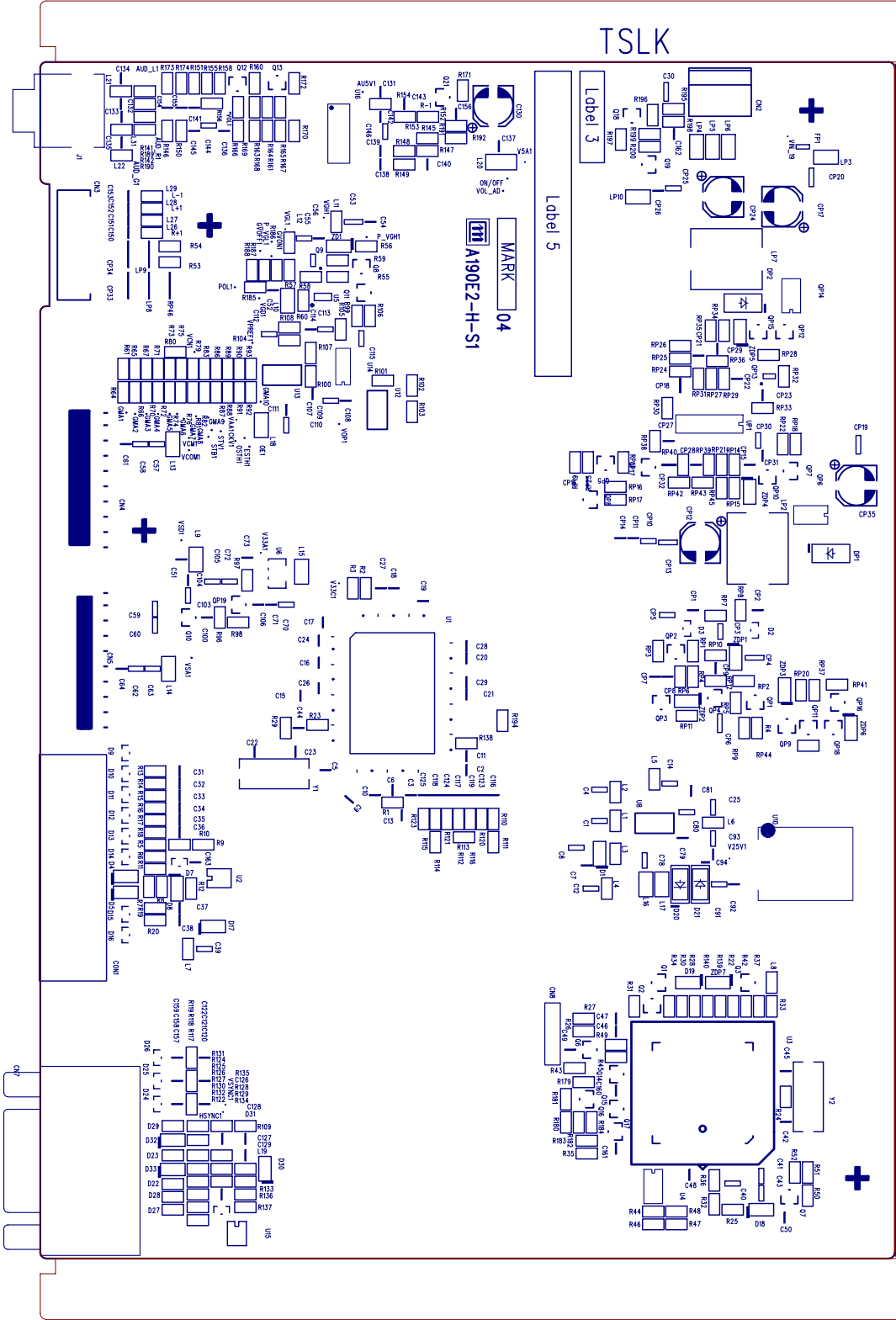
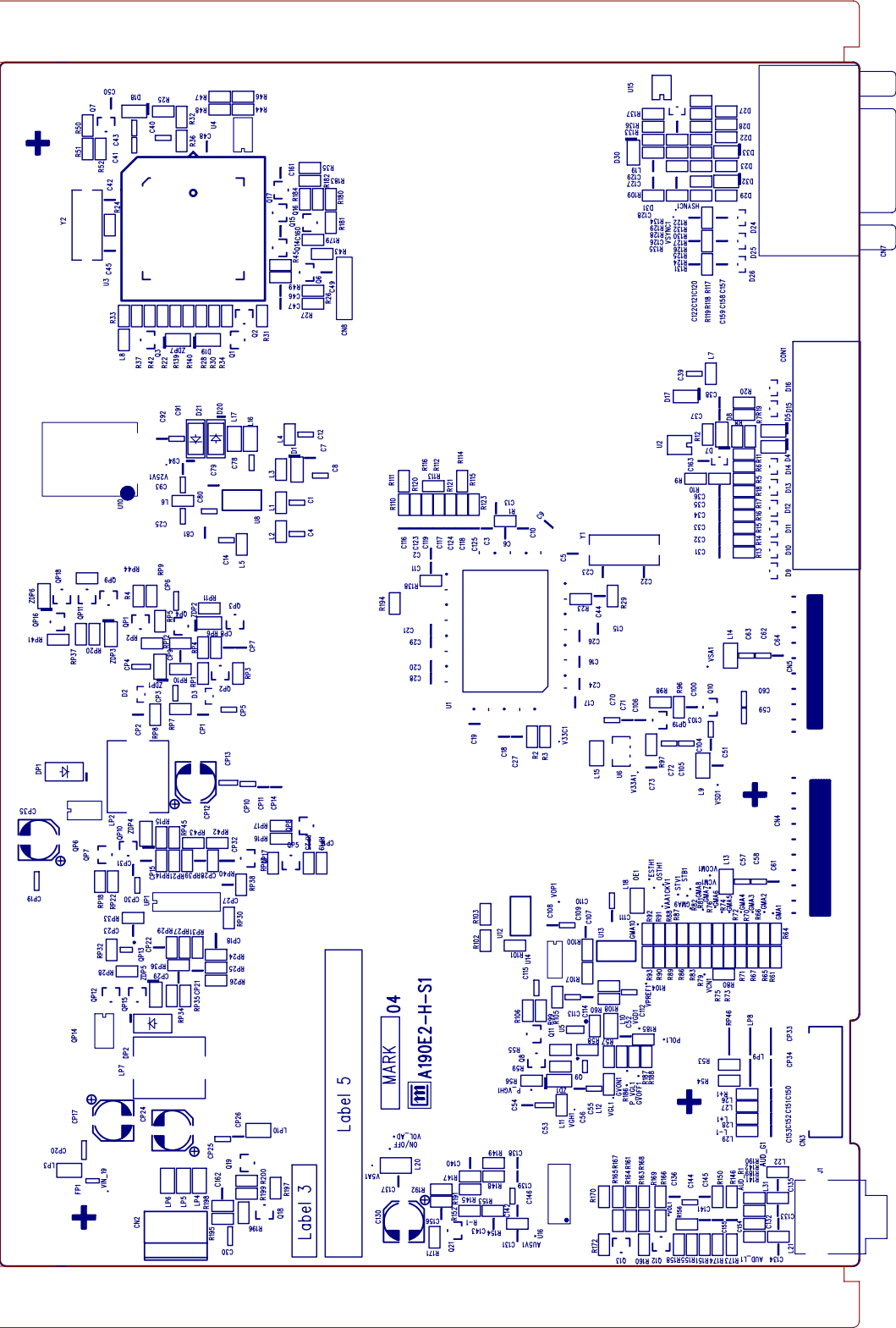
ViewSonic Corporation		
Model		
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Date		Rev:

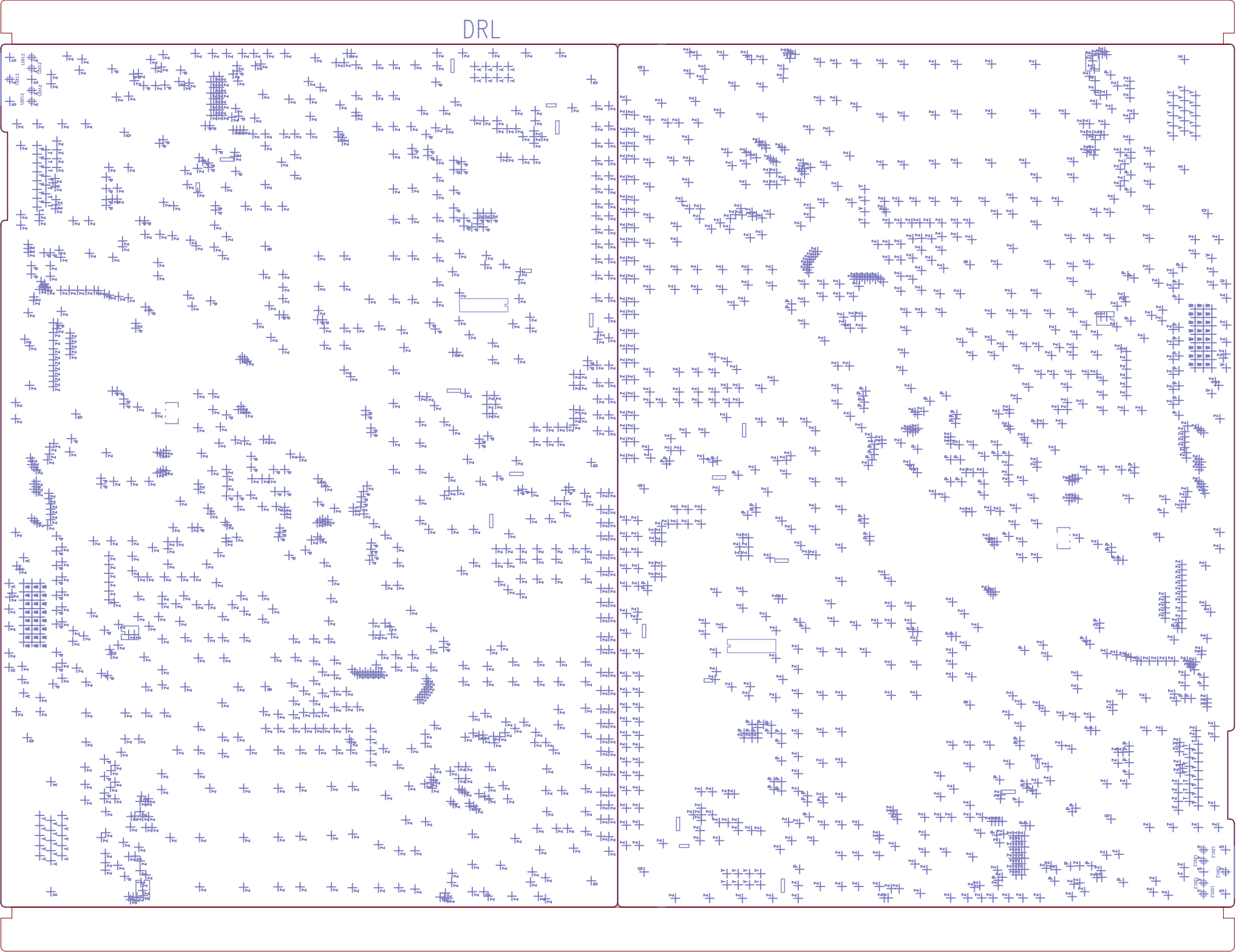


ViewSonic Corporation

Model		
Title	TPATE	
Date		Rev:

ViewSonic Corporation		
Model		
Title	TSLK	
Date		Rev:





ONE PCB:

SIZE	QTY	SYM	PLTD
0.5	122	P	PLTD
4.2	6	Q	PLTD
9	2	R	NPLTD
1.6	3	S	NPLTD
0.7	15	T	PLTD
1.93	1	U	NPLTD
1.93	3	V	PLTD
0.9	24	W	PLTD
3	2	X	PLTD
1	32	Y	PLTD
0.3	928	Z	PLTD

ViewSonic Corporation		
Model		
Title	DRL	
Date		Rev:

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

Dear Readers:

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 this 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 Exploded Parts List				
9. Block Diagrams				
10. Schematic Diagrams				
11. PCB Layout Diagrams				

B. Are you satisfied with this 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?

Reader's basic data:

Name:		Title:	
Company:			
Add:			
Tel:		Fax:	
E-mail:			

After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)