Service Manual

ViewSonic VG2030m-1

Model No. VS11234

20” Color TFT LCD Display

(VG2030m-1_SM Rev. 1a Nov. 2006)

ViewSonic 381 Brea Canyon Road, Walnut, California 91789 USA - (800) 888-8583

Revision History

Revision	SM Editing Date	ECR Number	Description of Changes	Editor
1a	11/2/2006		Initial Release	Jamie Chang

TABLE OF CONTENTS

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.

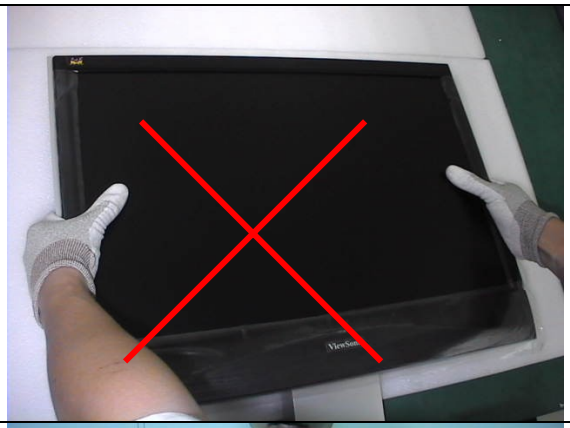
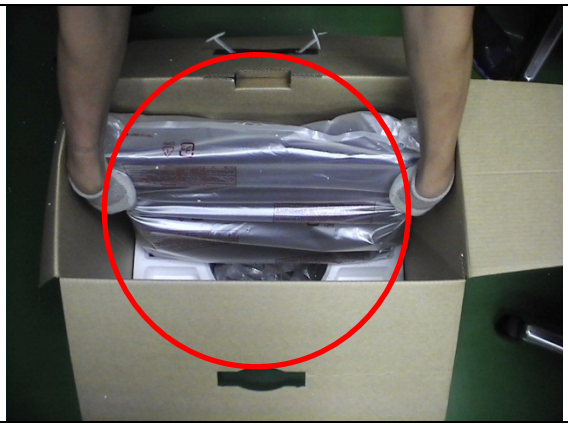
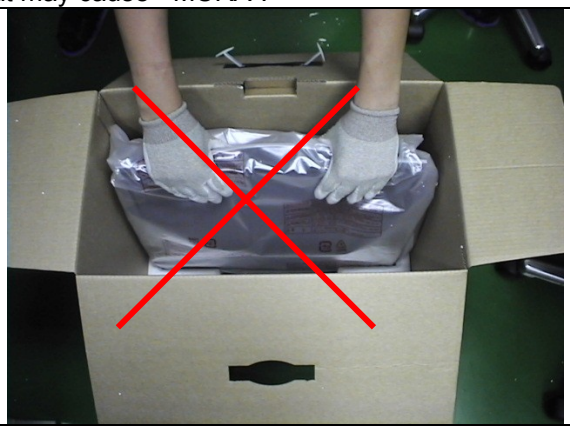
(11) After installation of the TFT Module into an enclosure (LCD monitor housing, for example), do not twist or bend the TFT Module even momentarily. When designing the enclosure, it should be taken into consideration that no bending/twisting forces may be applied to the TFT Module from outside. Otherwise 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

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

2. Specification

2.1 introductions

FEATURES		VG2030m
TFTLCD PANEL	Size	20.1 “
	Luminance (Typ)	300 cd/㎡
	Contrast Ratio (Typ)	500:1
	Colors	16.2 M colors
	Response Time (Typ)	8 ms
	Viewing Angle (H/V)	150 / 130 @CR>=10 170/ 150 @CR>= 5
	Recommend resolution	1400 X 1050 @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)	55 W / 45 W
	Active Off Mode (Max)	1 W
Audio	W	2.5W
Ergonomics	Tilt	-5 ° ~ **20 °**
	Swivel (-xx ° **- xx** °)	360
	Pivot (XX ° - XX °)	No
	Height Adjust (XX-XX mm)	0-80mm
OSD Control	[⏻] [1] [2] [▲] [▼] [◀ X]	Yes
Dimension	Physical (W x H x D)	459 x 485 x 230(mm) 18.1 X 19.1 X 9.1 (in),
	Package (W x H x D)	520 x 560 x 290(mm) 20.4 x 22.0 x 11.4 (in)
Weight	Physical (lbs / Kg)	6.4 kgs (14.1 lbs)
	Package (lbs / Kg)	8.33 kgs (18.3 lbs)
Operating Condition	Temperature (℉/℃)	41℉-95 ℉ / 5℃-35℃
	Humidity (%)	20 % - 80 %
Storage Condition	Temperature (℉/℃)	-4℉-131℉ / -20℃-55 ℃
	Humidity (%)	20 % - 85 %
Regulation	CB / TCO03/ UL/cUL / FCC-B / ICES 003 / Argentina-TUV/S / NOM / EPA Energy Star / TUV/Ergo / ISO13406-2 / TUV/GS / CE / GOST-R / SASO / BSMI / PSB / C-Tick / MIC / CCC	

2.2 GENERAL specification

Test Resolution & Frequency	"1400 X 1050" @ 60Hz
Test Image Size	Full Size
Contrast and Brightness Controls	Factory Default

2.3 VIDEO INTERFACE

Input Connector(refer the appendix A)	Analog : D-sub 15 , Digital: DVI-D
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): Separate 2. DVI (Digital)
Video Impedance	75 Ohms (Analog), 100 Ohms (Digital)
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, 1152x864,1280X960,1280x1024, 1400x1050 * 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

2.4 POWER SUPPLY

Internal Power Supply	Part Number: DAC-12M033 AF(DELTA)
Input Voltage Range	90 to 264 VAC
Input Frequency Range	47.5 to 63 Hertz
Short Circuit Protection	OUTPUT CAN BE SHORTED WITHOUT DAMAGE
Over Current Protection	N/A
Leakage Current	3.5MA (MAX) AT 254VAC / 60HZ
Efficiency	80 % TYPICAL AT 115VAC FULL LOAD
Fuse	INTERNAL AND NOT USER REPLACEABLE
Power Dissipation	50 WATTS (TYP)
Max Input AC Current	1.0ARMS @ 90VAC, 0.8 ARMS @180VAC
Inrush Current (Cold Start)	30 A @ 120VAC, 60 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 Saving Operation(Method)	VESA DPMS Signaling
Power Consumption	ON Mode < 55 W (max) / 45 W (typ) ACTIVE OFF < 1W
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	56– 76 Hz.
Maximum Pixel Clock	156 MHz
Sync Polarity	Independent of sync polarity.

Timing Table

Item	Timing	Analog	Digital
1.	640 x 400 @ 70Hz, 31.5kHz	Yes	Yes
2.	640 x 480 @ 60Hz, 31.5kHz	Yes	Yes
3.	640 x 480 @ 67Hz, 35.0kHz	Yes	Yes
4.	640 x 480 @ 72Hz, 37.9kHz	Yes	Yes
5.	640 x 480 @ 75Hz, 37.5kHz	Yes	Yes
6.	720 x 400 @ 70Hz, 31.5kHz	Yes	Yes
7.	800 x 600 @ 56Hz, 35.1kHz	Yes	Yes
8.	800 x 600 @ 60Hz, 37.9kHz	Yes	Yes
9.	800 x 600 @ 75Hz, 46.9kHz	Yes	Yes
10.	800 x 600 @ 72Hz, 48.1kHz	Yes	Yes
11.	832 x 624 @ 75Hz, 49.7kHz	Yes	Yes
12.	1024 x 768 @ 60Hz, 48.4kHz	Yes	Yes
13.	1024 x 768 @ 70Hz, 56.5kHz	Yes	Yes
14.	1152X 864 @75Hz, 67.5kHz	Yes	Yes
15.	1152X 870 @75Hz, 70.8kHz	Yes	Yes

16.	1024 x 768 @ 75Hz, 60.0kHz	Yes	Yes
17.	1280 x 1024 @ 60Hz, 63.4kHz	Yes	Yes
18.	1280 x 1024 @ 75Hz, 79.97kHz	Yes	Yes
19.	1400x 1050 @ 60Hz, 65.3kHz	Yes	Yes

Primary Presets

"1400 x 1050" @ 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), it should recall factory setting when execute "Auto Adjust"
- The monitor needs to do "Auto Adjust" the first time a new mode is detected
  (see section "0-Touch™ Function Actions")
- While running Change Mode, Auto Adjust or Memory Recall, the image shall blank

2.6 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) [◀X] [1] [▲] [▼] [2] [⏻]	[⏻] Power [◀X]Audio mute on/off [1] BUTTON 1 [▲] UP ARROW BUTTON [▼] DOWN ARROW BUTTON [2] Button 2 Note: Power Button, Button 1, Button 2, and Mute Button must be one-shot logic operation.
Reaction Time	OSD must fully appear within 0.5s after pushing Button 1

Short Cuts Function from the button(s)

[1]	Main Menu
[2]	Input selection
[▼]	Brightness adjust
[▲]	Contrast adjust
[▼]+ [▲]	recall both of Contrast and Brightness to default
[1]+[2]	Toggle 720x400 and 640x400 mode when input 720x400 or 640x400
[1] + [▼]	Power Lock
[1] + [▲]	OSD Lock
Remark : All the short cuts function are only available while OSD off	

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 Mute, Language, Power Lock, User Color Settings.

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

Input Priority

This function is defined the auto detect priority when the display has several inputs. Please refer to the detail flow chart as the appendix D

2.7 AUDIO INTERFACE (SPEAKER SPECIFICATION)

Line input connection	3.5 mm stereo jack
Line input signal	1.0 Vrms
Line input impedance	10k Ohm
Maximum power output (Electric)	2.0 W /CH
Signal to Noise Ratio	72 dB
Frequency response	100 Hz – 20 Khz
Distortion	< 8 % THD (@1kHz)
Vibration	There should be no audible vibration with volume at 100% and treble / bass at default
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	SPEAKERS STAY ON WHEN THE REST OF THE MONITOR IS IN POWER SAVING

* No any sympathetic or abnormal noise allowed under Volume OSD ≦70%

TFT LCD PANEL

Panel Source Identify

The panel code **"B" for CMO panel** should be shown on following position,
(1) The lower right side of ID label. (see Figure 2)
(2) The lower right side of UPC label. (see Figure 3)
(3) The F/W version sticker or silkscreen on main board

Panel Characteristics:

1st Source Panel	A201P1
Type	"TN Technology"
Active Size	408.24 (H) x 306.18(V)
Pixel Arrangement	RGB Vertical Stripe
Pixel Pitch	0.2916 mm
GLASS TREATMENT	Anti Glare (Hard coating 3H)
# OF BACKLIGHTS	4 CCFL edge-light (2 top / 2 bottom)
BACKLIGHT LIFE	50,000 Hours (Min)
Luminance – Condition: CT = 6500K, Contrast = Max, Brightness = Max	300 cd/m2 (Typ after 30 minute warm up) 200 cd/m2 (Min after 30 minute warm up)
Brightness Uniformity	77%(typ); 67% (min)
Contrast Ratio	500:1 (Typ), 350:1 (Min)
Color Depth	16.2 million colors (6 bit +FRC panel)
Viewing Angle (Horizontal/ vertical)	150/130 (typ), 130/110(min) @ CR>10, 170/150 (typ), 150/130 (min) @ CR>5
Response Time 10%-90% @ Ta=25°C	8 ms (Tr= 2 ms, Tf = 6 ms) (Typ) 18 ms (Tr= 7 ms, Tf = 11 ms) (Max)
Panel Defects	Please see Panel Quality Specifications.

IMAGE PERFORMANCE

Factory Defaults

Item	Defaults	Item	Defaults
Contrast	70%	Sharpness	100%
Brightness	100%	OSD H. Position	50%
Volume	50%	OSD V. Position	50%
Balance	N/A	OSD Time Out	15 Sec
Bass	N/A	OSD Background	On
Treble	N/A	OSD PIVOT	N/A
Color Temperature	6500K	Resolution Notice	on
		720x400/640x400	720x400

Display Size

Horizontal Display Size, Primary Preset	Full Screen
Vertical Display Size, Primary Preset	Full Screen

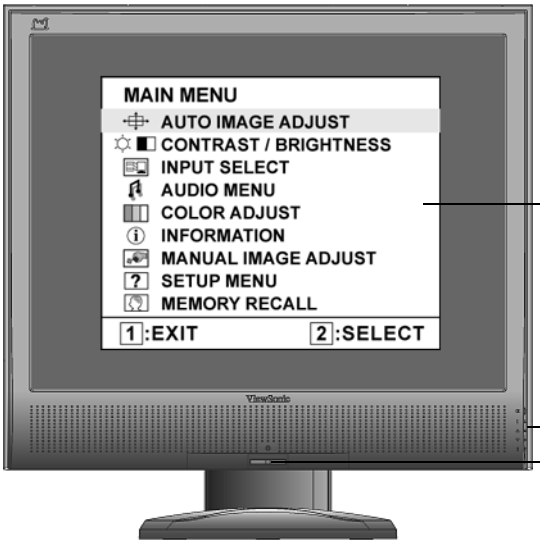
Luminance

Lv (Max) –Condition: Brightness / Contrast = 100% CCT = USER COLOR (R/G/B=100%)	Lv (Max) = The Luminance requirement of section 4-7 “TFT LCD PANEL”
Lv (9300K) –Condition: Brightness / Contrast = Default CCT = 9300K	Lv (9300K) / Lv (Def) x 100% > 70%
Lv (5400K) –Condition: Brightness / Contrast = Default CCT = 5400K	Lv (5400K) / Lv (Def) x 100% > 75%
Lv (Brightness) –Condition: Contrast = 100%	Lv(Brightness=0%)/Lv(Brightness=100%) x 100% ≦55%
Lv (Contrast) –Condition: Brightness = 100%	Lv(Contrast=0%)/ Lv(Contrast=100%) x 100% ≦30%

Saturation

Contrast = Default Brightness = Default TEST PATTERN = 64-GRAY	2 level saturation (Max)
Contrast = Default Brightness = 100% Test pattern = 32 gray	No visible saturation

Adjusting the Screen Image



Main Menu
with OSD controls

Front Control Panel
shown below in detail

Standby Power On/Off
Power light
Blue = ON
Orange = Power Saving

Audio Mute button turns the sound off

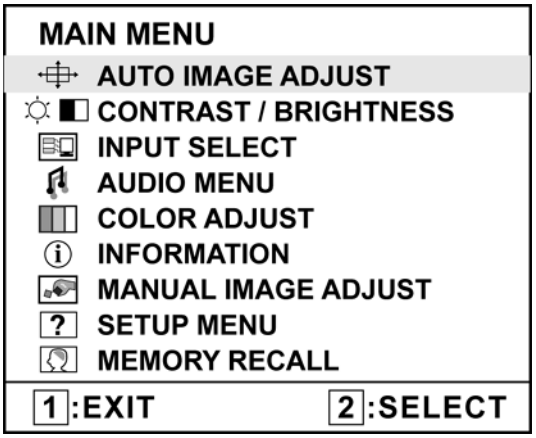
1 — Displays the Main Menu or exits the control screen and saves adjustments.

△ ▽ — Scrolls through menu options and adjusts the displayed control.
Also a shortcut to display the Contrast adjustment control screen.

2 — Displays the control screen for the highlighted control.
Also toggles between two controls on some screens.
Also a shortcut to toggle analog and digital connection.

Do the following to adjust the display setting:

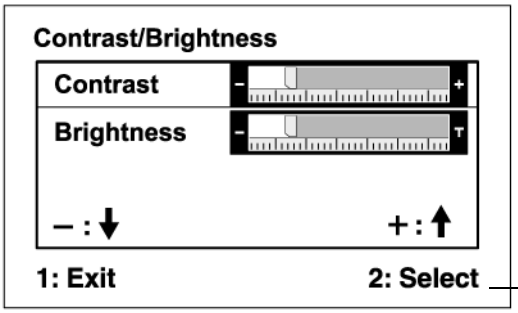
1. To display the Main Menu, press button [1].



NOTE: All OSD menus and adjustment screens disappear automatically after about 15 seconds. This is adjustable through the OSD timeout setting in the setup menu.

2. To select a control to adjust, press▲or▼to scroll up or down in the Main Menu.

3. After the desired control is selected, press button [2]. A control screen like the one shown below appears.



The command line at the bottom of the control screen tells what to do next from this screen. You can toggle between control screens, adjust the selected option, or exit the screen.

4. To adjust the setting, 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 the computer's graphics card so that it outputs a 1400 x 1050 @ 60Hz video signal to the LCD display. (Look for instructions on "changing the refresh rate" in the graphics 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.

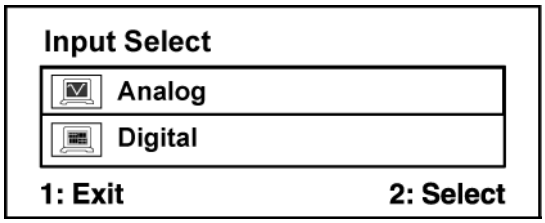
Control	Explanation

Auto Image Adjust sizes and centers the screen image automatically.

Contrast adjusts the difference between the image background (black level) and the foreground (white level).

Brightness adjusts background black level of the screen image.

Input Select toggles between inputs if you have more than one computer connected to the VG2030m.

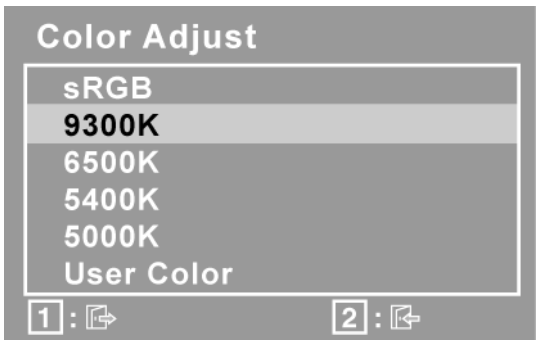


Audio Adjust

Volume increases the volume, decreases the volume, and mutes the audio.

Mute temporarily silences audio output.

Color Adjust provides several color adjustment modes, including preset color temperatures and a User Color mode which allows independent adjustment of red (R), green (G), and blue (B). The factory setting for this product is 6500K (6500 Kelvin).



sRGB-This 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.

9300K-Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).

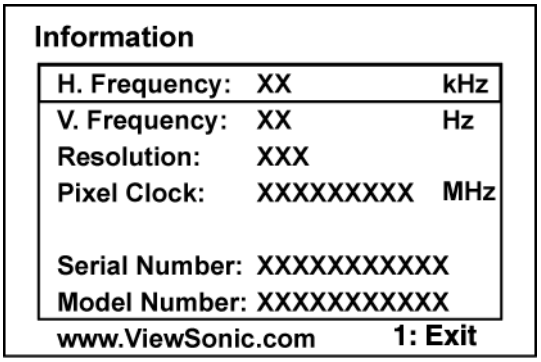
6500K-Adds red to the screen image for warmer white and richer red.

5400K-Adds green to the screen image for a darker color.

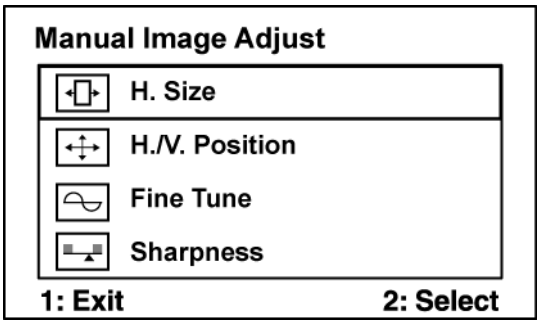
5000K-Adds blue and green to the screen image for a darker color.

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▲and▼.
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 the computer, the LCD model number, the serial number, and the ViewSonic® website URL. See your graphics card's user guide for instructions on changing the resolution and refresh rate (vertical frequency).
NOTE: VESA 1400 x 1050 @ 60Hz (recommended) means that the resolution is 1400 x 1050 and the refresh rate is 60 Hertz.



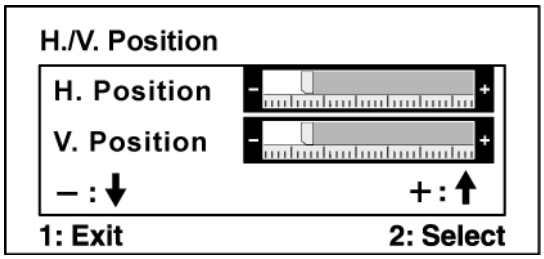
Manual Image Adjust Sub-menu



Control	Explanation

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

H./V. Position (Horizontal/Vertical Position) moves the screen image left or right and up or down.

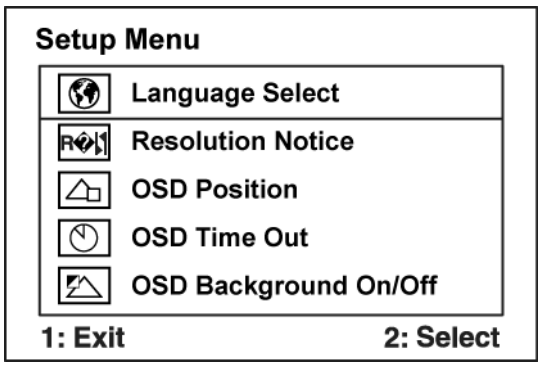


Fine Tune sharpens the focus by aligning text and/or graphics with pixel boundaries.

NOTE: Try Auto Image Adjust first.

Sharpness adjusts the clarity and focus of the screen image.

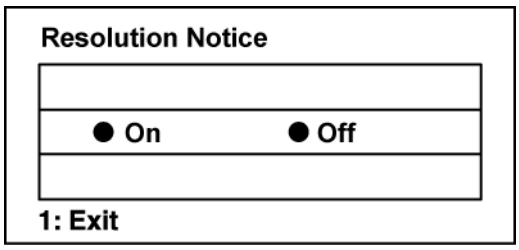
Setup Menu displays the menu shown below:



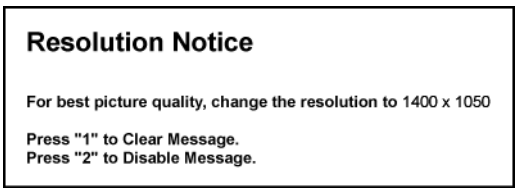
Language Select allows the user to choose the language used in the menus and control screens.

Control	Explanation

Resolution Notice allows the user to enable or disable this notice.



If you enable the Resolution Notice shown above and your computer is set at a resolution other than 1400 x 1050, the following screen appears.



OSD Position allows the user to move the OSD menus and control screens.

OSD Timeout sets the length of time the OSD screen is displayed. For example, with a “30 second” setting, if a control is not pushed within 30 seconds, the display screen disappears.

OSD Background allows the user to turn the OSD background On or Off.

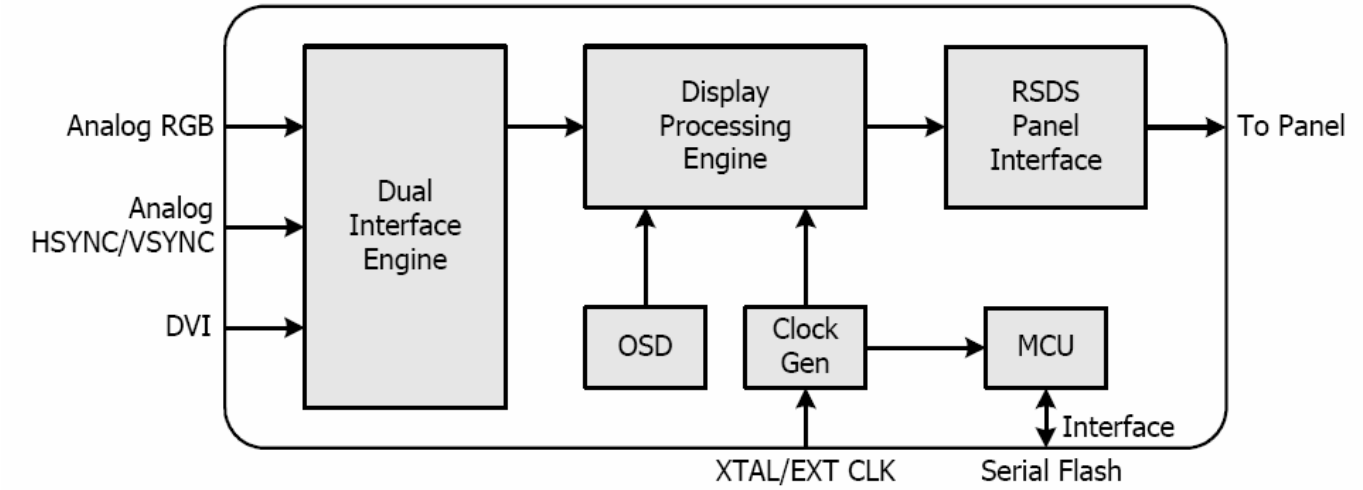
Memory Recall returns the adjustments back to factory settings if the display is operating in a factory Preset Timing Mode listed in the Specifications of this manual.

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, an integrated DVI receiver, a high quality display processing engine, and an

SDS 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.



Analog EDID

TIME: 11:24:52
Date: Wed Aug 16, 2006

VIEWSONIC CORPORATION
EDID Version # 1, Revision # 3
DDCTest For: ViewSonic VG2030m

EDID Block 0, Bytes 0-127

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	1F	4D	01	01	01	01	01	10	01	03
20	08	29	1F	78	2E	4C	D5	A3	59	4A
30	97	24	13	50	54	BF	EF	80	90	40
40	81	80	71	4F	01	01	01	01	01	01
50	01	01	01	01	8F	2F	78	D0	51	1A
60	27	40	58	90	34	00	98	32	11	00
70	00	1C	00	00	00	FF	00	51	47	5A
80	30	36	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	38	4C	1E	52	0E
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	47	32	30	33	30	6D
120	0A	20	20	20	20	20	00	50		

(08-09) ID Manufacturer Name _____ = VSC
(11-10) Product ID Code _____ = 4D1F
(12-15) Last 5 Digits of Serial Number _____ = Not Used
(16) Week of Manufacture _____ = 01
(17) Year of Manufacture _____ = 2006
(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 _____ = 410 mm
(22) Maximum Vertical Image Size _____ = 310 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 - 0.638 Green X - 0.292 Blue X - 0.144 White X - 0.313

Red Y - 0.348 Green Y - 0.590 Blue Y - 0.075 White Y - 0.329

(35) ESTABLISHED TIMING I:

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple,Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:

1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:

1400 X 1050 @60Hz

1280 X 1024 @60Hz

1152 X 864 @75Hz

Not Used

Not Used

Not Used

Not Used

Not Used

(54-71) Detailed Timing / Descriptor Block 1:

1400x1050 Pixel Clock: 121.75 MHz

Horizontal Image Size: 408 mm Vertical Image Size: 306 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1400 pixels	Blanking Time: 464 pixels
Sync Offset: 88 pixels	Sync Pulse Width: 144 pixels
Border: 0 pixels	Frequency: 65.32 KHz

Vertical:

Active Time: 1050 lines	Blanking Time: 39 lines
Sync Offset: 3 lines	Sync Pulse Width: 4 lines
Border: 0 lines	Frequency: 59.98 Hz

Digital Separate, Horizontal Polarity (-) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:
QGZ060100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:
Min Vertical Freq - 56 Hz
Max Vertical Freq - 76 Hz
Min Horiz. Freq - 30 KHz
Max Horiz. Freq - 82 KHz
Pixel Clock - 140 MHz
Secondary GTF - Not Supported

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

Monitor Name:
VG2030m

(126) No Extension EDID Block(s)
(127) CheckSum OK

DIgital EDID

Time: 11:25:30

Date: Wed Aug 16, 2006

VIEWSONIC CORPORATION

EDID Version # 1, Revision # 3

DDCTest For: ViewSonic VG2030m

EDID Block 0, Bytes 0-127

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	1F	4D	01	01	01	01	01	10	01	03
20	80	29	1F	78	2E	4C	D5	A3	59	4A
30	97	24	13	50	54	BF	EF	80	90	40
40	81	80	71	4F	31	0A	01	01	01	01
50	01	01	01	01	8F	2F	78	D0	51	1A
60	27	40	58	90	34	00	98	32	11	00
70	00	1C	00	00	00	FF	00	51	47	5A
80	30	36	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	38	4C	1E	52	0E
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	47	32	30	33	30	6D
120	0A	20	20	20	20	20	00	9F		

(08-09) ID Manufacturer Name _____ = VSC

(11-10) Product ID Code _____ = 4D1F

(12-15) Last 5 Digits of Serial Number _____ = Not Used

(16) Week of Manufacture _____ = 01

(17) Year of Manufacture _____ = 2006

(10-17) Complete Serial Number _____ = See Descriptor Block

(18) EDID Version Number _____ = 1

(19) EDID Revision Number _____ = 3

(20) VIDEO INPUT DEFINITION:

Digital Signal

Non - VESA DFP 1.x Compatible

(21) Maximum Horizontal Image Size _____ = 410 mm

(22) Maximum Vertical Image Size _____ = 310 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 - 0.638 Green X - 0.292 Blue X - 0.144 White X - 0.313

Red Y - 0.348 Green Y - 0.590 Blue Y - 0.075 White Y - 0.329

(35) ESTABLISHED TIMING I:

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple,Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:

1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:

1400 X 1050 @60Hz

1280 X 1024 @60Hz

1152 X 864 @75Hz

640 X 400 @70Hz

Not Used

Not Used

Not Used

Not Used

(54-71) Detailed Timing / Descriptor Block 1:

1400x1050 Pixel Clock: 121.75 MHz

Horizontal Image Size: 408 mm Vertical Image Size: 306 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1400 pixels	Blanking Time: 464 pixels
Sync Offset: 88 pixels	Sync Pulse Width: 144 pixels
Border: 0 pixels	Frequency: 65.32 KHz

Vertical:

Active Time: 1050 lines	Blanking Time: 39 lines
Sync Offset: 3 lines	Sync Pulse Width: 4 lines
Border: 0 lines	Frequency: 59.98 Hz

Digital Separate, Horizontal Polarity (-) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:
QGZ060100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:
Min Vertical Freq - 56 Hz
Max Vertical Freq - 76 Hz
Min Horiz. Freq - 30 KHz
Max Horiz. Freq - 82 KHz
Pixel Clock - 140 MHz
Secondary GTF - Not Supported

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

Monitor Name:
VG2030m

(126) No Extension EDID Block(s)
(127) CheckSum OK

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 Patten: Burn in Model (Refer to Chap3. Hot Keys for Function Control)
-Make sure the F/W is the latest version.

4. DCC

Test Patten: 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

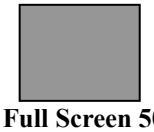
7. 25 Gray

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:

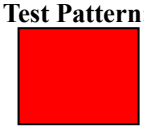
Window standard pattern

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

10. Black Box
Test Signal: 1280*1024@60Hz
Test Pattern:

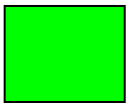
Window standard pattern
Inspection Item: Bright Dot, Line Defect & Power

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

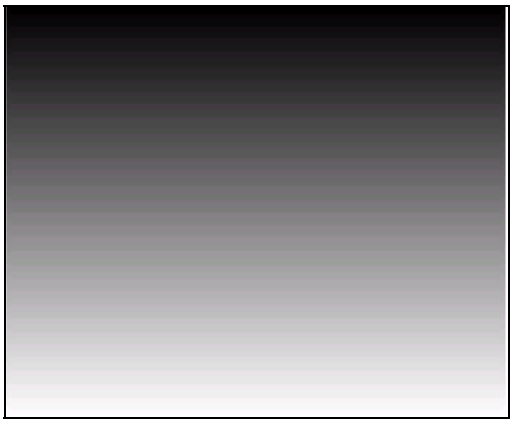


Figure1

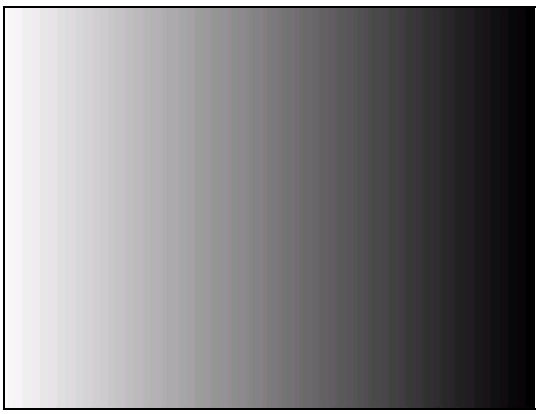


Figure2

Figure3

Figure4

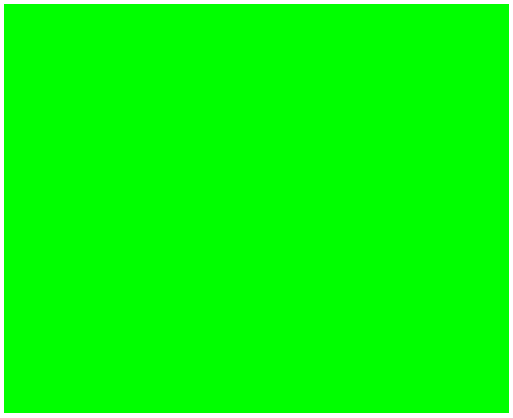


Figure5

Figure6

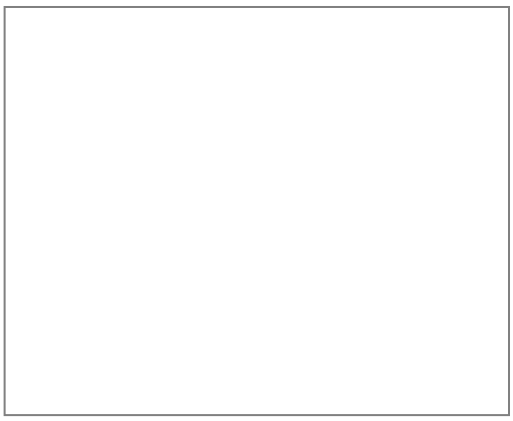


Figure7

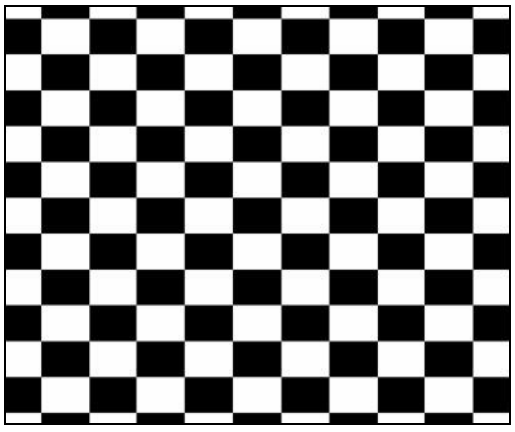


Figure8

1. To setup ISP environment

Figure 1

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

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

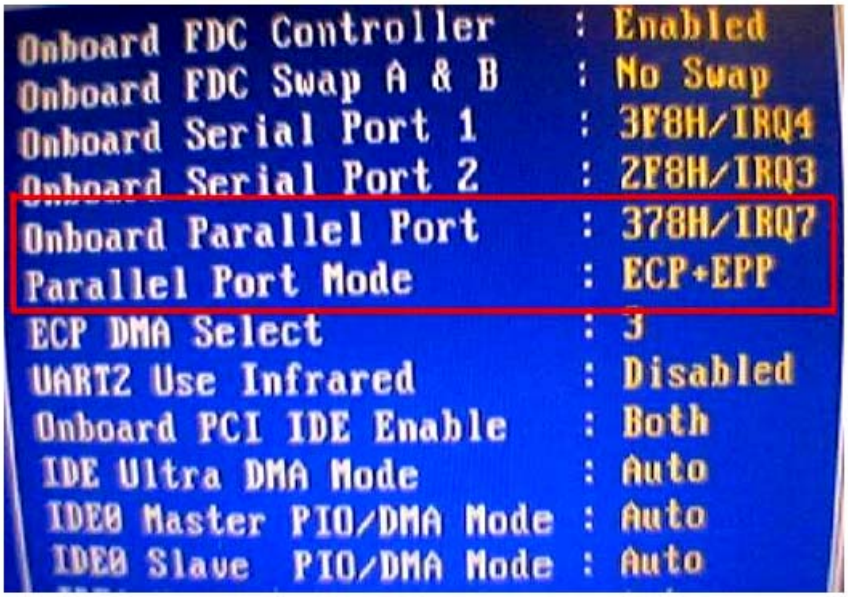


Fig 2

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

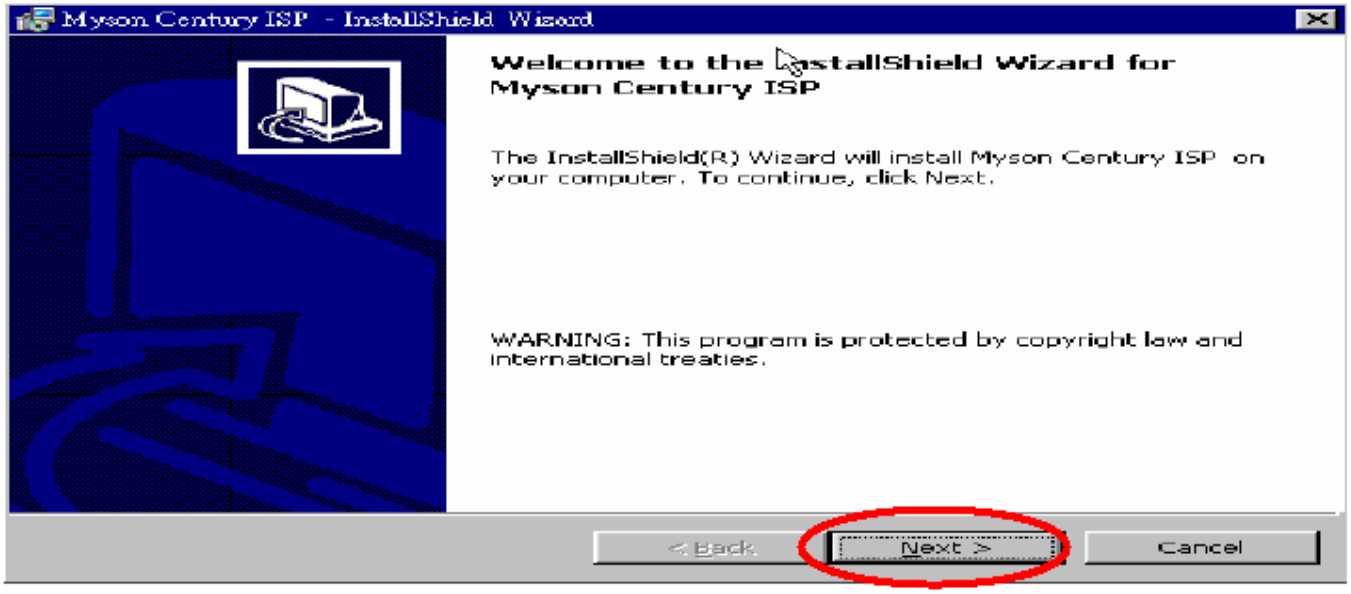


Fig 2.3

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.

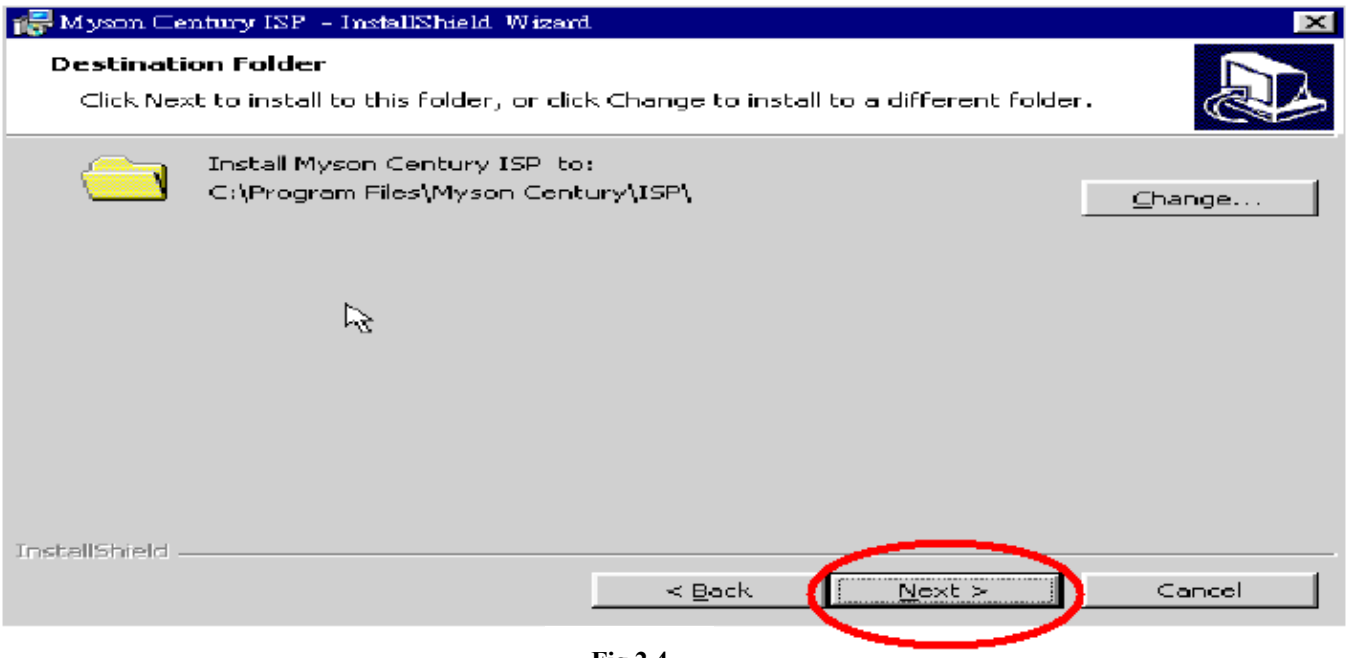


Fig 2.4

2.5 Press “Install” button to continue, see Fig 2.

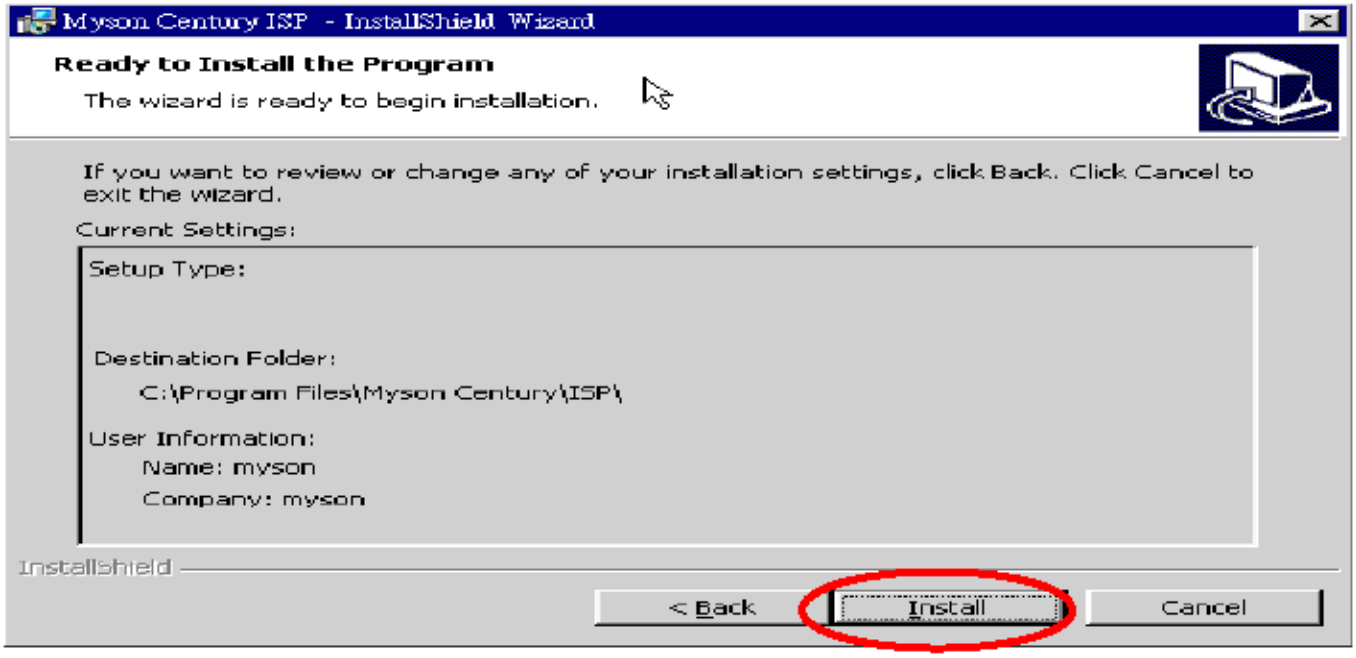


Fig 2.5

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

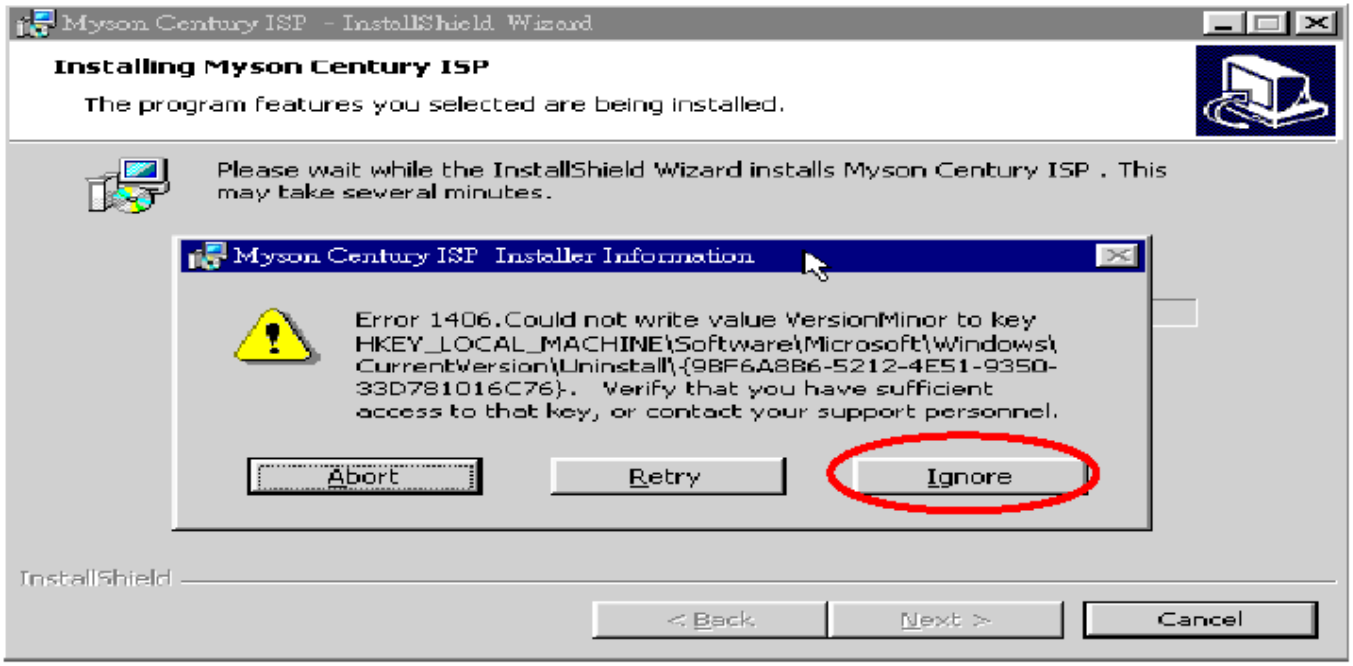


Fig 2.6

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

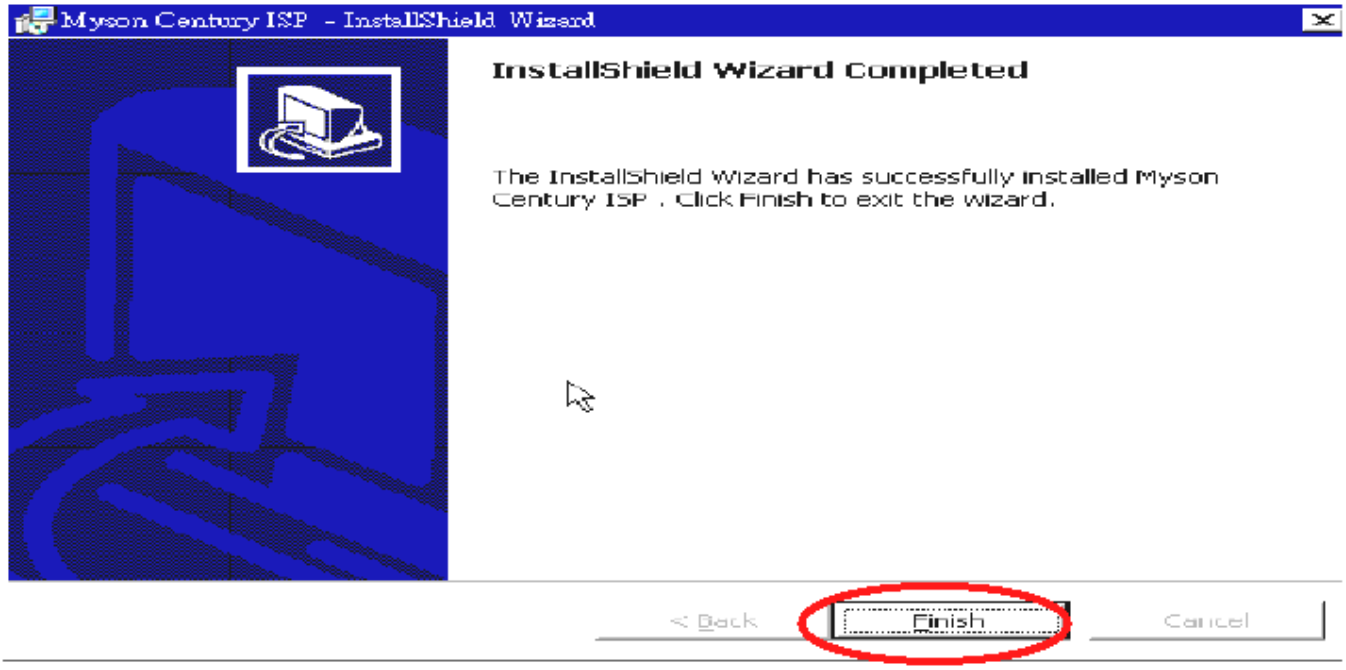


Fig 2.7

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.

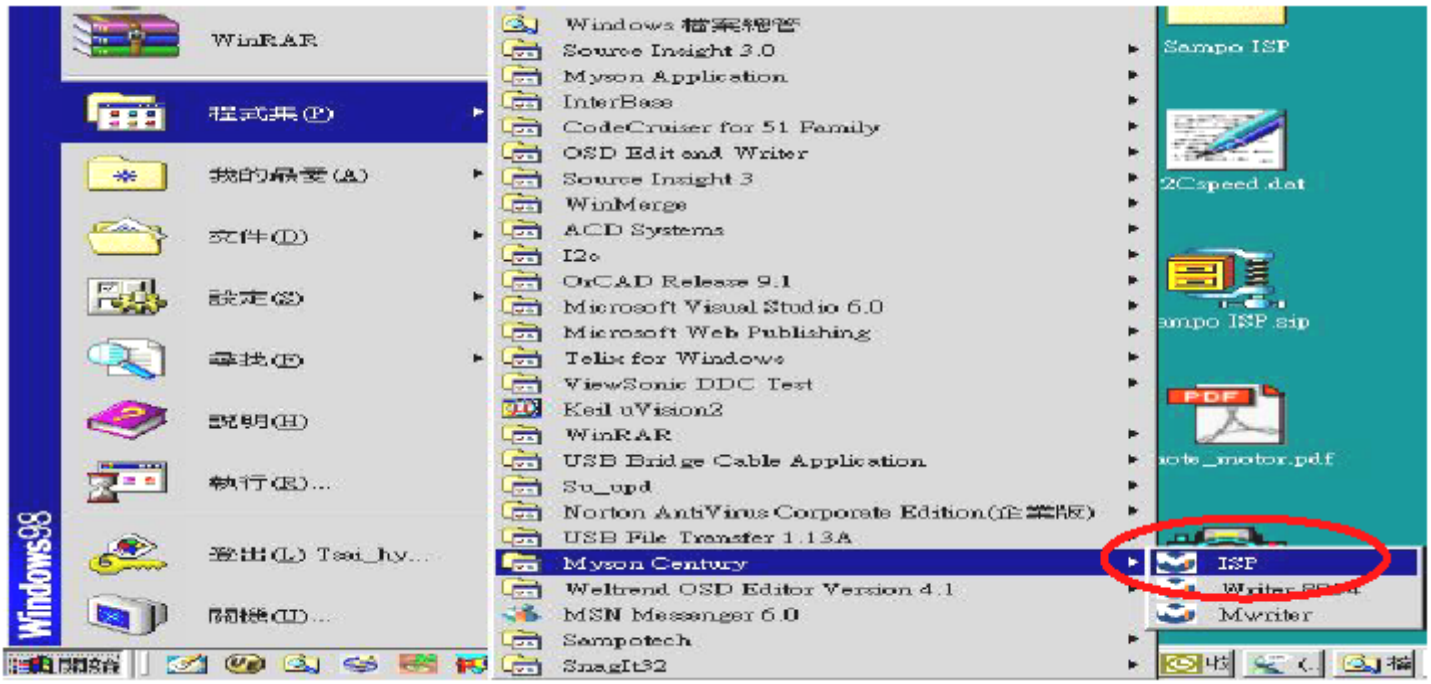


Fig 3.1

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

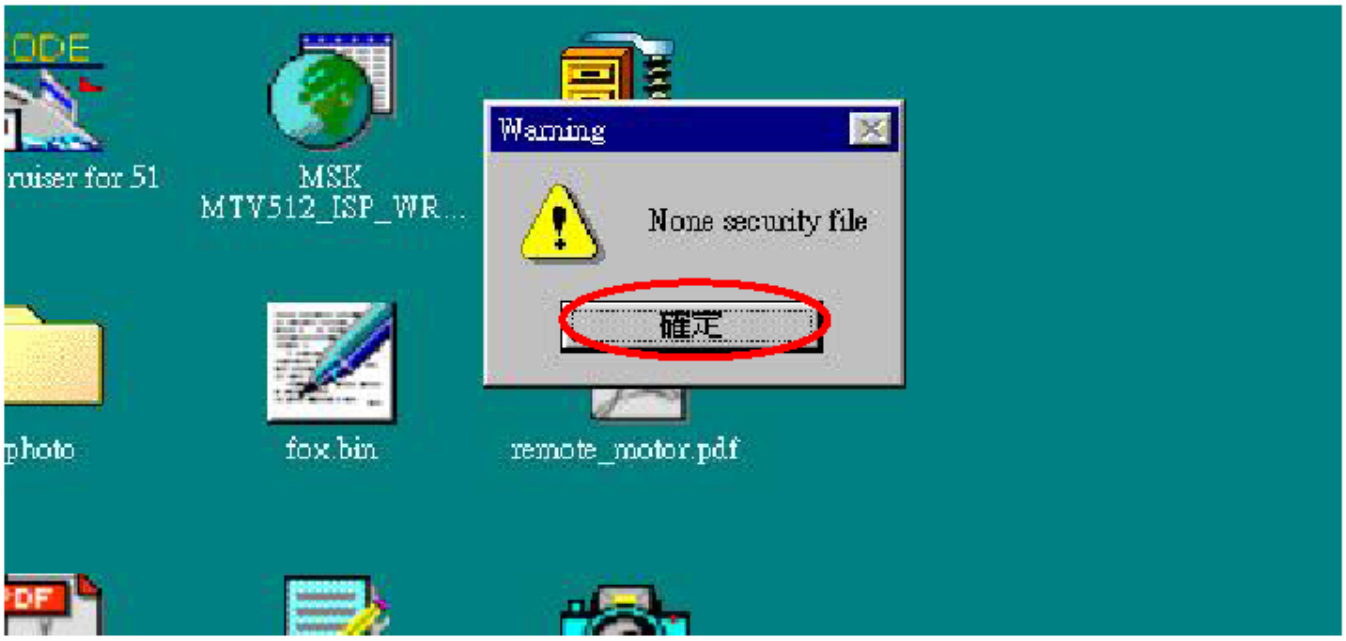


Fig 3.2

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.

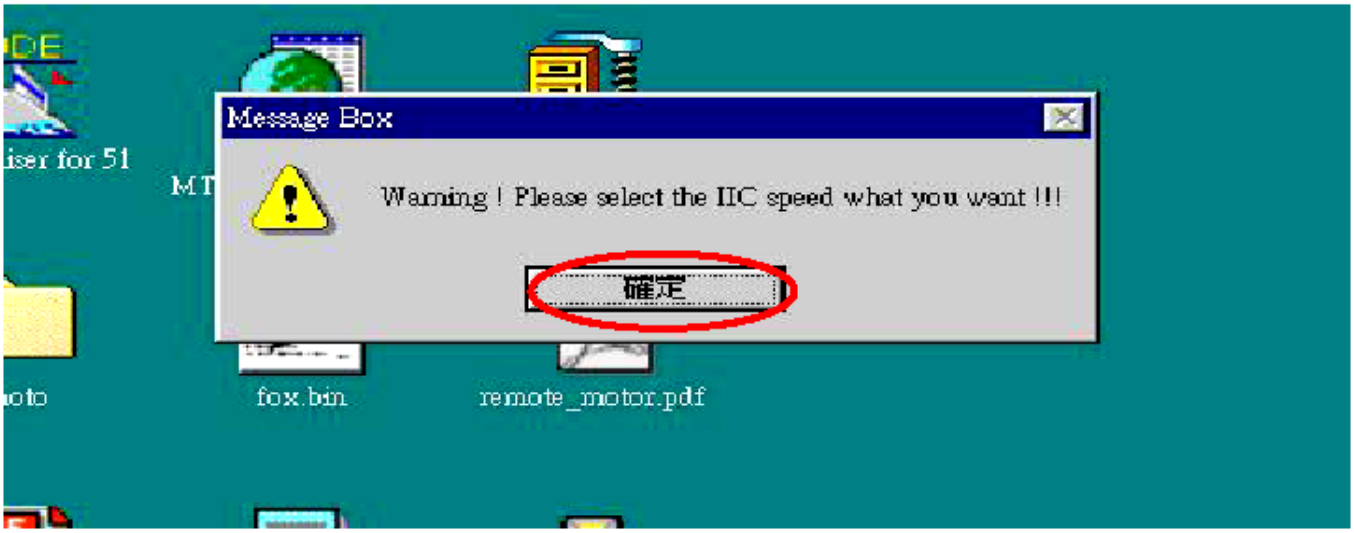


Fig 3.3

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

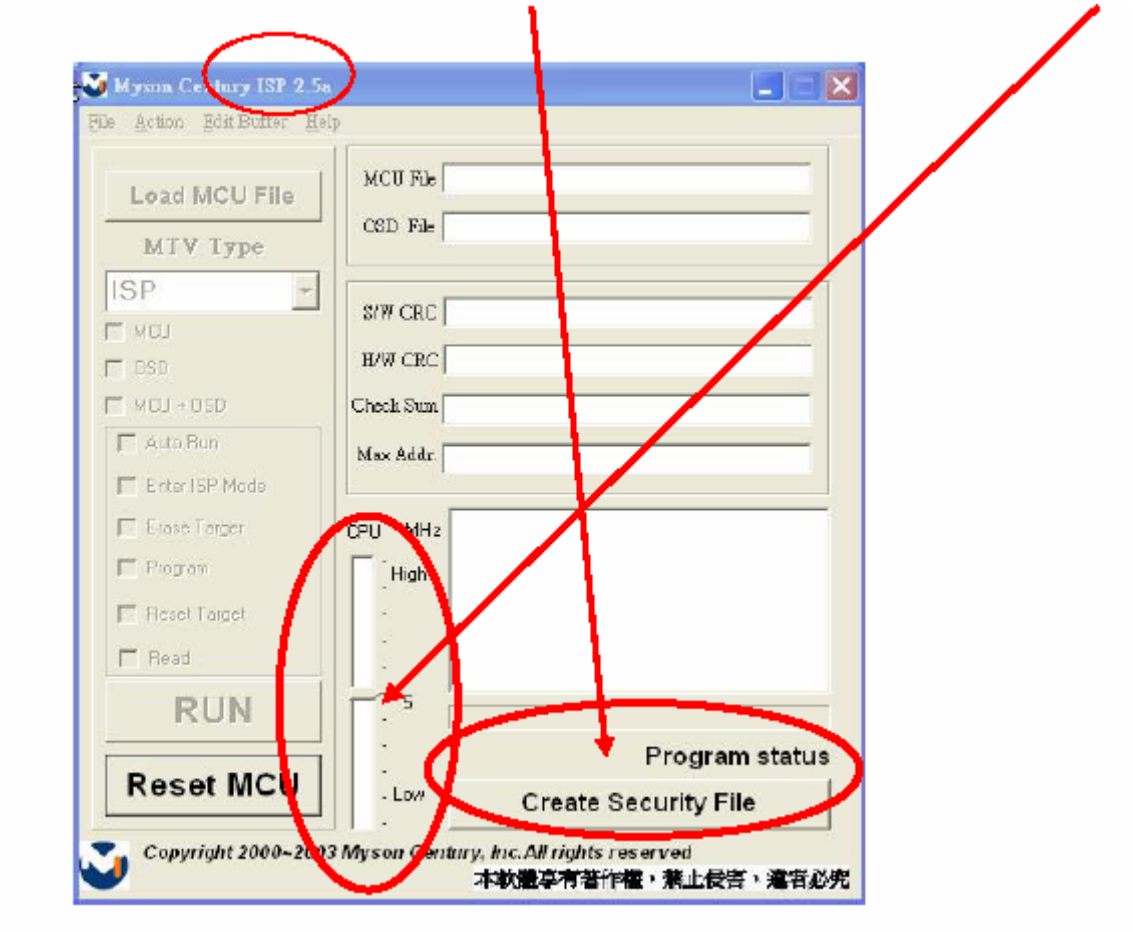


Fig 3.4

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.

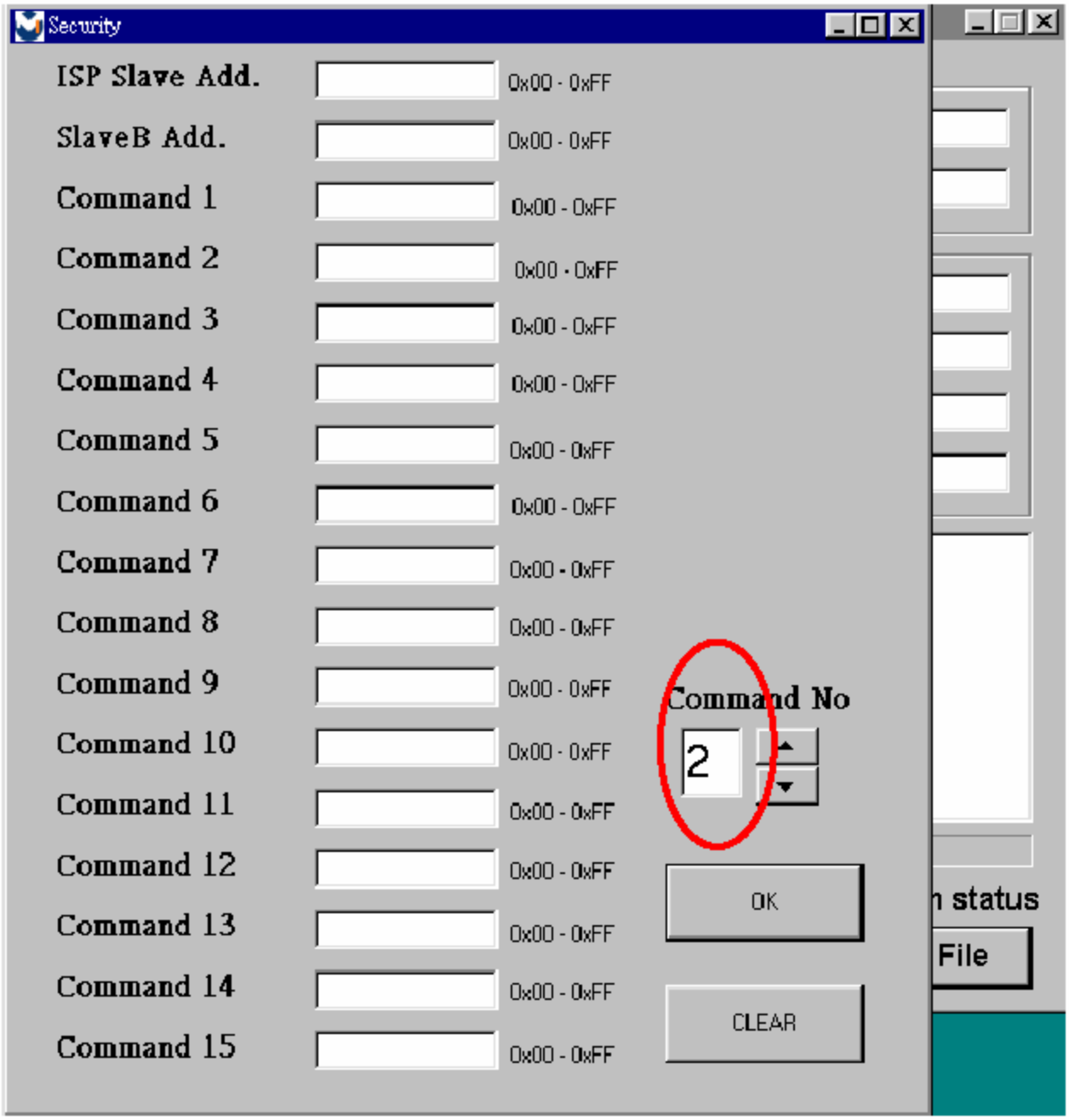


Fig 3.5

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**.

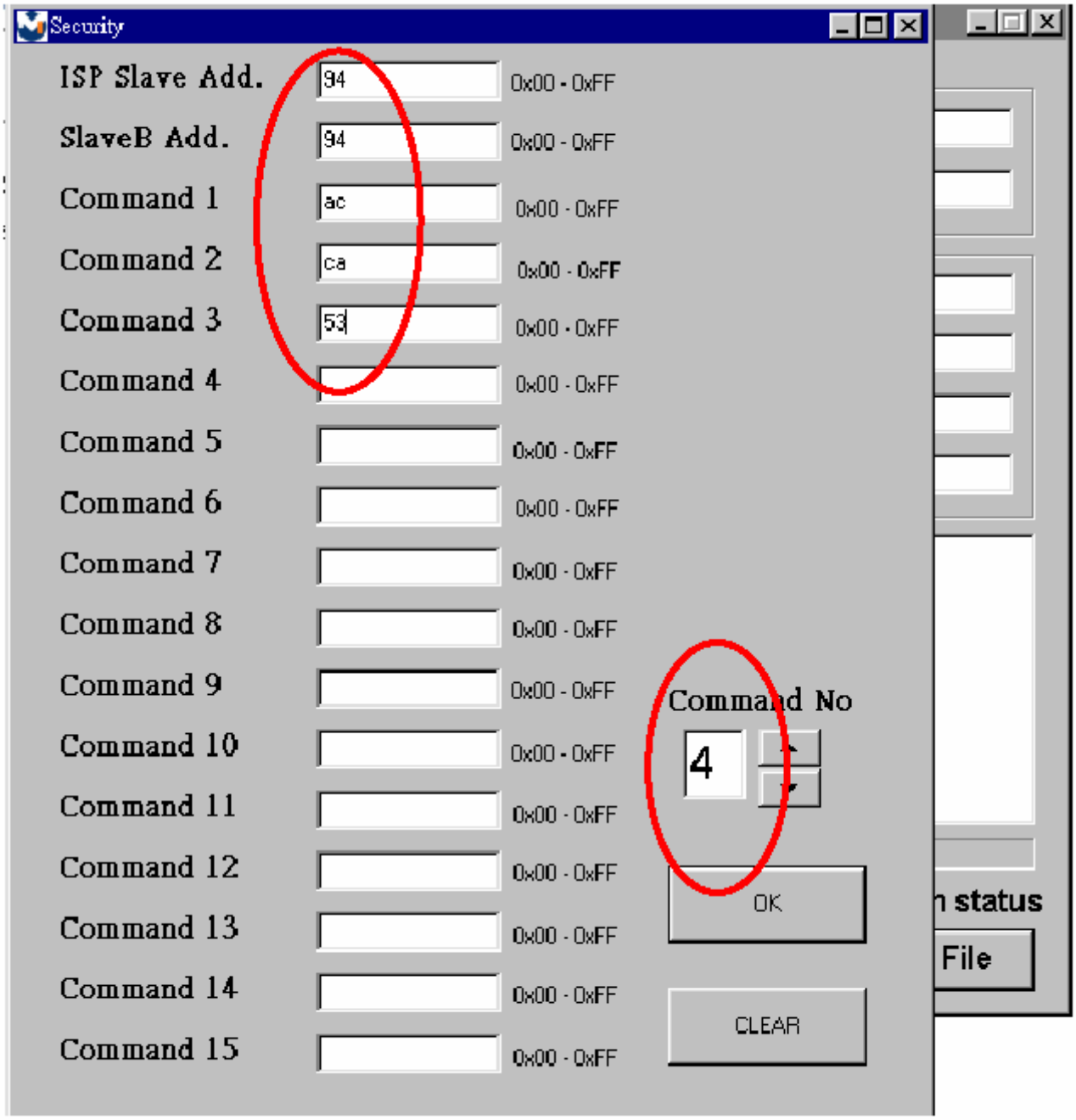


Fig 3.6

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.

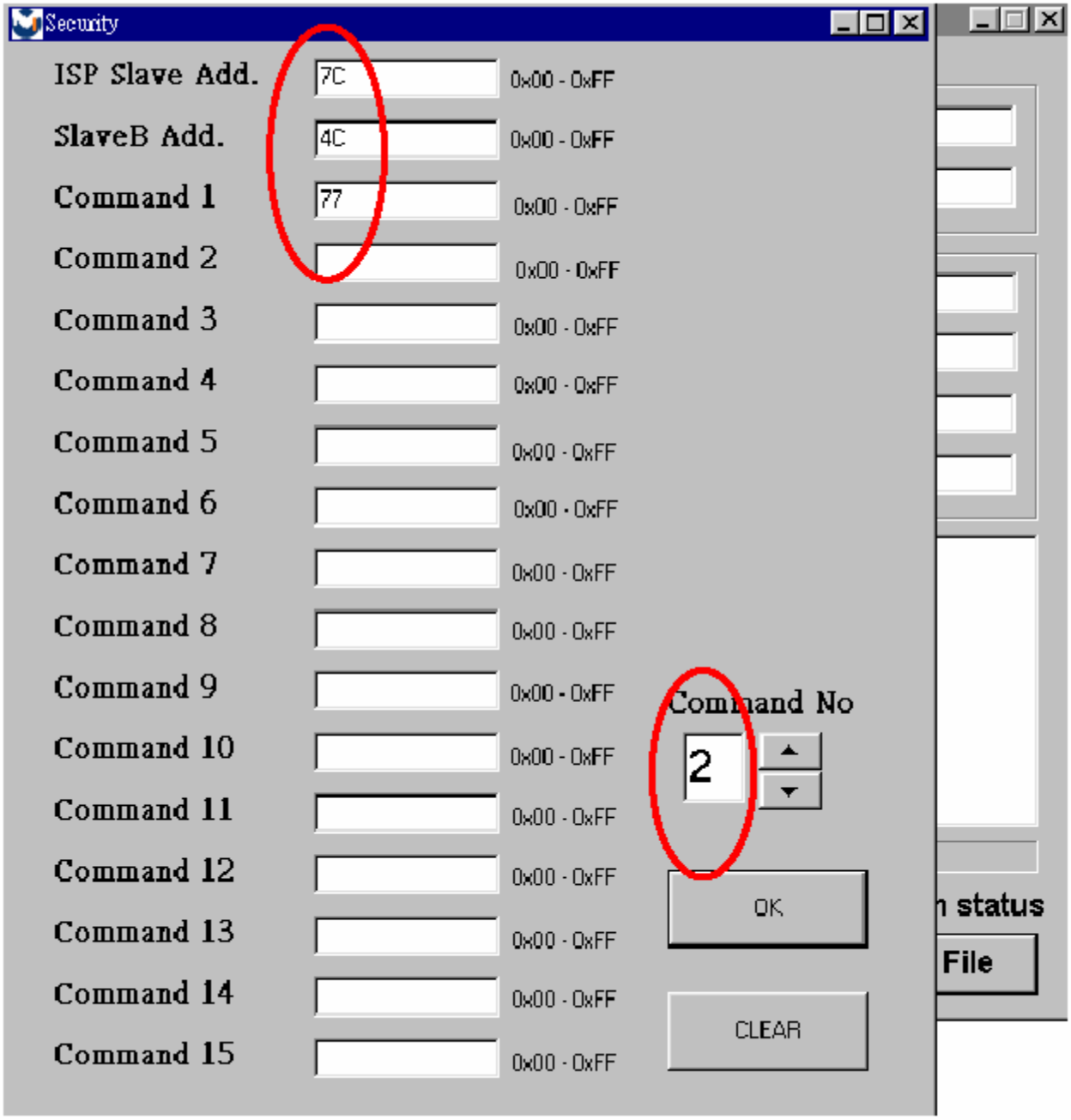


Fig 3.7

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.

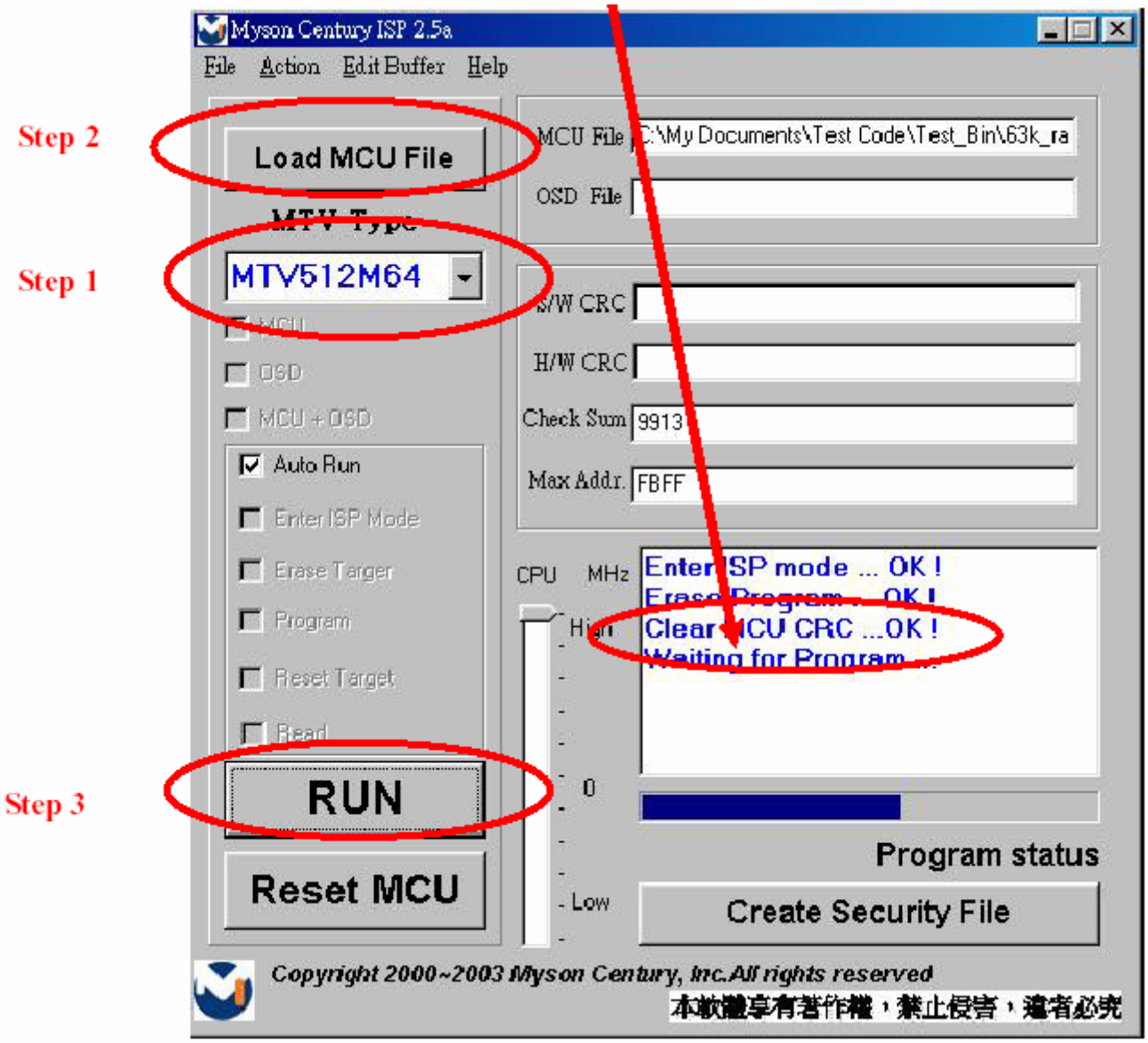
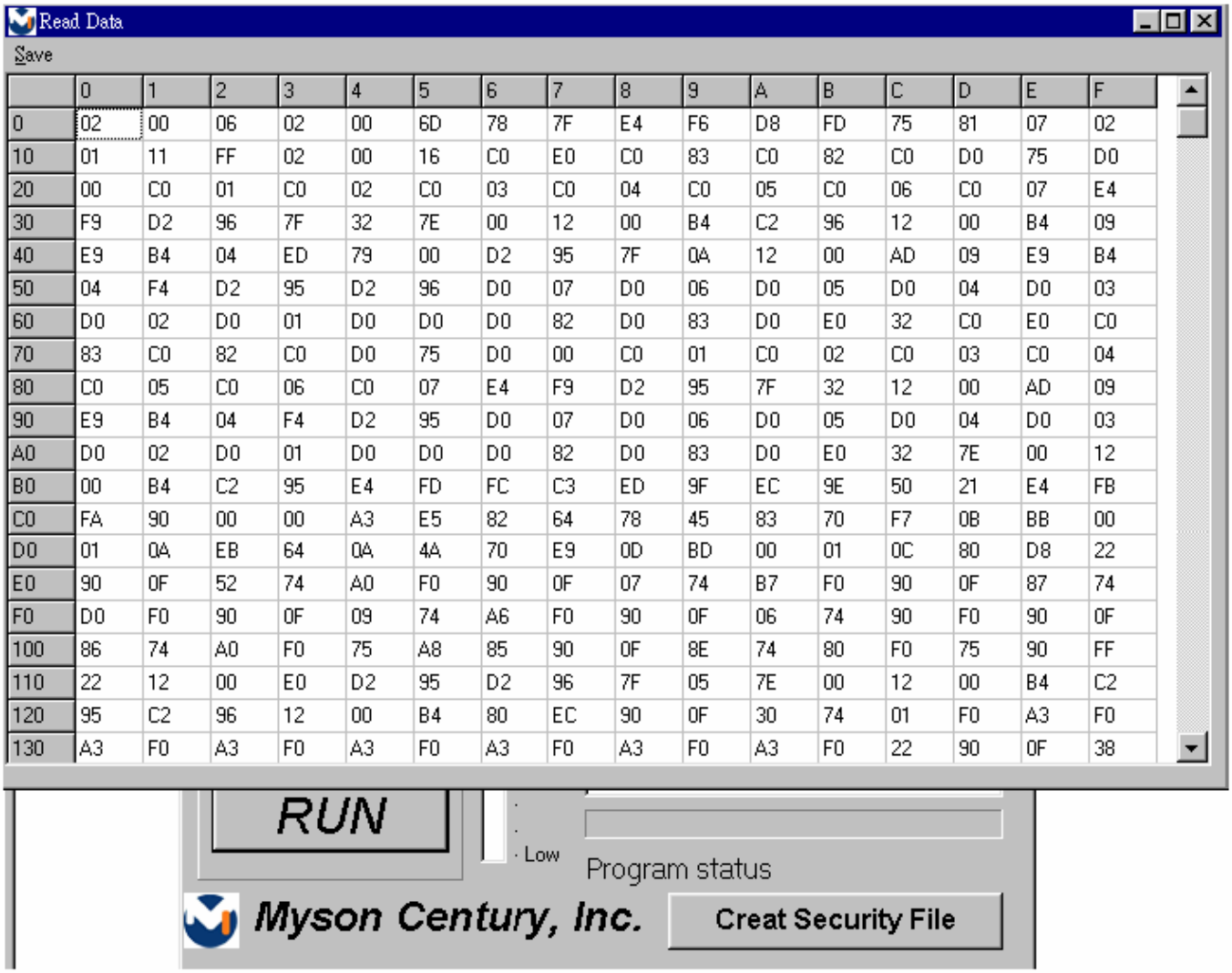


Fig 4.1

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.



	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	02	00	06	02	00	6D	78	7F	E4	F6	D8	FD	75	81	07	02
10	01	11	FF	02	00	16	C0	E0	C0	83	C0	82	C0	D0	75	D0
20	00	C0	01	C0	02	C0	03	C0	04	C0	05	C0	06	C0	07	E4
30	F9	D2	96	7F	32	7E	00	12	00	B4	C2	96	12	00	B4	09
40	E9	B4	04	ED	79	00	D2	95	7F	0A	12	00	AD	09	E9	B4
50	04	F4	D2	95	D2	96	D0	07	D0	06	D0	05	D0	04	D0	03
60	D0	02	D0	01	D0	D0	D0	82	D0	83	D0	E0	32	C0	E0	C0
70	83	C0	82	C0	D0	75	D0	00	C0	01	C0	02	C0	03	C0	04
80	C0	05	C0	06	C0	07	E4	F9	D2	95	7F	32	12	00	AD	09
90	E9	B4	04	F4	D2	95	D0	07	D0	06	D0	05	D0	04	D0	03
A0	D0	02	D0	01	D0	D0	D0	82	D0	83	D0	E0	32	7E	00	12
B0	00	B4	C2	95	E4	FD	FC	C3	ED	9F	EC	9E	50	21	E4	FB
C0	FA	90	00	00	A3	E5	82	64	78	45	83	70	F7	0B	BB	00
D0	01	0A	EB	64	0A	4A	70	E9	0D	BD	00	01	0C	80	D8	22
E0	90	0F	52	74	A0	F0	90	0F	07	74	B7	F0	90	0F	87	74
F0	D0	F0	90	0F	09	74	A6	F0	90	0F	06	74	90	F0	90	0F
100	86	74	A0	F0	75	A8	85	90	0F	8E	74	80	F0	75	90	FF
110	22	12	00	E0	D2	95	D2	96	7F	05	7E	00	12	00	B4	C2
120	95	C2	96	12	00	B4	80	EC	90	0F	30	74	01	F0	A3	F0
130	A3	F0	A3	F0	A3	F0	A3	F0	A3	F0	A3	F0	22	90	0F	38

Fig 5.1

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

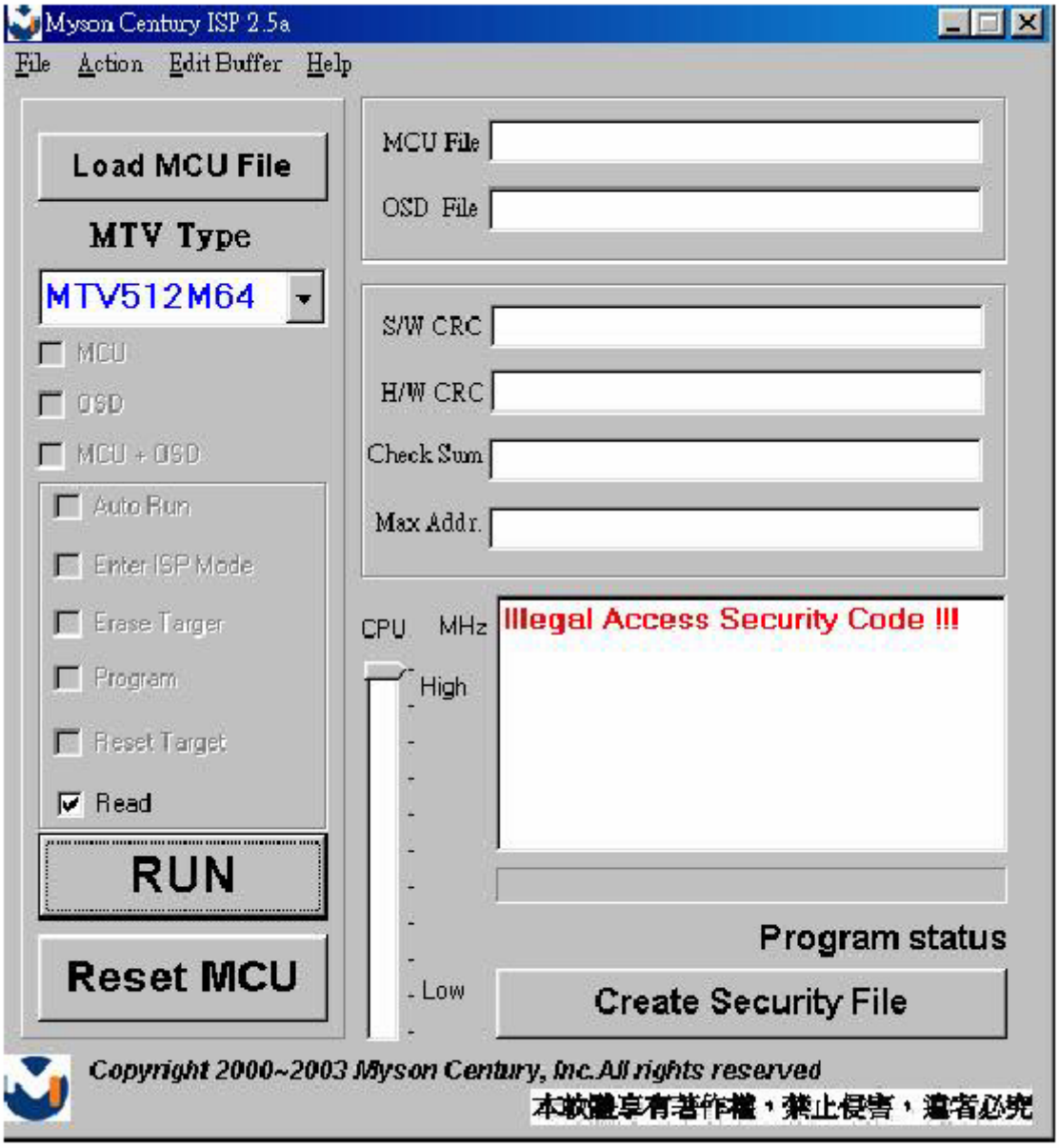
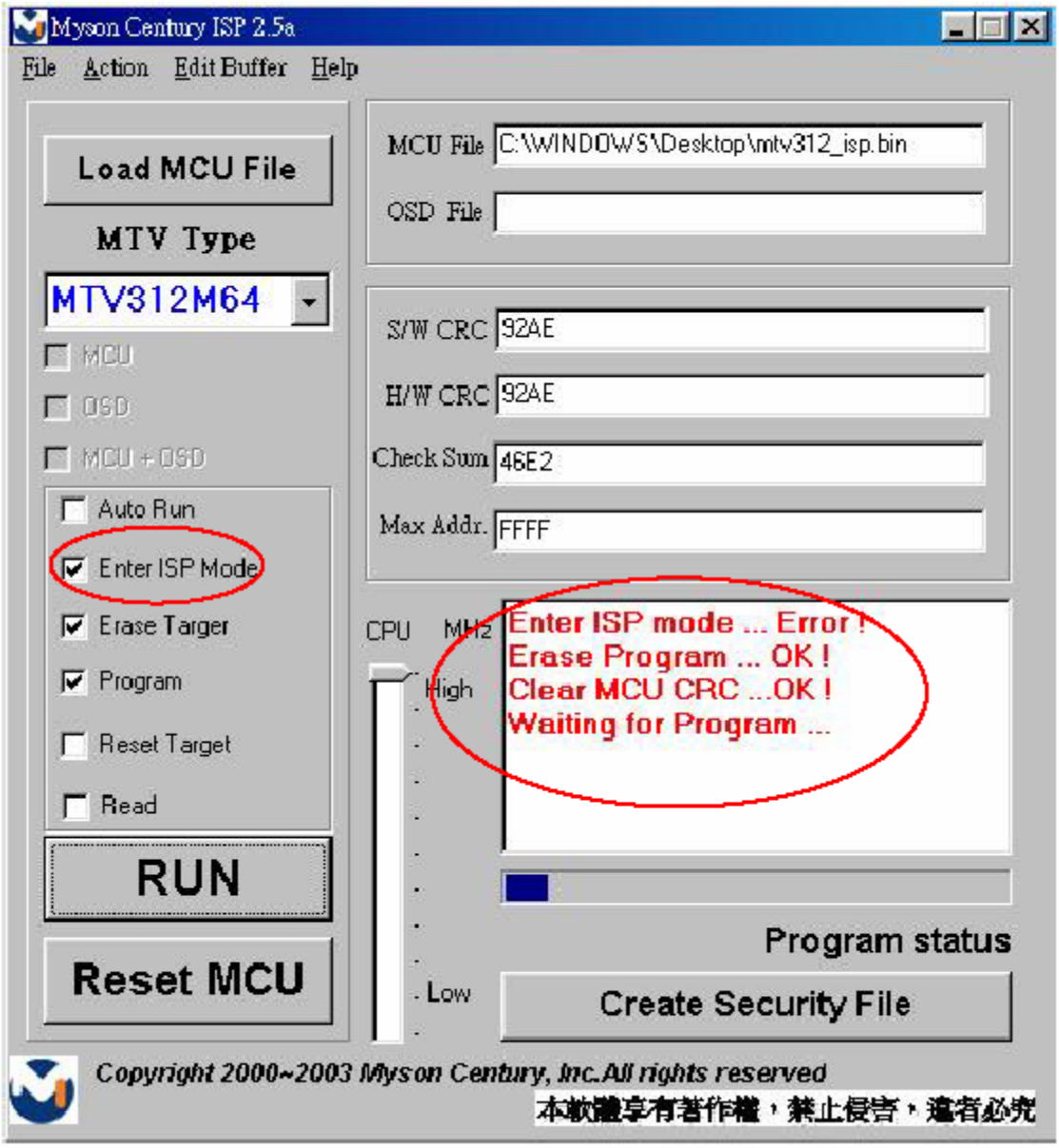
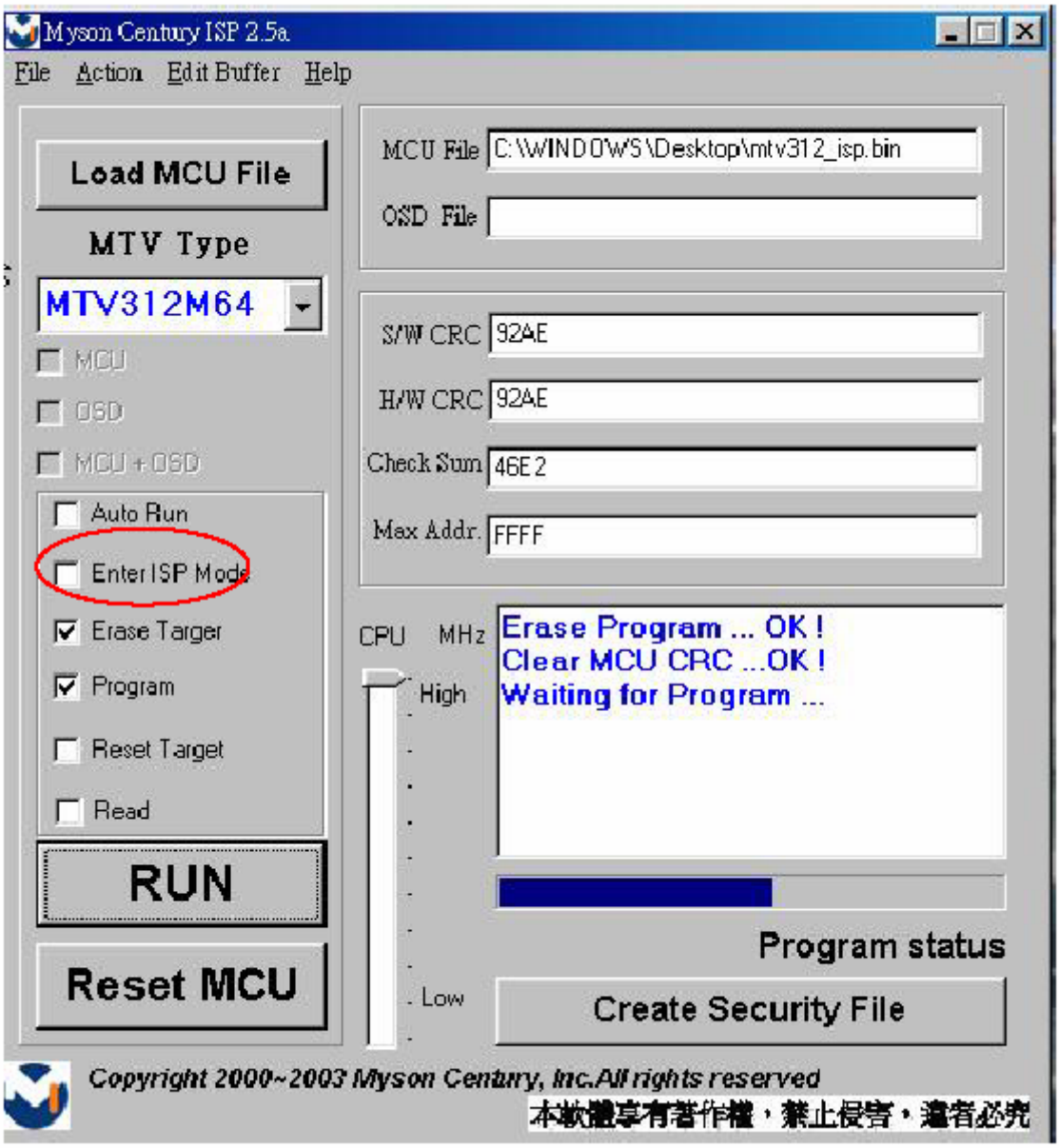


Fig 5.2

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 using the MTV312M64 or before MCU serials, the MCU will always in 'ISP Mode' even programming fail or erase MCU that instead of select or press '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

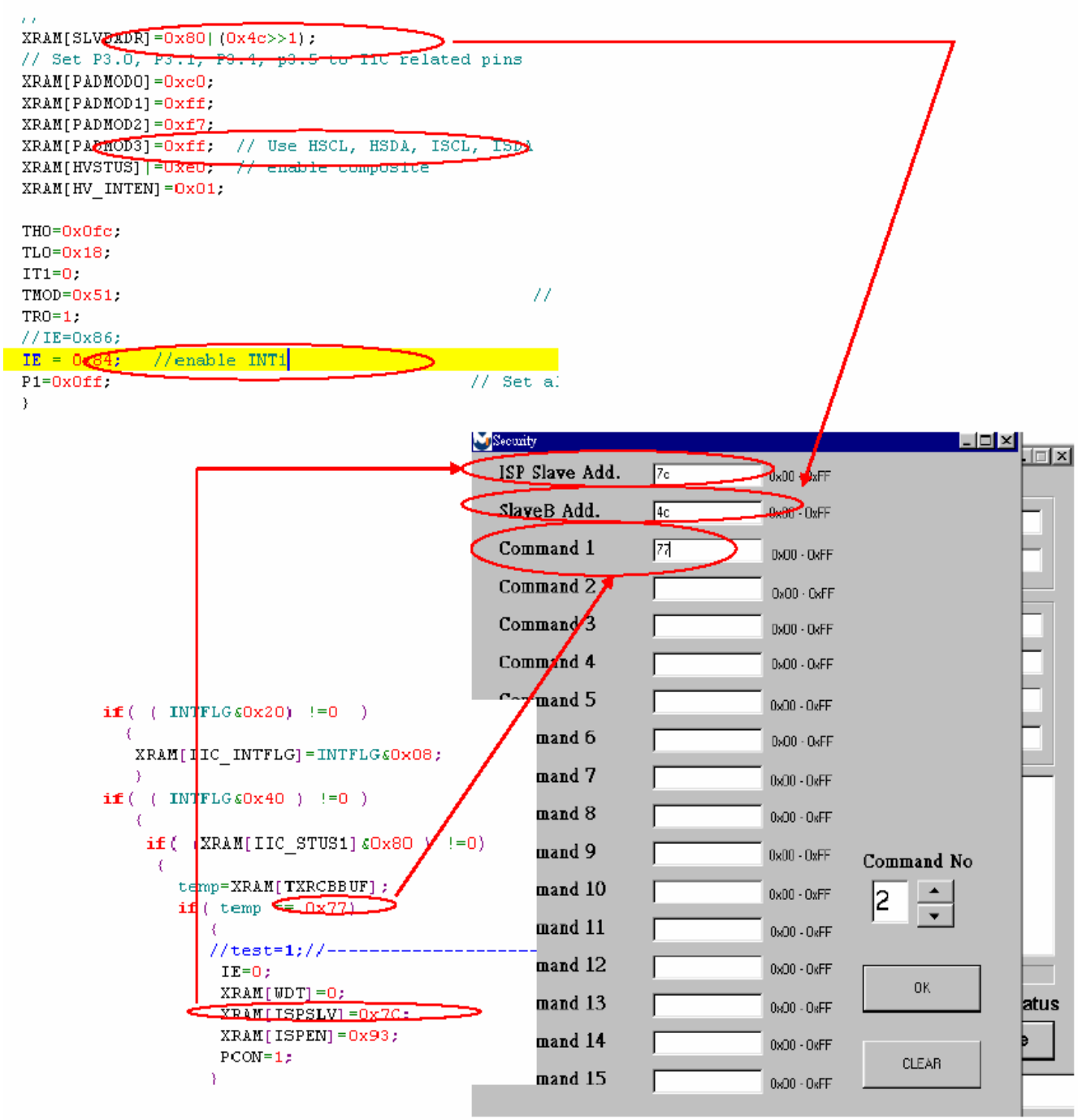
(b) Disable all interrupt to prevent CPU wake-up

(c) Write ISP slave address

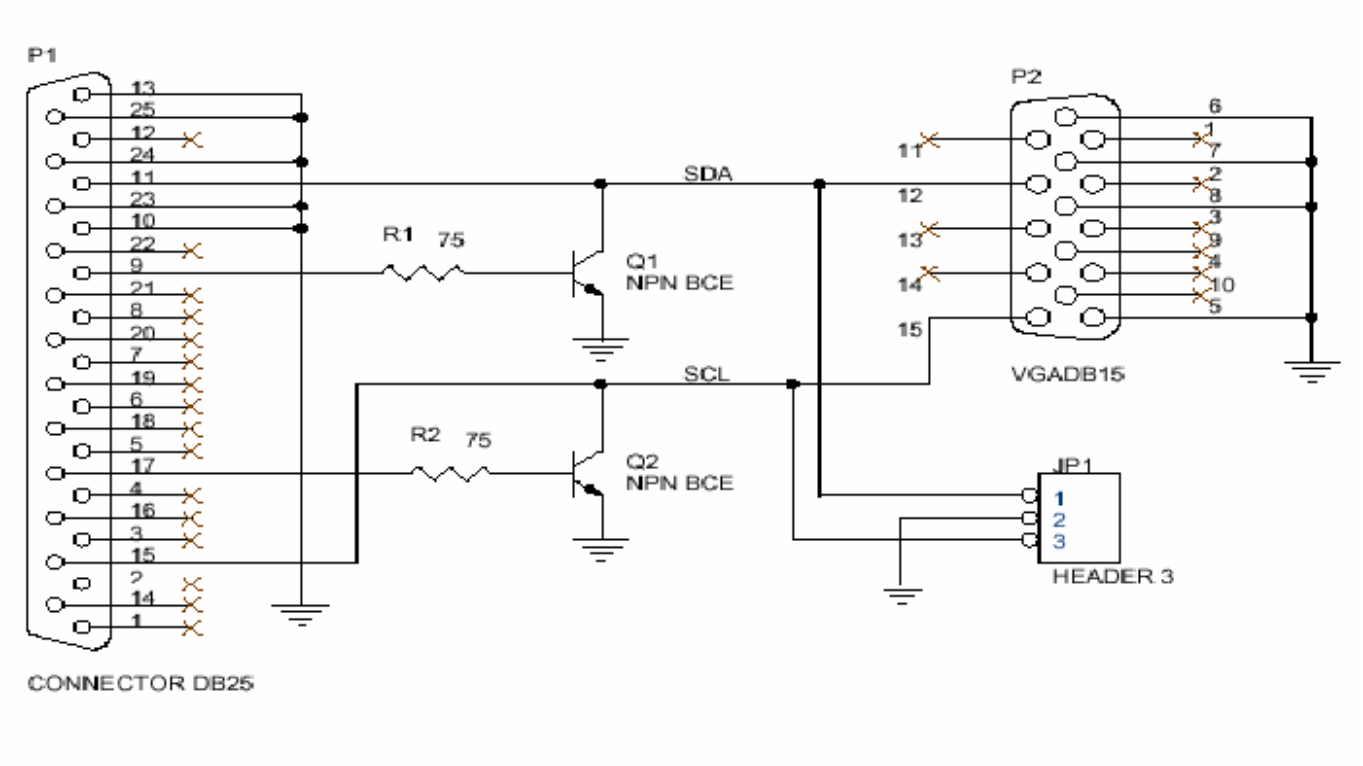
(d) Write 93h to ISP enable address to enable ISP

(e) Enter 8051 idle mode

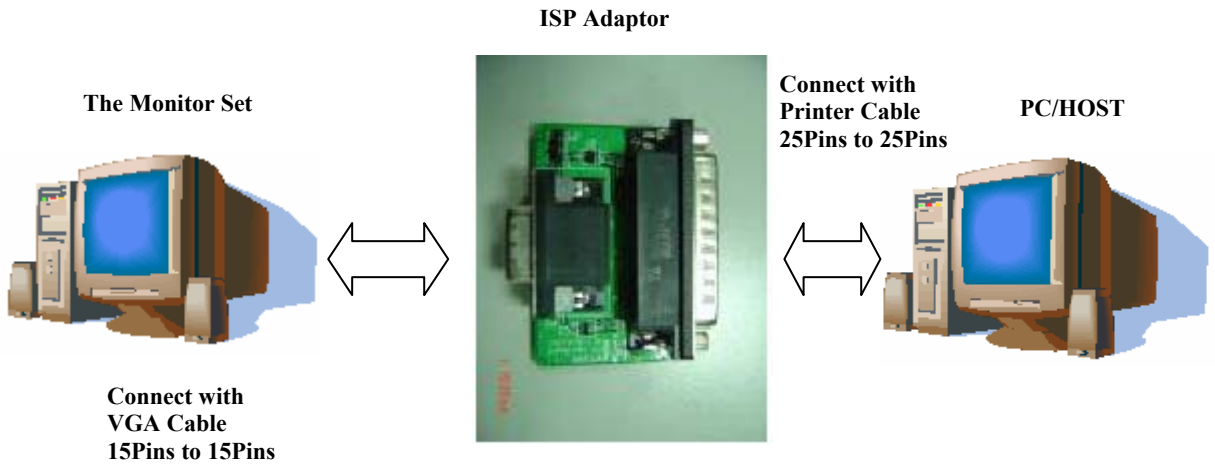
7.4 The followings show the relationship between the code and the security code.



8. ISP Adaptor Schematic



9. Adaptor Linking



Packing For Shipping

1. 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)

Figure1

Figure2

1.3 Put the cushion into the carton then place the monitor on the cushion. (Figure 3)

1.4 Put the cushion then place all the accessories into the carton. As last, close the carton and seal it with tape. (Figure 4)

Figure3

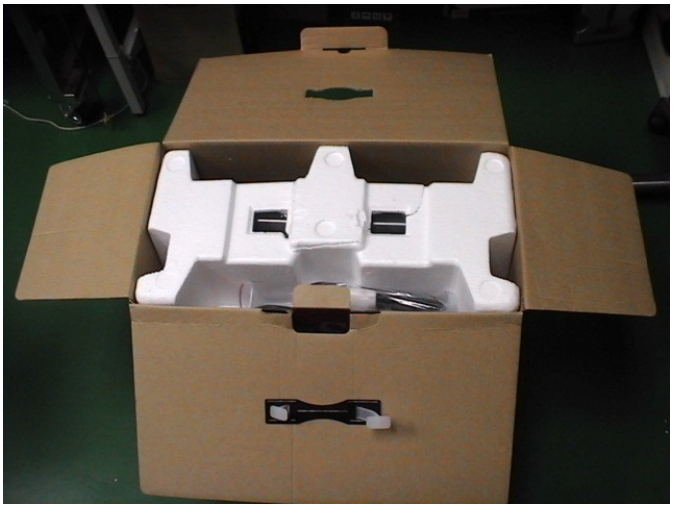


Figure4

1 Separate Stand Assy

1.1 Remove Stand Cover

Step 1 :

Remove the Stand Cover.

Step 2 :

Press the connect place.

Step 3 :

Remove the Stand Assy

Step 4 :

Completed.

2 Separate Rear Cover (Rear Case Assy)

Separate Bezel hooks to take Bezel and Rear Cover apart.

Step 1 :
Loose and remove 4 screws.

Step 2 :
Separate Bezel hooks to take Bezel and Rear Cover apart.

Step 3 :
Remove Rear Cover.

Step 4 :
Completed.

3 Remove Power Board and AD Board

3.1 Remove Metal Cover

Step 1 :

Remove FFC from OSD Board.

Step 2 :

Lift up LCD module and remove bezel.

Step 4 :

Remove 2 pieces of Backlight wires.

Step 5 :

Remove 2 pieces of Backlight wires.

Step 6 :

Loose and remove 4 screws.

Step 7 :

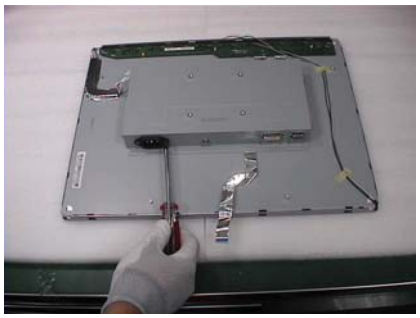
Loose and remove 2 screws.

Step 8 :

Loose and remove 2 screws.

Step 9 :

Loose and remove 2 screws.



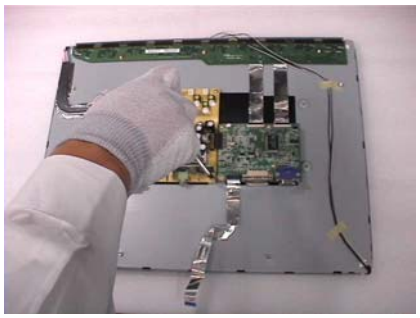
Step 10 :

Remove the PCBA Cover

3.2 Remove Power Board and AD Board

Step 1 :

Loose and remove 4 screws.



Step 2 :

Remove Lips Board

Step 3 :

Remove the FFC.

Step 4 :

Remove 2 pieces of FFCs.

Step 5 :

Loose and remove 4 screws.

Step 6 :

Remove AD PCBA.

Step7 :

Completed.

4 Change New AD Board and Power Board

Step 1 :

Place new AD Board.

And fasten 4 fixed screws.

Step 2 :
Fasten 4 fixed screws.

Step 3 :
Insert 2 pieces of FFCs .

Step 4 :
Insert FFC.

Step 5 :
Insert new Lips Board.

Step 6 :
Fasten 4 fixed screws.

Step 7 : Completed.

5. Remove OSD Board

Step 1 :

Remove the FFC

Step 2 :

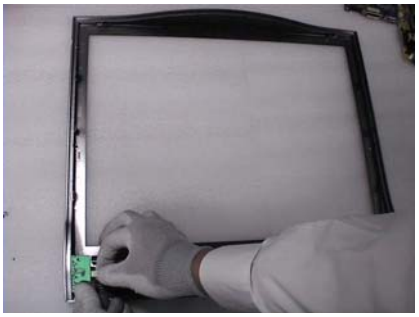
Separate both Audio Cables.

Step 3 :

Loose and remove 2 screws.

Step 4 :

Remove the FFC and OSD board.

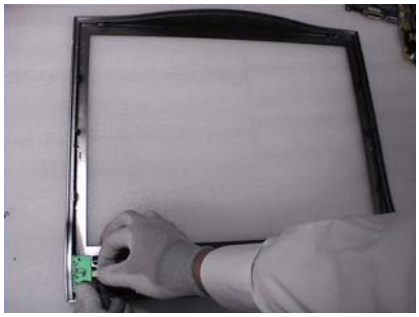


Step 5:

Completed.

6.Change New OSD Board

Step 1 :
Place New OSD Board and insert FFC.



Step 2 :
Fasten 2 screws.

Step 3 :
Insert Audio cables

Step 4:
Completed.

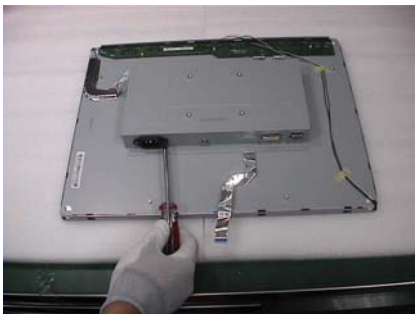
7. Add Cover to AD PCB Heatsink

Step 1 :

Join the PCB Cover.

Step 2 :

Fasten 2 fixed screws.



Step 3 :

Fasten 2 fixed screws.

Step 4 :

Fasten 2 fixed screws.

Step 6 :

Fasten 4 fixed screws

Step 7 :

Insert 2 pieces of Backlight wires.

Step 8 :

Insert 2 pieces of Backlight wires.

Step 9 :

Join LCD module and remove bezel.

Step 10 :

Insert FFC.

Step 11 :

Completed.

8. Rear Assy & Stand Assembly

Step 1 :

Place Rear Cover.

Step 2 :

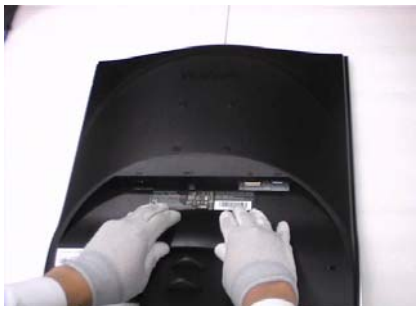
Fasten 4 fixed screws.

Step 3 :

Place the Stand Assy.

Step 4 :

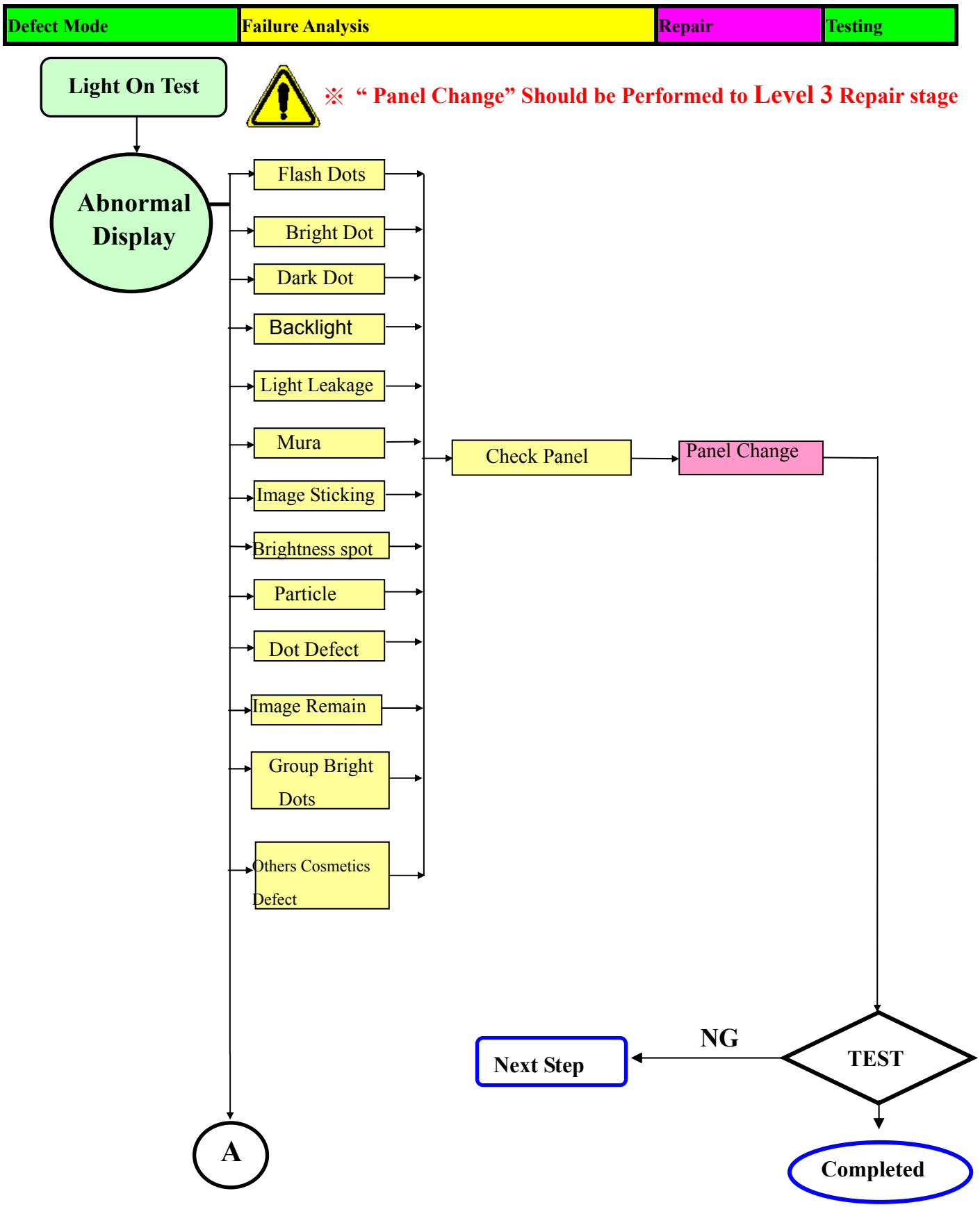
Join the Stand Cover.



Step 5 :

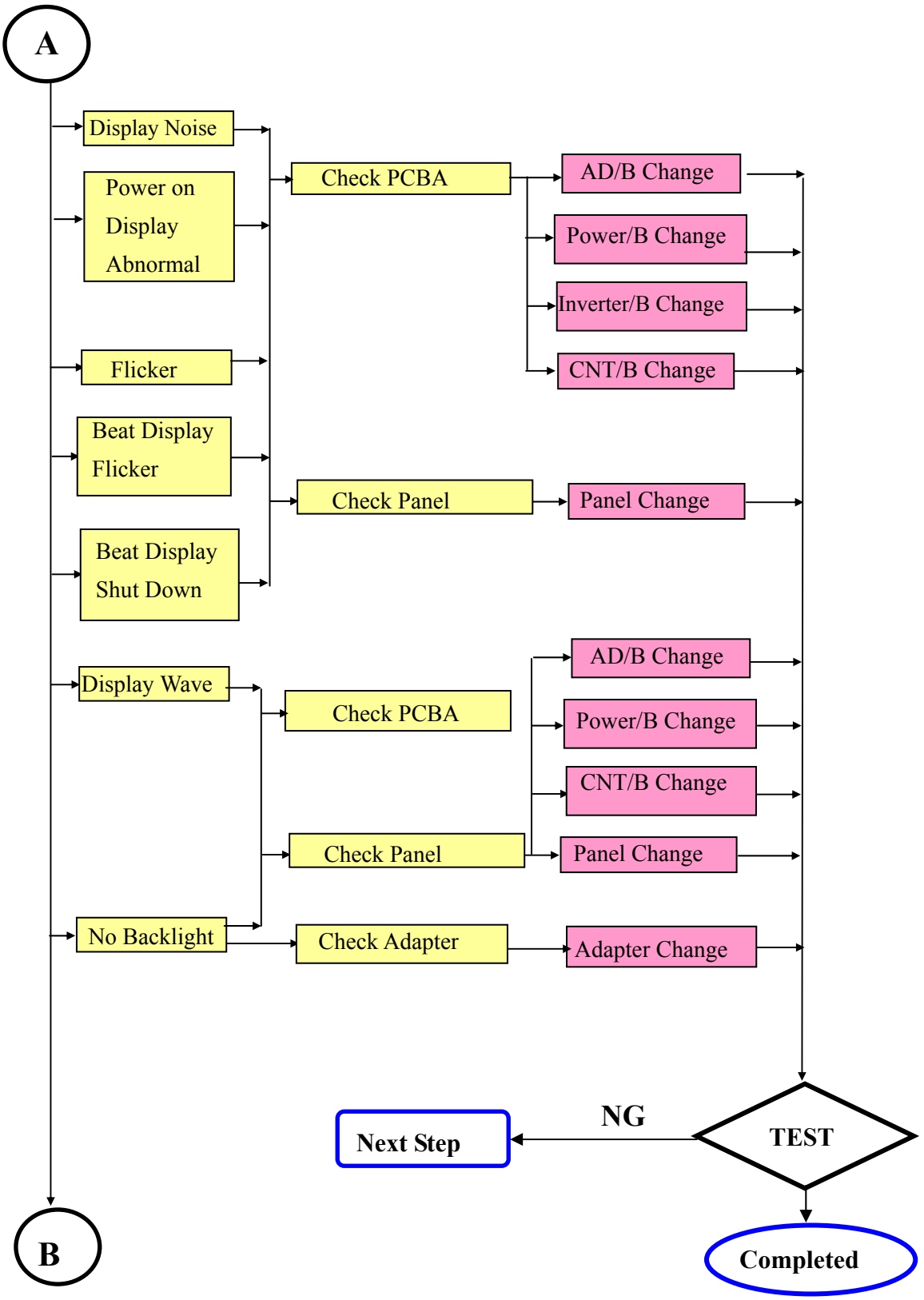
Completed.

6. Troubleshooting Flow Chart



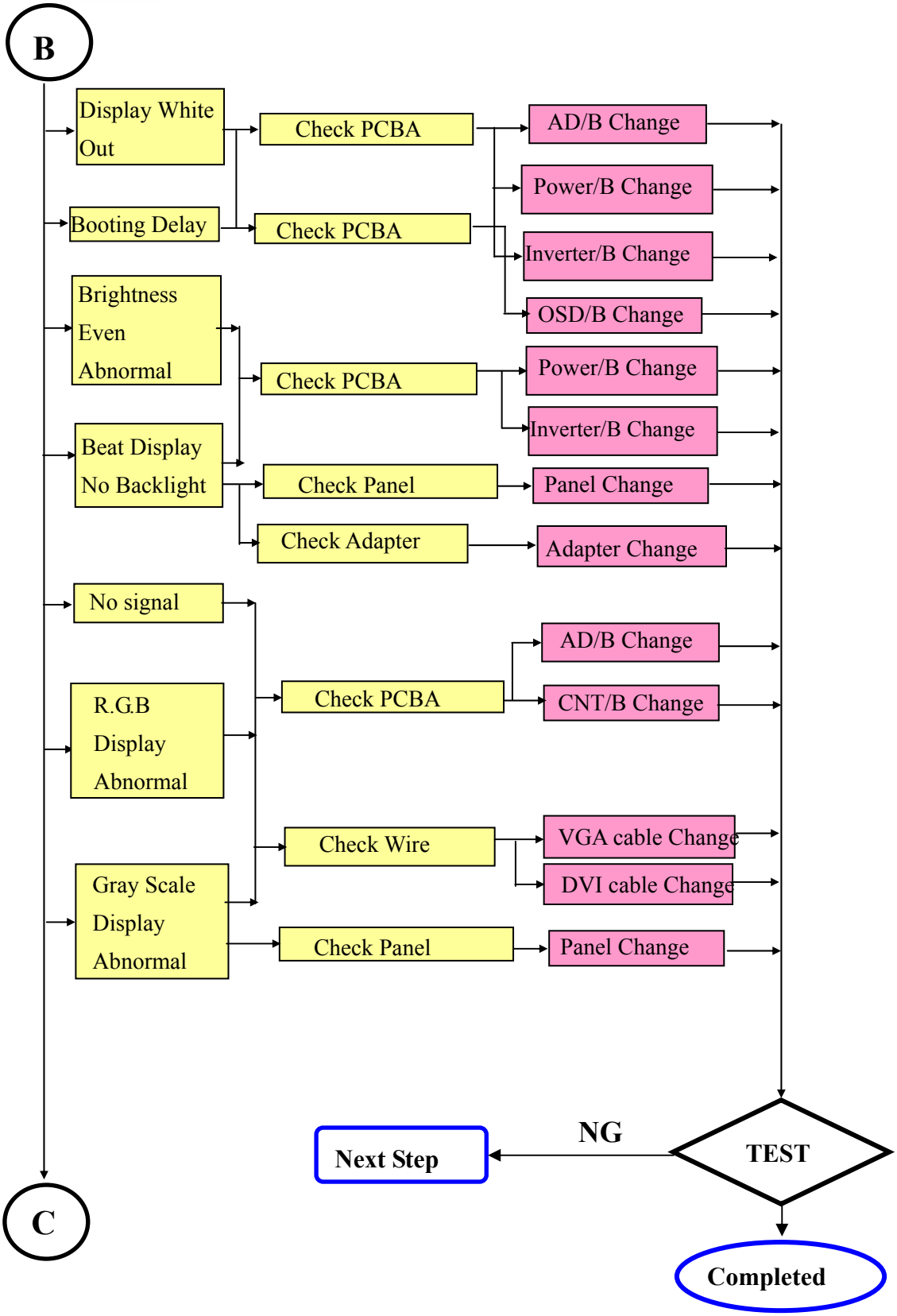
Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed to Level 3 Repair stage



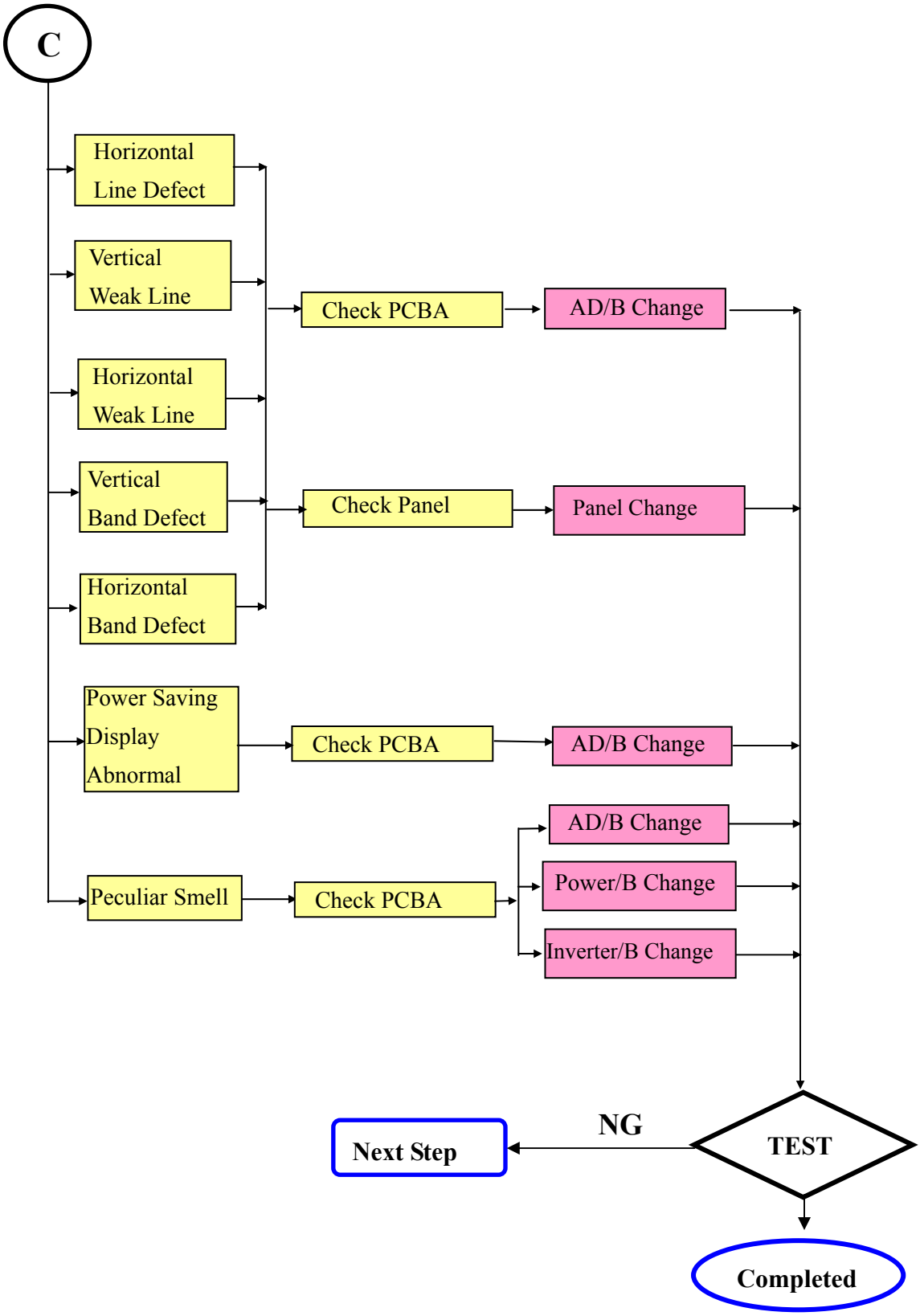
	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed to Level 3 Repair stage



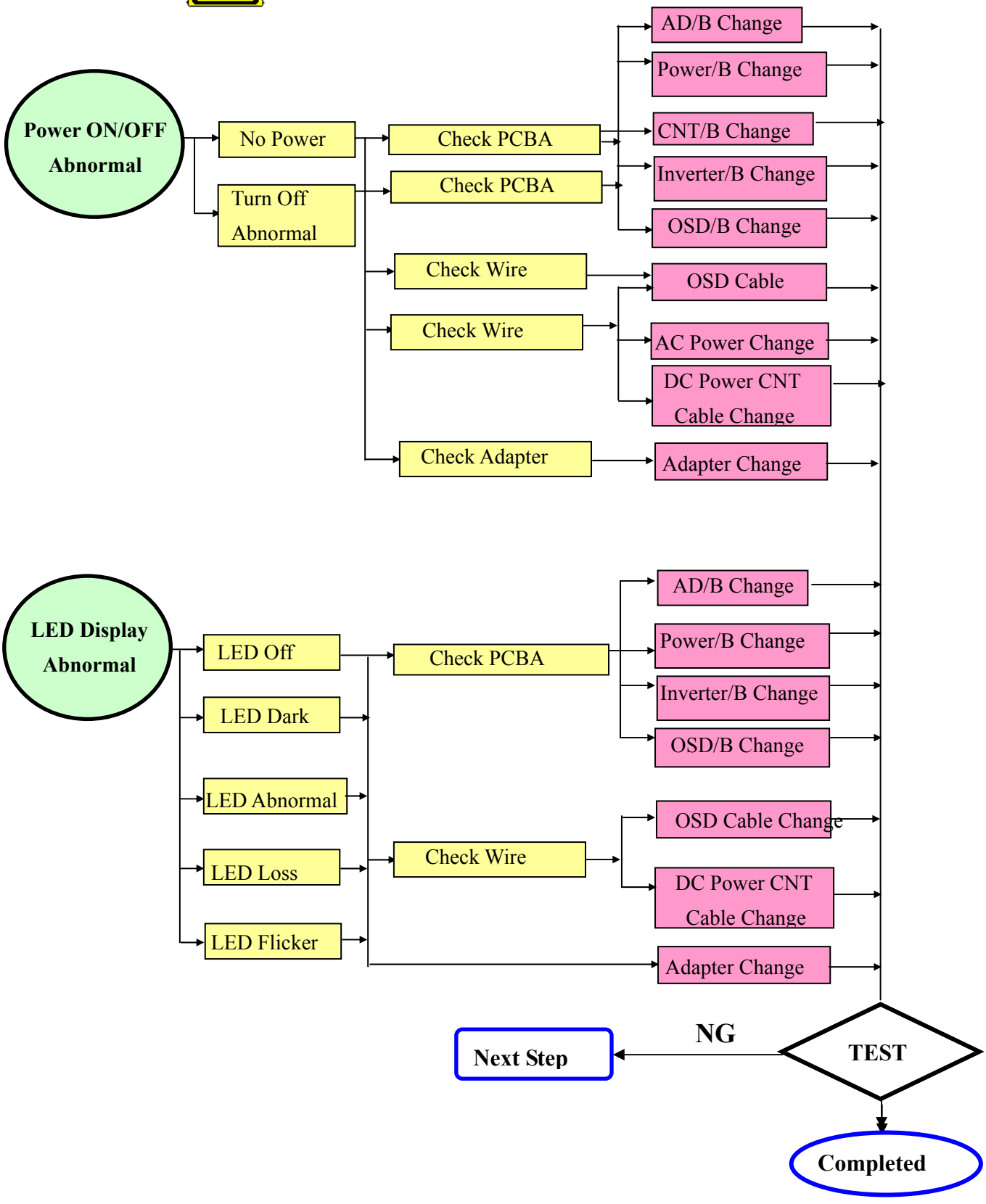
Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed to Level 3 Repair stage

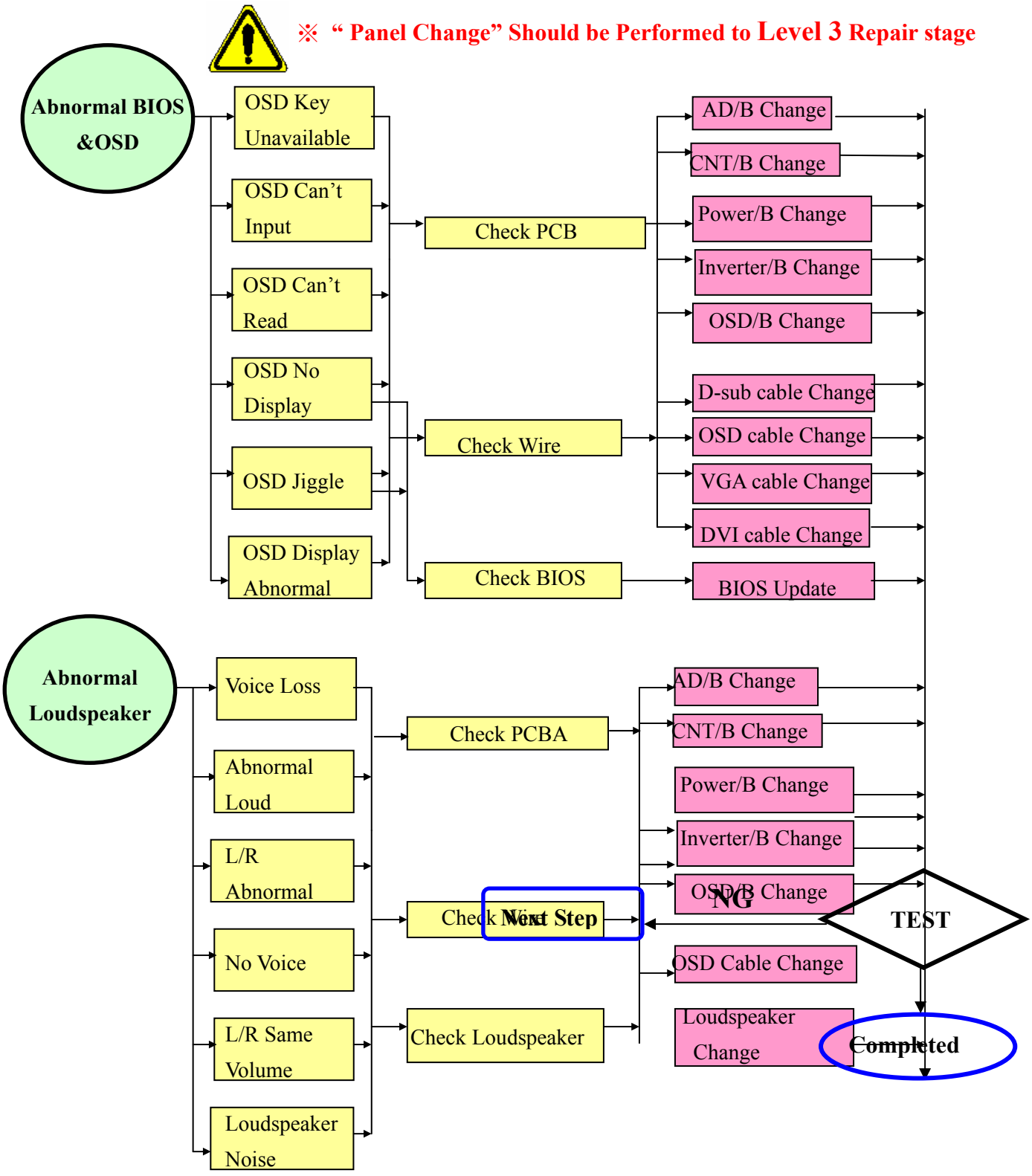


Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed to Level 3 Repair stage

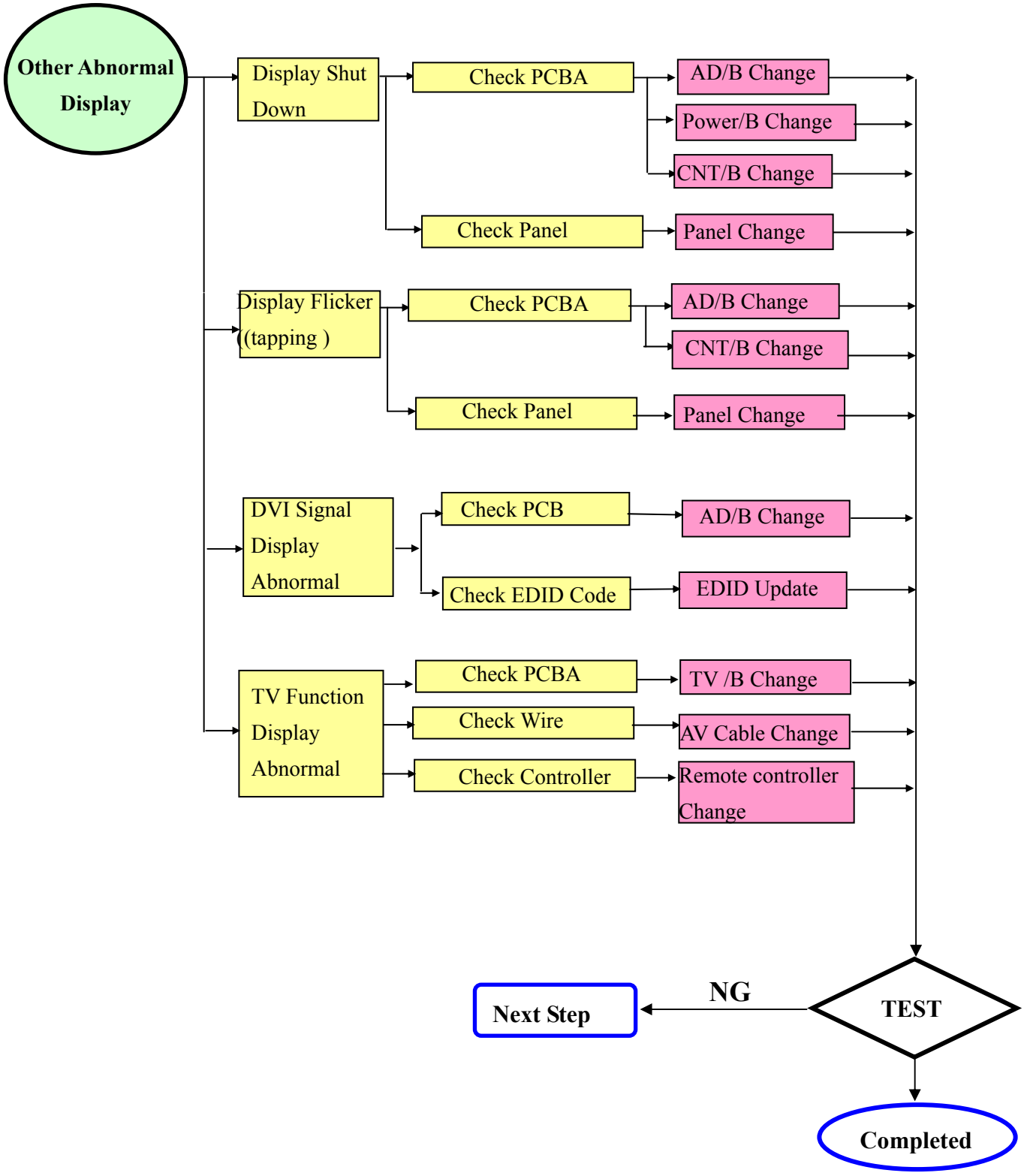


Defect Mode	Failure Analysis	Repair	Testing



Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed to Level 3 Repair stage



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 (VG2030m-1)

ViewSonic Model Number: VS11234

Serial No. Prefix: QGZ **Rev: 1a**

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#
1	**Accessories:**	Power Cord, VCTF 3G 0.75mm^2		A-00004047	32-D001922		
2	**PC Board Assembly:**	Power Switch Board, A201P1-P01-H,A201P1-P01-H-K1,1101-01,Rev.01		B-00005703	35-D007988		
3		On Screen Display Board ,A201P1-P01-H,A201P1-P01-H-K2,1101-01,Rev.01		B-00005704	35-D007990		
4		Lips With Audio,DAC-12M033 AF,02 A,12 V/0.7 A,5 V/3 A,4L,5 mA,2650 V		B-00006040	27-D004260		
5		Audio Control Rev.04		B-00008011	35-D008184		
6	**Cabinets:**	Back Cover (Rear Assy, A201P1-H14,Black)		C-00005671	40-D007468		
7		Cover Hinge - ABS PA-757		C-00008139	40-D013575		
8		Front Panel - Silver(TY4818A)/Black(M1077)		C-00008140	40-D013516		
9		Base Assembly - (Stand Seat)		C-00008141	40-D013661		
10	**Cables:**	Accessory Cable,Audio,NONE,Black,Pins-Pins		CB-00000547	32F2818004		
11		DVI Cable, S/L, 1.8M, W/2F		CB-00002083	32F0000004		
12		Accessory Cable, D-Sub		CB-00004287	32F3018003		
13		Flat Cable (FFC,862P051787A/CFC2108,6 Pins)		CB-00005675	32-D007466		
14		Flat Cable (FFC,862P051786A/CFC2109,15 Pins)		CB-00005676	32-D007464		
15		Flat Cable (FFC,0.5x36x117xD(3.5/3.5/5/5),36 Pins)		CB-00005677	32-D008152		
16	**Documentation:**	Safety Label - 160 mmx30 mm		DC-00008134	77-D013594		
17		Carton Label - 76.2 mmx76.2 mm		DC-00008135	77-D013595		
18		CD-ROM		DC-00008136	76-D013600		
19	**Hardware:**	SCREW,3,P=0.5 mm,L=4 mm,Pan Head,Phillips Cross Recess		HW-00000553	42A9930008		
20		Screw,M3*P0.5*6,Steel		HW-00000555	42A9930014		
21		Screw,¿3*P1.27*8,¿5.5*2,Steel		HW-00000557	42A9930017		
22		Screw, M4, P=0.7 mm, L=8 mm Round Head		HW-00004042	42-D000649		
23		SCREW,4,P=0 mm,L=11.8 mm,Hexagon Stand Off,Socket		HW-00006041	42A9940007		
24	**Miscellaneous:**	Tape Security, OPP,L900xW50x0.045mm		M-00000560	7345511002		
25	**Packing Material:**	PE Bag		P-00000595	7841919921		
26		Foam - (Bottom)		P-00008136	78-D013577		
27		Foam (Top)		P-00008137	78-D013578		
28		Craft Box		P-00008138	78-D013593		
29		Generic Foam Set		P-00001347	30833		
30		Generic Box		P-00002515	20653		
31	**Plastics:**	Panel Cover - Panel Protector Film		PL-00008032	73-D007951		

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 (VG2030m-1)

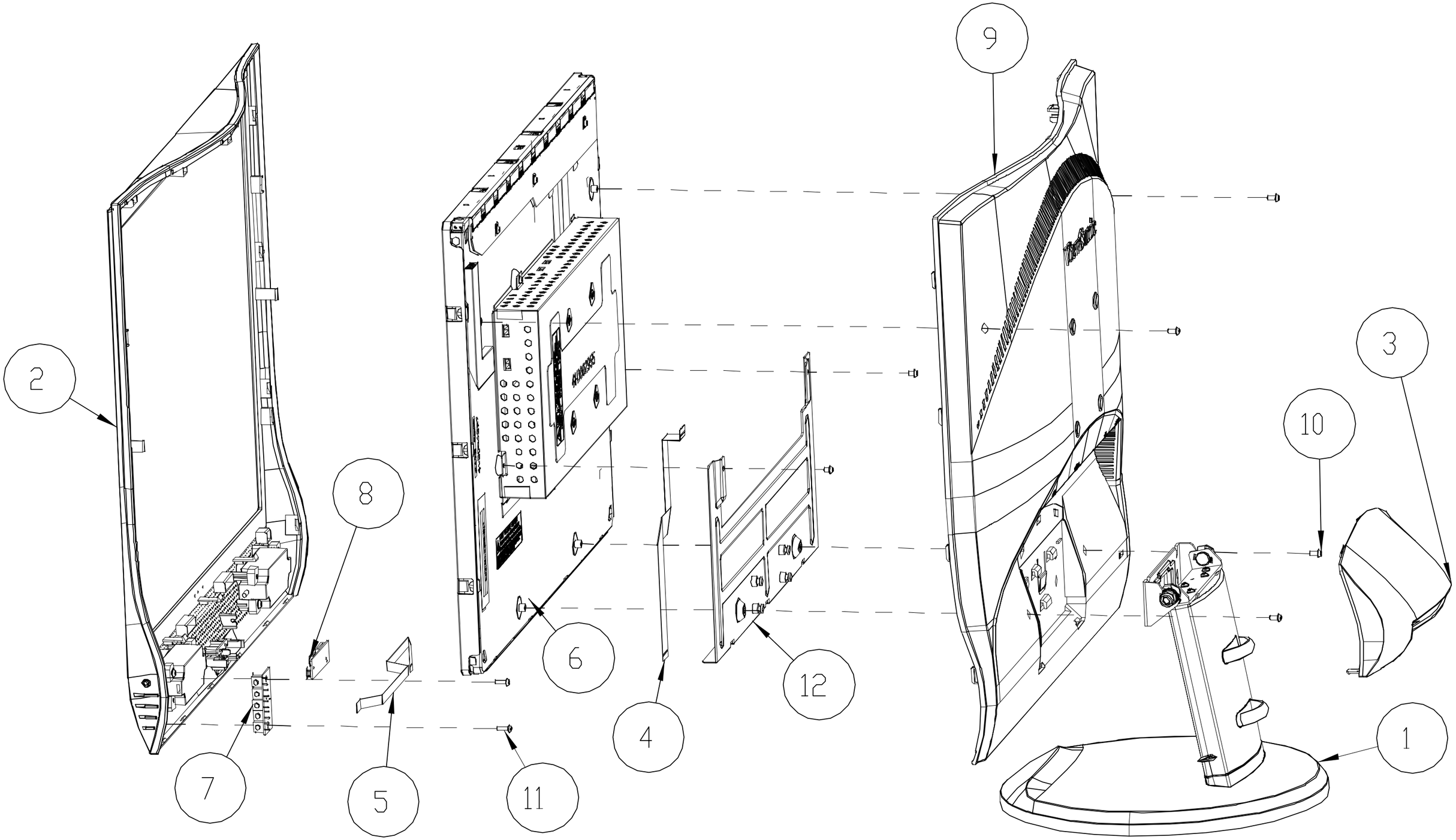
ViewSonic Model Number: VS11234

Rev: 1a

Serial No. Prefix: QGZ

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	HW-00000553	42A9930008	SCREW,3,P=0.5 mm,L=4 mm,Pan Head,Phillips Cross Recess,Hama Naka Motogawa Hama Naka Shoukin Shiho Shin Yee Shye Ching,Green I			15
2	HW-00006041	42A9940007	SCREW,4,P=0 mm,L=11.8 mm,Hexagon Stand Off,Socket,ShihoShin YeeShye Ching Hama Naka Motogawa,Green I			4
3	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 Shin Yee,head D8,Green I			1
4	C-00005673	41-D002955	Cover AD Assy,A190A2,secc,Jiin Ming Kunshan Jincheng_Base Assy CLT Ningbo_Metal,Green II			1
5	B-00006040	27-D004260	Lips With Audio,DAC-12M033 AF,02 A,12 V/0.7 A,5 V/3 A,4L,5 mA,2650 V,Delta Dongguan_LIPS,Green I			1
6	C-00005685	41-D004344	Metal Frame Front,A201P1,SECC t=0.6mm,Fomgder/Chia Chang Suzhou,Green II			1
7	N/A	44-D008021	Backlight Unit,A201P1,CLT_BL,L-type lamp,Green II			1
8	CB-00005677	32-D008152	FFC,0.5x36x117xD(3.5/3.5/5/5),36 Pins,Tennsure Young Shin,PCBA_X to PCBA_AD,package AL foil,A201P1,Green I			2
9	B-00008011	35-D008184	PCBA for ,A190A2-A02-H,A190A2-A02-H-S1,1206-05,Rev.04,USI ITC Gigabyte,ODM,Cost Down,Green II			1
10	N/A	36-D001339	Driver IC,Scan,A170E1,HX8633CPD400,256Channel,Himax,Green II			4
11	N/A	LXK109XXX1	20.1" TN Asahi 0.7mm & CMO CF with Photo Spacer for ODF Process (Panel Base)			1
12	N/A	73-D012894	ACF,COG,AC-8409J-23,100000 mmx1.5 mm,Hitachi Chemical,Hitachi COG_ACF AC-8409J-23			0.00332
13	N/A	7344191017	ACF,AC-4251FY-16,100M/RL,Green I			0.0044
14	N/A	36-D004403	Driver IC,COF,Data,A201P1-P01-H,HX8018-A050CBB9,SOF,6 bit,432Channel,Himax,RoHS,Green I			10
15	N/A	73-D002676	ACF,PCB,AC-9825R-35,100000 mmx1.5 mm,Hitachi Chemical,PCB-ACF,Green I			0.0044
16	N/A	35-D004526	PCBA for ,A201P1-H,A201P1-P01-H-X,1101-01,Rev.02,ITC USI,ODM,Green II			1
17	N/A	7349951002	Silicone,TORAY/-9187L,330g			0.5
18	N/A	10-D010697	Software (BIOS),A201P1,20P1LS1003,VSC,Checksum(0x84F8),VSC 201 TSUM,DUAL,AUDIO,Green II			1
19	HW-00000555	42A9930014	SCREW,3,P=0.5 mm,L=6 mm,Pan Head,Phillips Cross Recess,Hama Naka Shoukin/Shye Ching/Hama Naka Motogawa/Shin Yee, NA,Green I			4
20	HW-00000557	42A9930017	SCREW,3,P=1.27 mm,L=8 mm,Pan Head,Phillips Cross Recess,Shiho Shin Yee Shye Ching,Green I			2
21	N/A	41-D007449	Support Plate,A201P1-H14,SECC,Jiin Ming,Green II			1
22	C-00005671	40-D007468	Rear Assy,A201P1-H14,Black(ABS-PA757-J01),Push Power,Audio-in+DVI-D,Green II			1
23	CB-00005675	32-D007466	FFC,862P051787A/CFC2108,6 Pins,Tennsure_FFC/Hung Fu,Green I			1
24	CB-00005676	32-D007464	FFC,862P051786A/CFC2109,15 Pins,Hung Fu/TennRich,Green II			1
25	B-00005704	35-D007990	PCBA for ,A201P1-P01-H,A201P1-P01-H-K2,1101-01,Rev.01,ITC USI,ODM,Green II			1
26	B-00005703	35-D007988	PCBA for ,A201P1-P01-H,A201P1-P01-H-K1,1101-01,Rev.01,ITC USI,ODM,Green II			1
27	C-00008140	40-D013516	Bezel Assy,A201P1-H08,ABS PA-757,Silver(TY4818A)/Black(M1077),Push Power,Green II			1
28	C-00008139	40-D013575	Cover Hinge Assy,A201P1-H08,ABS PA-757,Black(J01),Fuking,ViewSonic,Green II			1
29	C-00008141	40-D013661	Stand Seat Assy,A201P1-H08,Black,ViewSonic Display Limited,VSC P/N:C-00008081,Green I			1
30	PL-00008032	73-D007951	Panel Protector Film,A201P1-H14,XG-536 t=0.1,Just Enter,Green I			1
31	DC-00008134	77-D013594	Safety Label for ,A201P1-H08,160 mmx30 mm,Kunshan Hwakuan Chang Huang,VSC_VG2030m,Green II			1
32	N/A	77-D013596	SN Label for ,A201P1-H08,50 mmx25 mm,Chang Huang Kunshan Hwakuan,VSC_VG2030m,Green II			1
33	N/A	7841795141	Corner Protector,paper,50 mmx50 mmx900 mm,Green I			0.083
34	P-00000595	7841919921	Bag,570 mmx600 mmx0.13 mm,Huang Jyii Suzhuo Hon Chuan Taiwan Hon Chuan,Default,Green II			1
35	M-00000560	7345511002	Tape,A170E1-H0P,900 mmx50 mmx0 mm,Symbio,OPP			0.005
36	N/A	78-D003113	Pallet,A190E3-H02_acer,Wooden,(KD-HT),1209 mmx1066 mmx135 mm,Hua Sun Paper/Shanghai Hang Wei/Ming Li,Green I			0.042
37	N/A	78-D004866	Corner Protector,Paper,M190E3,50 mmx50 mmx1400 mm,Jonin/NingBo Ming-Chan_EPS T:3mm,Green I			0.17
38	N/A	78-D004868	Corner Protector,Paper,M201P1,50 mmx50 mmx800 mm,Jonin Kun Shan Zhong Yang NingBo Ming-Chan_EPS T:3mm,Green II			0.083
39	P-00008137	78-D013578	Cushion,A201P1-H08,EPS,White,510 mmx285 mmx175 mm,Li Ta,PS_From (TOP),Green II			1
40	N/A	79-D013573	Shipping Package Information for ,A201P1-H08,ViewSonic			1
41	P-00008136	78-D013577	Cushion,A201P1-H08,EPS,White,510 mmx285 mmx175 mm,Li Ta,PS_Foam (Bottom),Green II			1
42	DC-00008135	77-D013595	Carton Label for ,A201P1-H08,76.2 mmx76.2 mm,Chang Huang Kunshan Hwakuan,VSC_VG2030m,Green II			1
43	DC-00008136	76-D013600	MENU for A201P1-H08,Complex,1C,Yi Ching Car Tong Kunshan,VSC_VG2030m CD-ROM,Green II			1
44	P-00008138	78-D013593	Carton,A201P1-H08,520 mmx290 mmx560 mm,Chen Yi Paper Yuen Foong Yu Suzhou Chen Yi Ningbo,VSC_VG2030m,Green II			1
45	DC-00008010	7741513161	SN Label for ,A150X1-T02,75 mmx40 mm,Chang Huang Car Tong Kunshan Kunshan Hwakuan,Pallet Barcode Label,Green I			0.04
46	N/A	10-D013640	Software (EDID_D-SUB),A201P1,VSC4D1FA00,VSC,Checksum(50),VSC VG2030m Analog Port,Green II			1
47	N/A	10-D013638	Software (EDID_DVI),A201P1,VSC4D1FD00,VSC,Checksum(9F),VSC VG2030m Digital Port,Green II			1
48	CB-00000547	32F2818004	Accessory Cable,Audio,NONE,Black,Pins-Pins,Green I			1
49	CB-00004287	32F3018003	Accessory Cable,D-Sub,BLACK,Jceprocable,A150X2,Green I			1
50	A-00004047	32-D001922	Power Cord,VCTF 3G 0.75mm^2 CNS CT-08,Black,BSMI,1800 mm,I Sheng,GreenII			1
51	CB-00002083	32F0000004	Accessory Cable,DVI,Black,Jceprocable,DVI-D(M) TO DVI-D(M),S/L,W/2F,Green I			1

8. Exploded Diagram and Exploded Parts List



EXPLODED PARTS LIST (VG2030m-1)

ViewSonic Model Number: VS11234

Rev: 1a

Serial No. Prefix: QGZ

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	C-00008141	40-D013661	O_Assy_TOTAL-15_ASM	1
2	C-00005683	40-D007460	BEZEL_20V14	1
3	C-00008139	40-D013575	COVER_HINGE_ASSY_20V18	1
4	CB-00005676	32-D007464	FFC_AD-OSDP_20V14	1
5	CB-00005675	32-D007466	FFC_OSDP-OSD_20V14	1
6	N/A	PK1PFH1Q02	ISM_A201P1	1
7	B-00005704	35-D007990	PCBA_OSD_20V14	1
8	B-00005703	35-D007988	PCBA_OSD_POWER_20V14	1
9	C-00005671	40-D007468	REAR_20V14	1
10	HW-00000555	42A9930014	SCREW_M3X6L_PH_PHC	4
11	HW-00000557	42A9930017	SCREW_T3X8L_PH_PHC	2
12	N/A	41-D007449	SUPPORT_PLATE_20V14	1

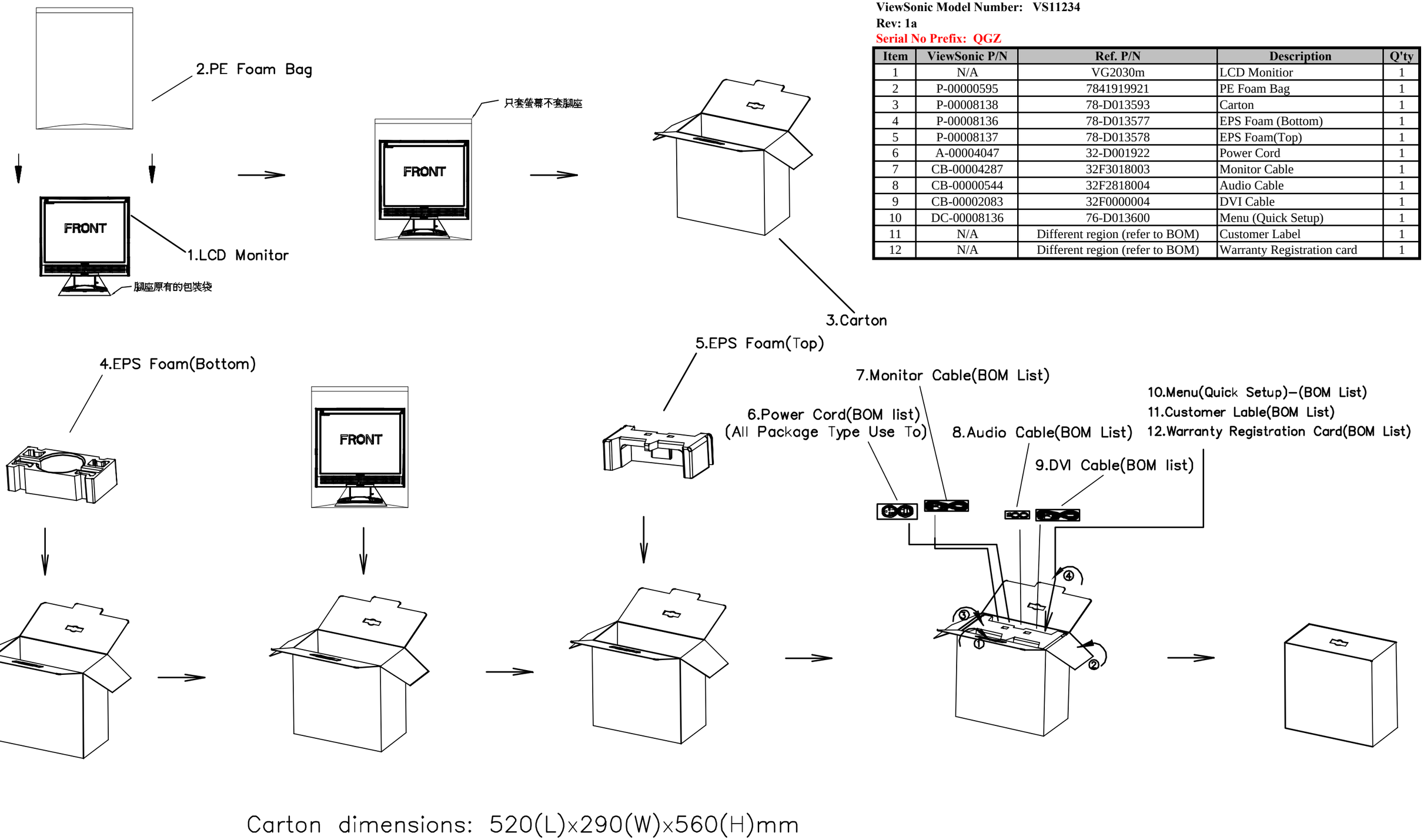
PACKING PARTS LIST (VG2030m-1)

ViewSonic Model Number: VS11234

Rev: 1a

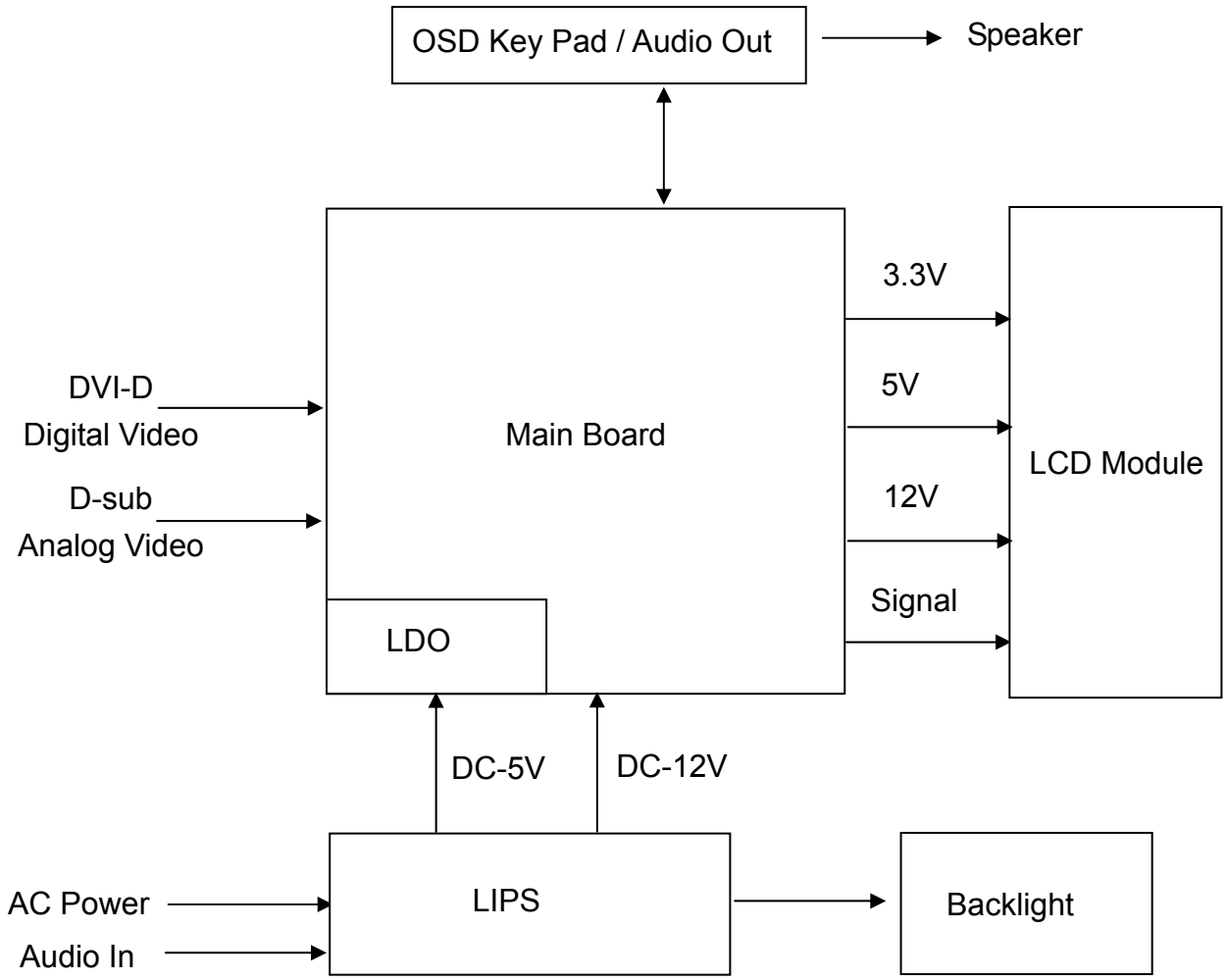
Serial No Prefix: QGZ

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	N/A	VG2030m	LCD Monitior	1
2	P-00000595	7841919921	PE Foam Bag	1
3	P-00008138	78-D013593	Carton	1
4	P-00008136	78-D013577	EPS Foam (Bottom)	1
5	P-00008137	78-D013578	EPS Foam(Top)	1
6	A-00004047	32-D001922	Power Cord	1
7	CB-00004287	32F3018003	Monitor Cable	1
8	CB-00000544	32F2818004	Audio Cable	1
9	CB-00002083	32F0000004	DVI Cable	1
10	DC-00008136	76-D013600	Menu (Quick Setup)	1
11	N/A	Different region (refer to BOM)	Customer Label	1
12	N/A	Different region (refer to BOM)	Warranty Registration card	1

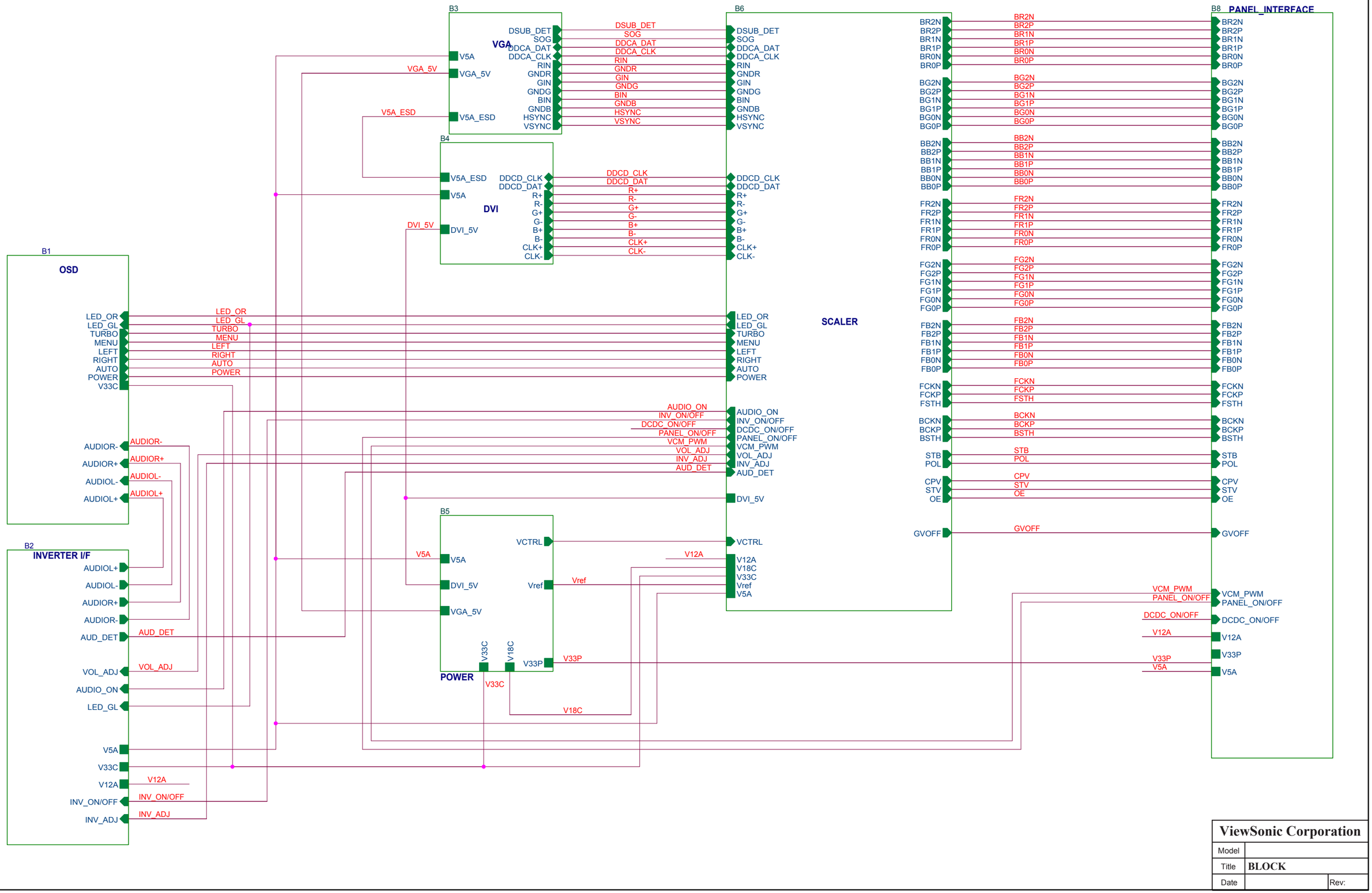


Carton dimensions: 520(L)x290(W)x560(H)mm

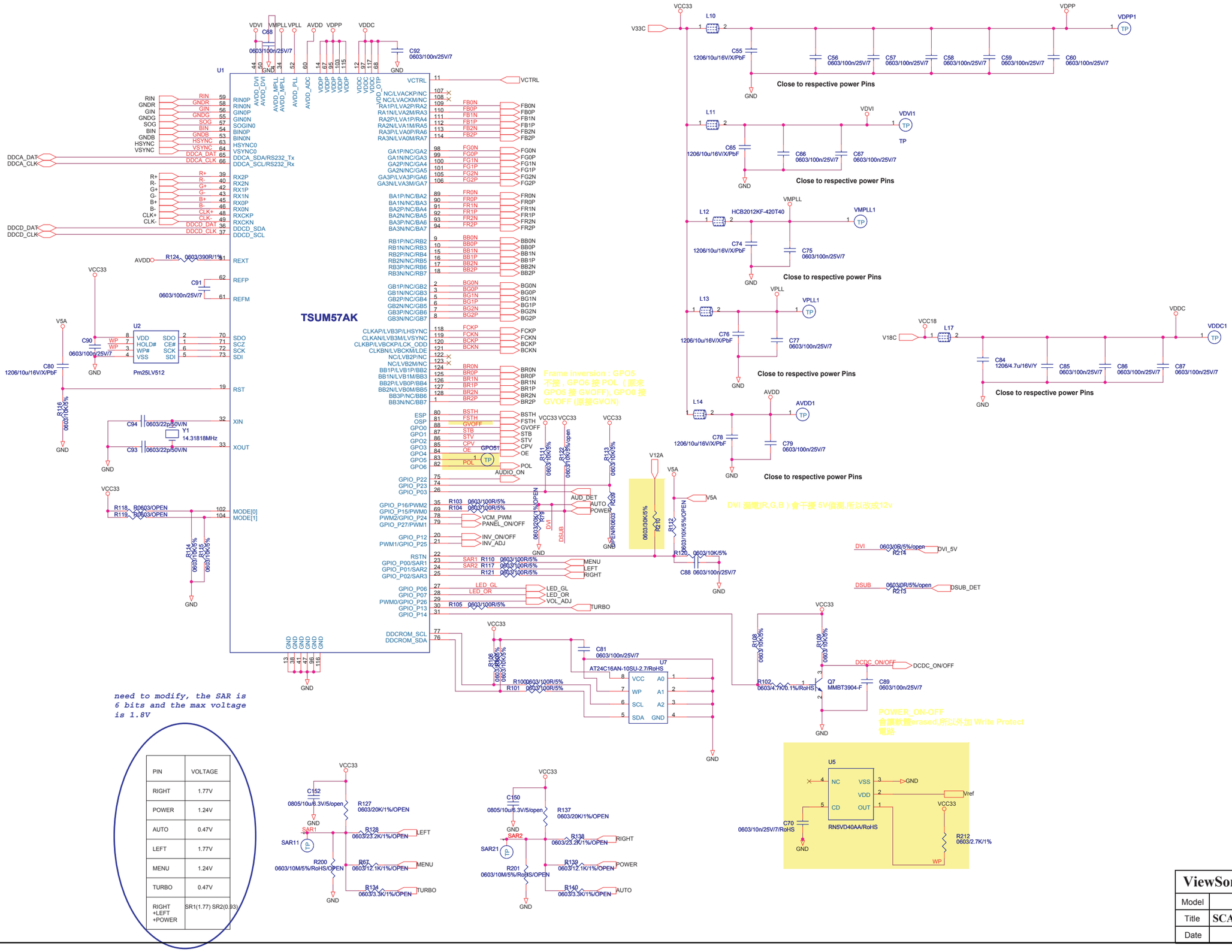
9. Block Diagram



10. Schematic Diagrams

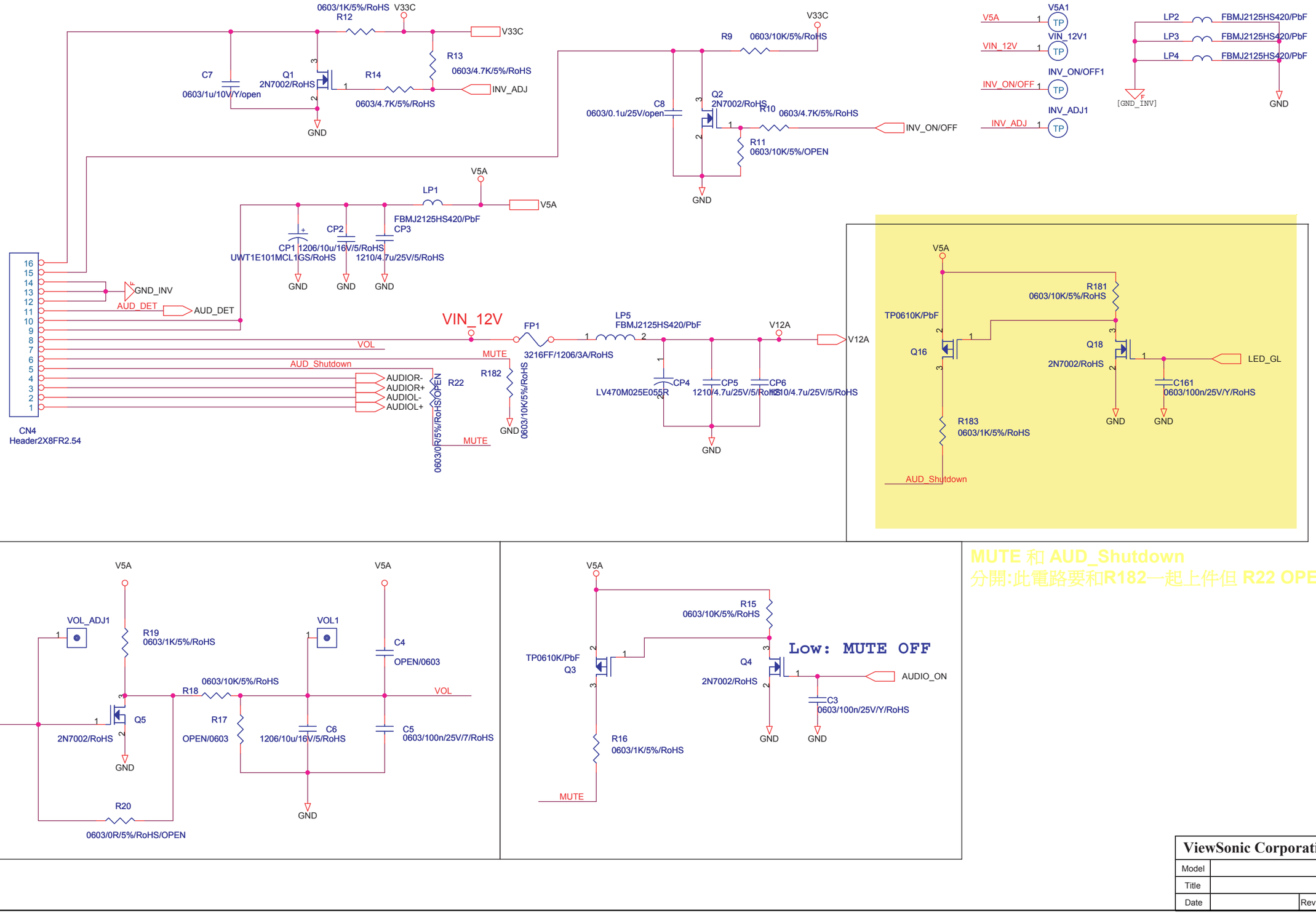


ViewSonic Corporation		
Model		
Title	BLOCK	
Date		Rev:



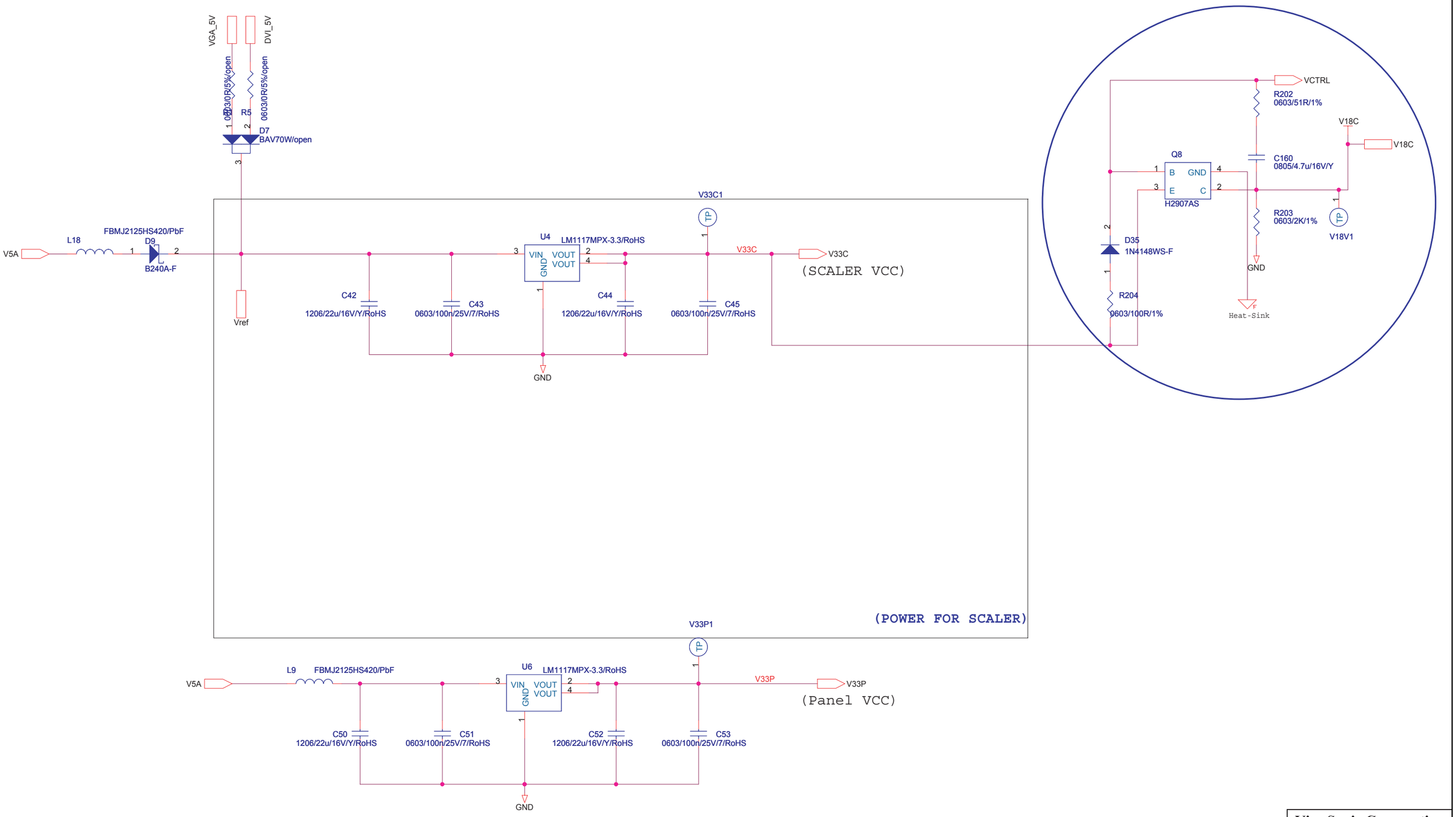
PIN	VOLTAGE
RIGHT	1.77V
POWER	1.24V
AUTO	0.47V
LEFT	1.77V
MENU	1.24V
TURBO	0.47V
RIGHT +LEFT +POWER	SR1(1.77) SR2(0.93)

ViewSonic Corporation		
Model		
Title	SCALER	
Date		Rev:



MUTE 和 AUD_Shutdown
分開:此電路要和R182一起上件但 R22 OPEN

ViewSonic Corporation		
Model		
Title		
Date		Rev:



ViewSonic Corporation		
Model		
Title		
Date		Rev:

水波紋:
靠IC

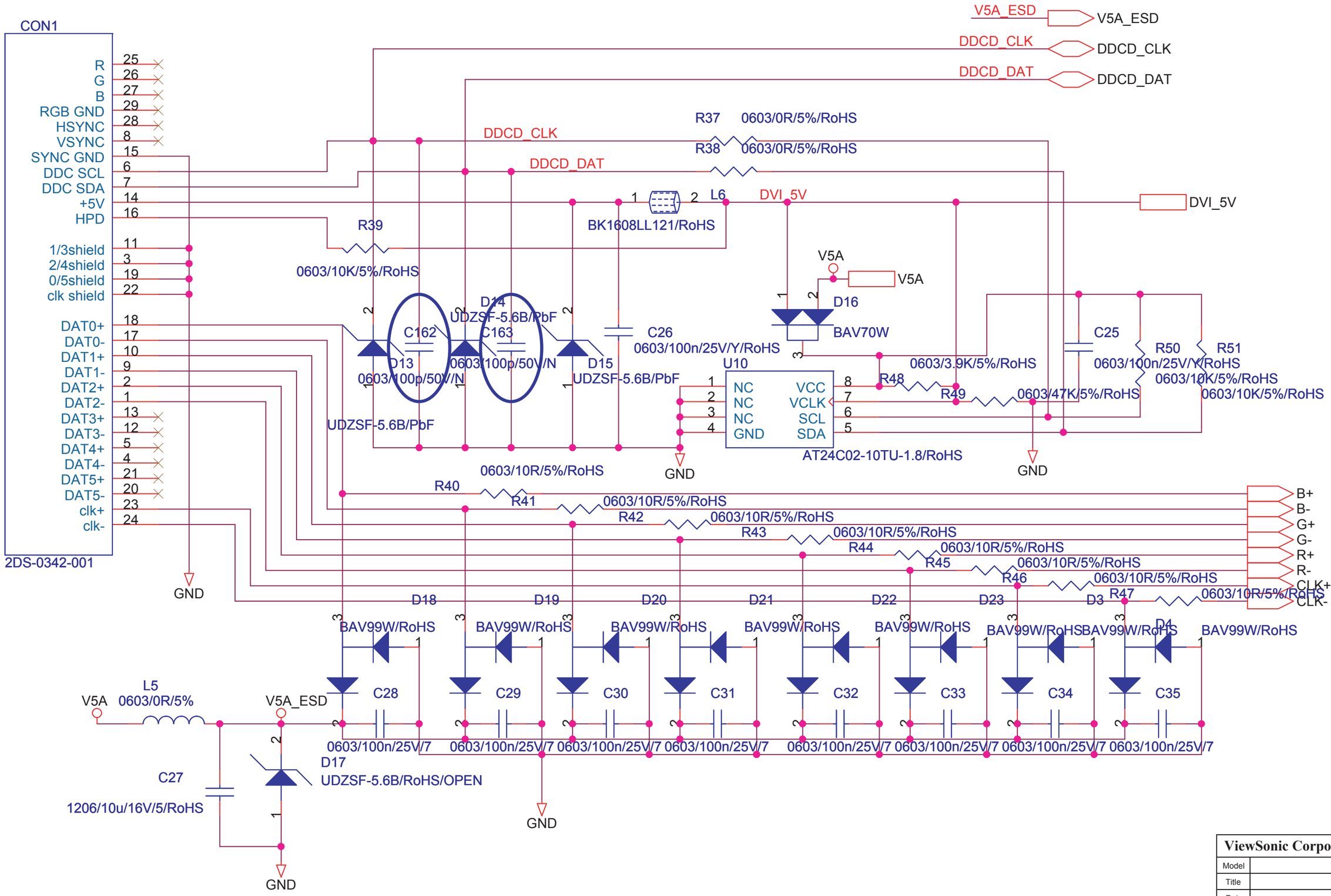
R35
DDCA_DAT
0603/0R/5%/OPEN
CN7
89263-6762
GND
D1
0603/10p/varistor/OPEN
D2
0603/10p/varistor/OPEN
GND
DDCA_CLK
R144
0603/0R/5%/OPEN
D24
BAV99W/RoHS
D25
BAV99W/RoHS
D5
BAV99W/RoHS
V5A_ESD
V5A_ESD
GND
C157
0603/100n/25V/X/RoHS
C158
0603/100n/25V/X/RoHS
C159
0603/100n/25V/X/RoHS
GND
R21 0603/56R/1% C9 0603/47n/16V/7/RoHS RIN
R34 0603/56R/1% C10 0603/47n/16V/7/RoHS GIN
R23 0603/56R/1% C11 0603/47n/16V/7/RoHS BIN
R24 0603/470R/1% C15 0603/1n/16V/7 SOG
R78 0603/75R/1%
R30 0603/75R/1%
R29 0603/75R/1%
R25 0603/100R/1% C123 0603/47n/16V/7/RoHS GNDR
R26 0603/100R/1% C124 0603/47n/16V/7/RoHS GNDG
R27 0603/100R/1% C125 0603/47n/16V/7/RoHS GNDB
HSI
L20 0603/0R/5%/RoHS
R57 0603/1K/1%/RoHS
HSYNC
D32
UDZSF-5.6B/PbF
GND
R55
0603/2.2K/5%/RoHS
C128
0603/33p/50V/N/RoHS
C126
0603/33p/50V/N/RoHS/open
GND GND GND
VSI
R66 0603/0R/5%/RoHS
R54 0603/1K/1%/RoHS
VSYNC
D33
UDZSF-5.6B/PbF
GND
R129
0603/2.2K/5%/RoHS
C100
0603/220p/50V/N
C127
0603/33p/50V/N/RoHS/open
GNDGND GND
R64 0603/100R/5%/RoHS
DDCA_CLK
R131 0603/100R/5%/RoHS
DDCA_DAT
DSUB_DET
VGA_5V
L8
BK1608LL121/PbF
R133
0603/10R/5%/RoHS
V5A
V5A
D10
0603220KV05T/RoHS
D29
0603220KV05T/RoHS
D6
0603220KV05T/RoHS
C129
0603/100n/25V/X/RoHS
D30
BZT52-C5V6S/RoHS
D31
BAV70W/RoHS
R68 0603/10K/5%/RoHS
R135 0603/10K/5%/RoHS
C23
0603/100n/25V/7/RoHS
GND
R136 0603/3.9K/5%/RoHS
U15
NC VCC
NC VCLK
NC SCL
GND SDA
AT24C02-10TU-1.8/RoHS
VGA_5V
R60
0603/47K/5%/RoHS
GND
GND

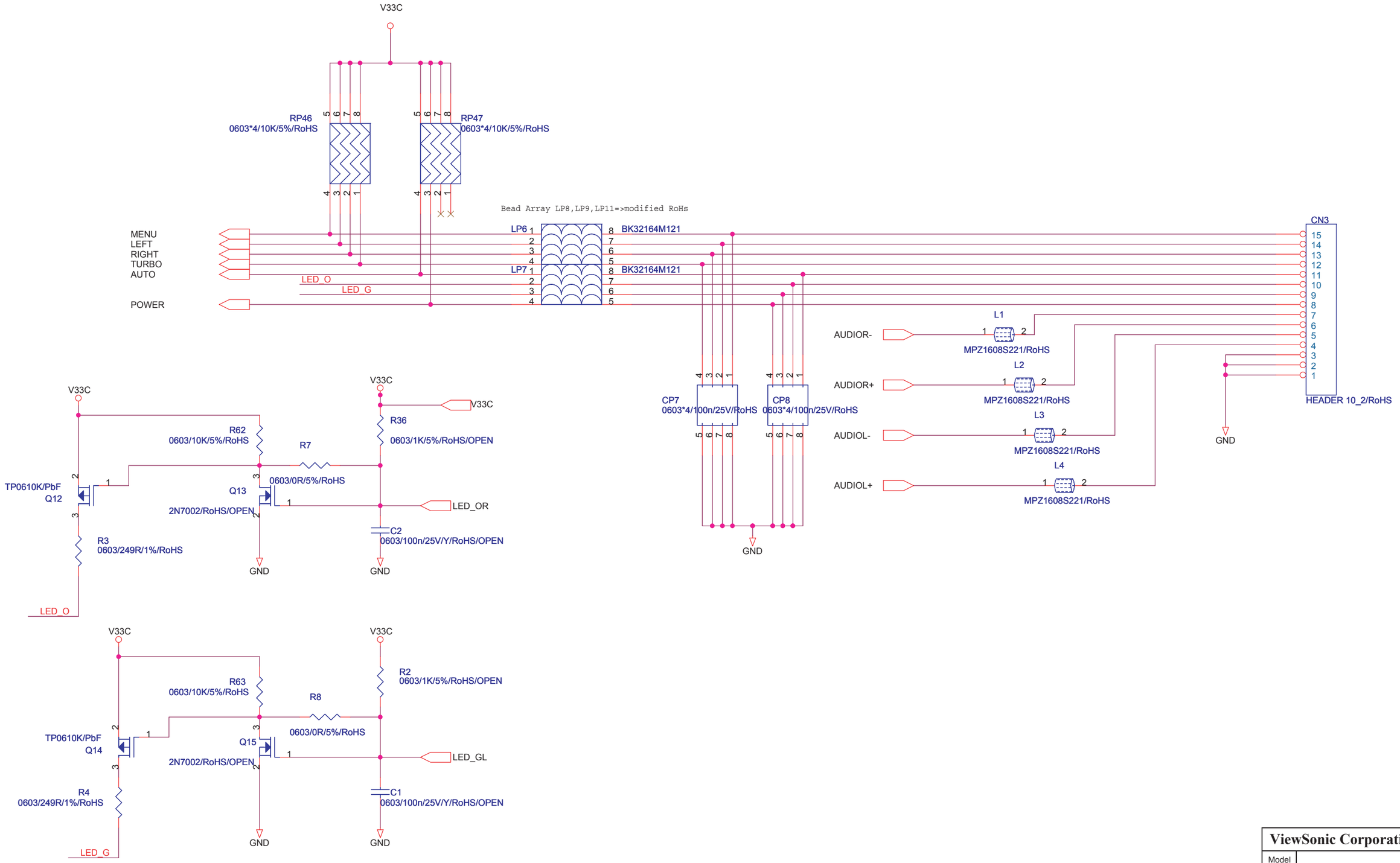
水波紋: 參考 Mstar
電路增加 C100 ,C128
,然後將R57的阻值 0.68
k改爲 1k,
R54的阻值0.1K改爲1k,將
C126 ,C127 OPEN

Phase issue: 將 L20 爲 120歐姆 的 bead
改成 0 歐姆的電阻

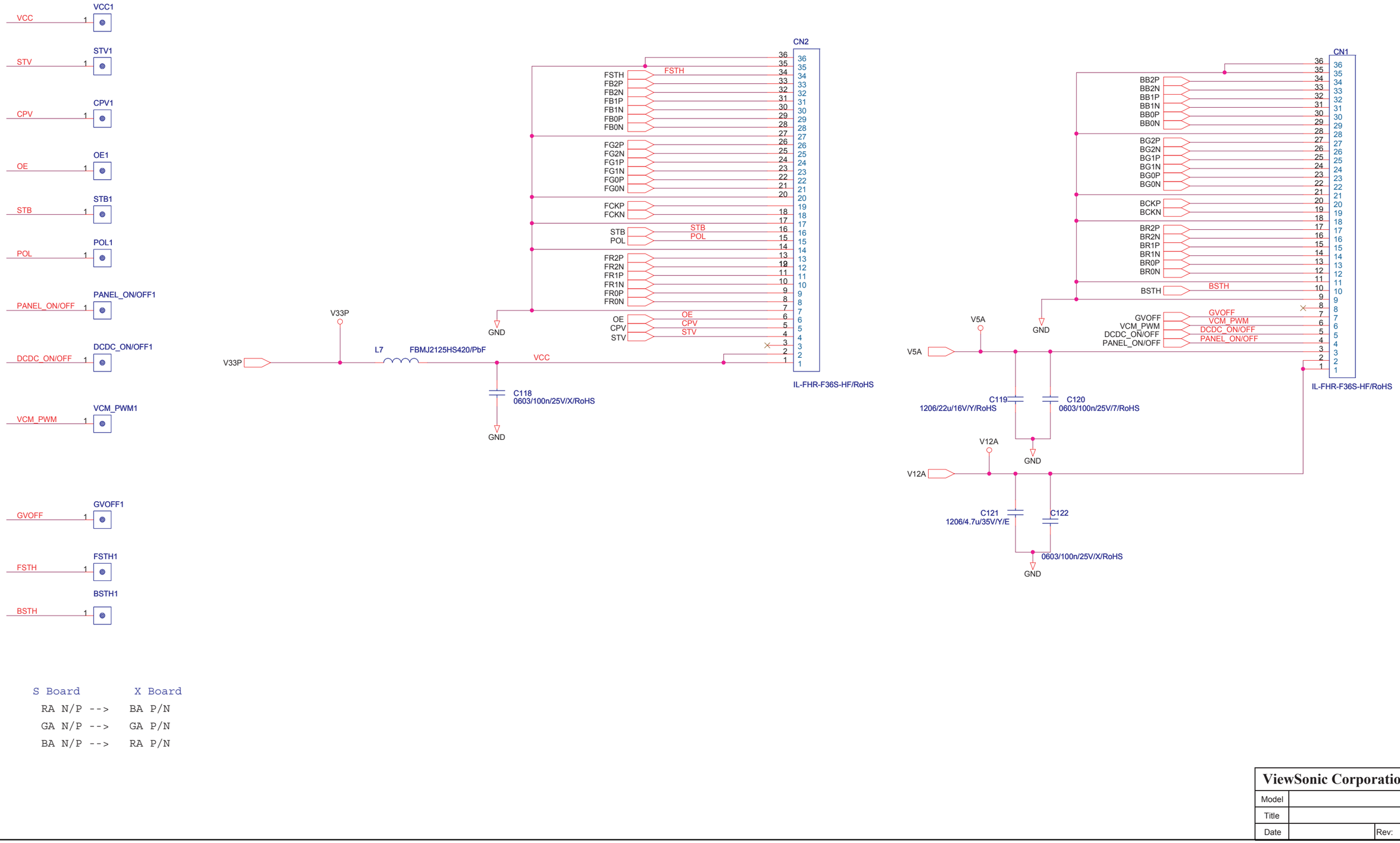
HSYNC1 TP 1 HSYNC
VSYNC1 TP 1 VSYNC

ViewSonic Corporation		
Model		
Title		
Date		Rev:


CON1
R
G
B
RGB GND
HSYNC
VSYNC
SYNC GND
DDC SCL
DDC SDA
+5V
HPD
1/3shield
2/4shield
0/5shield
clk shield
DAT0+
DAT0-
DAT1+
DAT1-
DAT2+
DAT2-
DAT3+
DAT3-
DAT4+
DAT4-
DAT5+
DAT5-
clk+
clk-
2DS-0342-001
GND
V5A_ESD
DDCD_CLK
DDCD_DAT
R37 0603/0R/5%/RoHS
R38 0603/0R/5%/RoHS
L6
BK1608LL121/RoHS
DVI_5V
R39
0603/10K/5%/RoHS
V5A
D16
BAV70W
C26
0603/100n/25V/Y/RoHS
D14
UDZSF-5.6B/PbF
C162
C163
D13
0603/100p/50V/N
D15
UDZSF-5.6B/PbF
U10
NC
NC
NC
GND
VCC
VCLK
SCL
SDA
AT24C02-10TU-1.8/RoHS
R48
0603/3.9K/5%/RoHS
R49
0603/47K/5%/RoHS
C25
0603/100n/25V/Y/RoHS
R50
0603/10K/5%/RoHS
R51
0603/10K/5%/RoHS
0603/10R/5%/RoHS
R40
R41
R42
R43
R44
R45
R46
R47
0603/10R/5%/RoHS
B+
B-
G+
G-
R+
R-
CLK+
CLK-
D18
D19
D20
D21
D22
D23
D3
D4
BAV99W/RoHS
L5
V5A 0603/0R/5%
V5A_ESD
C27
1206/10u/16V/5/RoHS
C28
C29
C30
C31
C32
C33
C34
C35
0603/100n/25V/7
D17
UDZSF-5.6B/RoHS/OPEN
ViewSonic Corporation
Model
Title
Date
Rev:



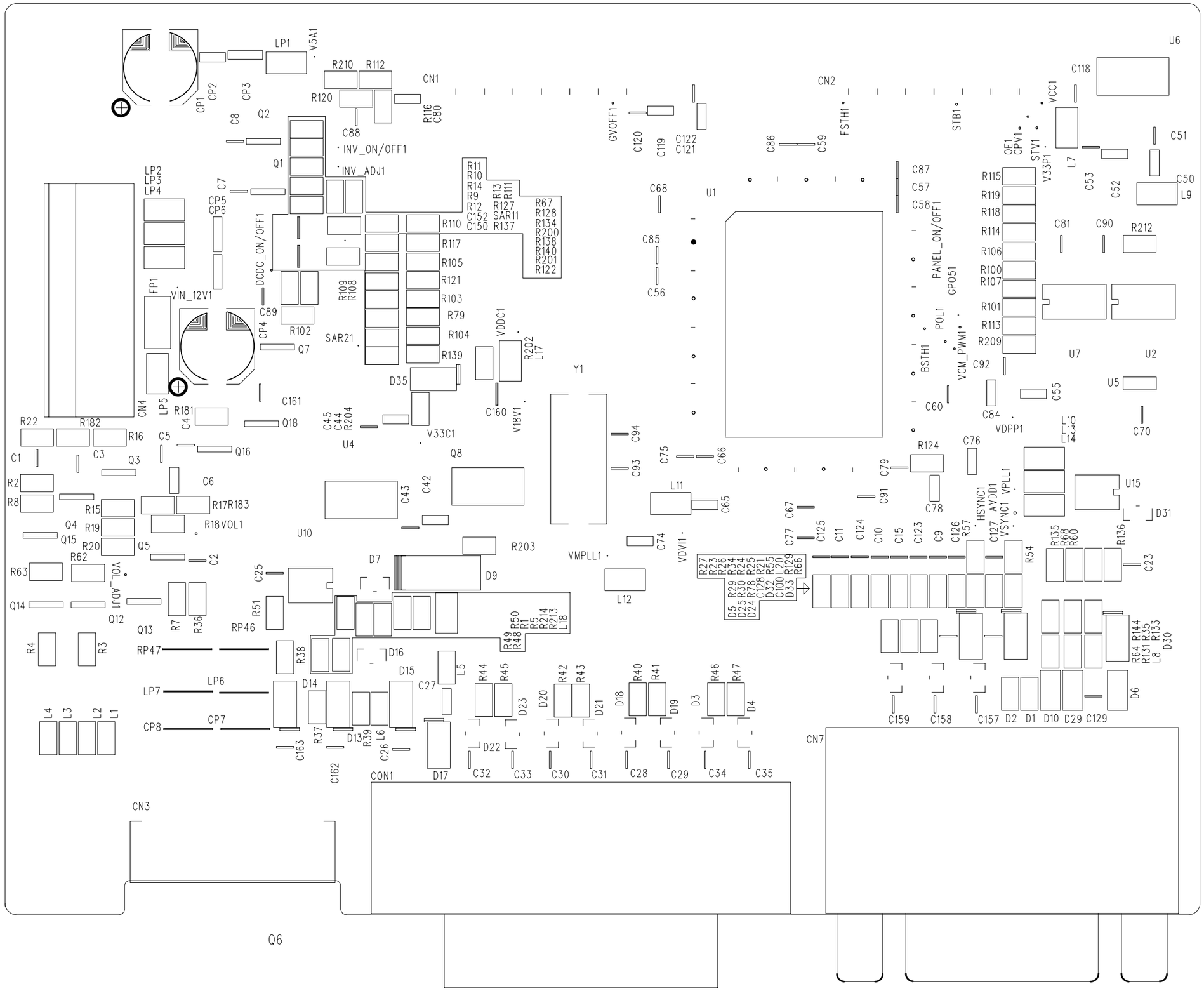
ViewSonic Corporation	
Model	
Title	OSD
Date	Rev:



S Board X Board
RA N/P --> BA P/N
GA N/P --> GA P/N
BA N/P --> RA P/N

ViewSonic Corporation		
Model		
Title		
Date		Rev:

11. PCB Layout Diagrams



* 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?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
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?

Item	*Excellent*	*Good*	*Fair*	*Bad*
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 dada:

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)