

# **Service Manual**

## **ViewSonic VX2245wm-1**

**Model No. VS11349**

**22" Color TFT LCD Display**

(VX2245wm-1\_SM Rev. 1a Oct. 2006)

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## Revision History

| Revision | SM Editing Date | ECR Number | Description of Changes | Editor      |
|----------|-----------------|------------|------------------------|-------------|
| 1a       | 10/16/2006      |            | Initial Release        | Jamie Chang |
|          |                 |            |                        |             |
|          |                 |            |                        |             |
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# 1. Precautions and Safety Notices

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## 1. Precautions and Safety Notices

### 1. Appropriate Operation

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

### 2. Caution

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

### 3. Safety Check

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

### 4. LCD Module Handling Precautions

#### 4.1 Handling Precautions

- (1) Since front polarizer is easily damaged, pay attention not to scratch it.
- (2) Be sure to turn off power supply when connecting or disconnecting input connector.
- (3) Wipe off water drops immediately. Long contact with water may cause discoloration or spots.

- (4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
- (5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.
- (6) Since CMOS LSI is used in this module, take care of static electricity and ensure human earth when handling.
- (7) Do not open or modify the Module Assembly.
- (8) Do not press the reflector sheet at the back of the module in any direction.
- (9) In the event that a Module must be put back into the packing container slot after it was taken out of the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly.  
  
Otherwise the TFT Module may be damaged.
- (10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate or tilt the Interface Connector of the TFT Module.
- (11) After installation of the TFT Module into an enclosure (LCD monitor housing, for example), do not twist or bend the TFT Module even momentarily. When designing the enclosure, it should be taken into consideration that no bending/twisting forces may be applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.
- (12) The cold cathode fluorescent lamp in the LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.
- (13) The LCD module contains a small amount of materials having no flammability grade. The LCD module should be supplied with power that complies with the requirements of Limited Power Source (IEC60950 or UL1950), or an exemption should be applied for.
- (14) The LCD module is designed so that the CCFL in it is supplied by a Limited Current Circuit (IEC60950 or UL1950). Do not connect the CCFL to a Hazardous Voltage Circuit

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

## 2. Specification

### INTRODUCTION

|                                          |                                                                                                                                                                                                                             |                              |                                           |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------|
| FEATURES                                 |                                                                                                                                                                                                                             |                              | VX2245wm                                  |
| TFTLCD PANEL<br>1st<br><br>CMO<br>A220Z1 | Size                                                                                                                                                                                                                        |                              | 22 " wide                                 |
|                                          | Luminance (Typ)                                                                                                                                                                                                             |                              | 280 cd/m <sup>2</sup>                     |
|                                          | Contrast Ratio (Typ)                                                                                                                                                                                                        |                              | 700:1                                     |
|                                          | Colors                                                                                                                                                                                                                      |                              | 16.2 M (6 bits + 2 bits FRC)              |
|                                          | Response Time                                                                                                                                                                                                               |                              | 5 ms(on/off)                              |
|                                          | Viewing Angle (H/V)                                                                                                                                                                                                         |                              | 170 ° / 160 °                             |
|                                          | Recommend resolution                                                                                                                                                                                                        |                              | 1680x1050@60Hz                            |
| Input Signal                             | Video                                                                                                                                                                                                                       | Analog (Head)                | Yes (75ohms, 0.7/1.0 Vp-p)                |
|                                          |                                                                                                                                                                                                                             | Digital (Head)               | Yes                                       |
|                                          | Audio                                                                                                                                                                                                                       | 3.5 mm Audio in (Head)       | Yes                                       |
|                                          |                                                                                                                                                                                                                             | 3.5mm 2 in 1 Audio in (Base) | Yes                                       |
| Output Signal                            | Audio                                                                                                                                                                                                                       | 3.5 Audio out (Base)         | Yes                                       |
|                                          |                                                                                                                                                                                                                             | Headphone out (Base)         | Yes                                       |
| Sync Compatibility                       | Separate Sync                                                                                                                                                                                                               |                              | Yes                                       |
|                                          | Composite Sync                                                                                                                                                                                                              |                              | Yes                                       |
|                                          | Sync on Green                                                                                                                                                                                                               |                              | Yes                                       |
| Compatibility                            | PC                                                                                                                                                                                                                          |                              | Yes                                       |
|                                          | Power Mac                                                                                                                                                                                                                   |                              | Yes                                       |
|                                          | TV Box (NextVision 6)                                                                                                                                                                                                       |                              | Yes                                       |
| Power Voltage                            | AC 100-240V, 50/60Hz                                                                                                                                                                                                        |                              | Yes                                       |
| Power Consumption                        | LCD                                                                                                                                                                                                                         | On Mode(Typ)                 | < 38 W                                    |
|                                          |                                                                                                                                                                                                                             | Off Mode (Max)               | ≤ 1 W                                     |
|                                          | Multimedia base                                                                                                                                                                                                             | On Mode(Typ)                 | < 24 W                                    |
|                                          |                                                                                                                                                                                                                             | On Mode (Max)                | ≤ 30 W                                    |
| USB                                      | Upstream port (B type) X 1                                                                                                                                                                                                  |                              | Yes                                       |
|                                          | Downstream port (A type) X 4                                                                                                                                                                                                |                              | Yes                                       |
| Card reader                              | 8 in 1 Function                                                                                                                                                                                                             |                              | SD/MMC/MS/MS PRO/CF I & II /MicroDrive/SM |
| Speaker                                  | 2.1 CH - THD 10% (Max)<br>(Sat.: 2.5w x2 ; subwoofer:3w x1)                                                                                                                                                                 |                              | Yes                                       |
| Ergonomics                               | Tilt ( 20 ° - -5 ° )                                                                                                                                                                                                        |                              | Yes                                       |
|                                          | Swivel                                                                                                                                                                                                                      |                              | No                                        |
|                                          | Pivot                                                                                                                                                                                                                       |                              | No                                        |
|                                          | Height Adjust                                                                                                                                                                                                               |                              | No                                        |
| OSD Control                              | [ 1 ] [ 2 ]  [▼] [▲]                                                                                                                     |                              | Yes                                       |
| Dimension                                | Physical (W x H x D)                                                                                                                                                                                                        |                              | 524 x 493 x 212 mm                        |
|                                          | Package (W x H x D)                                                                                                                                                                                                         |                              | 580 x 610 x 260 mm                        |
| Weight                                   | Physical (Net Weight)                                                                                                                                                                                                       |                              | 6.2Kg / 13.7lbs                           |
|                                          | Package (Gross Weight)                                                                                                                                                                                                      |                              | 8.5Kg / 18.7 lbs                          |
| Operating Condition                      | Temperature (°F/°C)                                                                                                                                                                                                         |                              | 41°F-95°F/+5°C-+35°C                      |
|                                          | Humidity (%)                                                                                                                                                                                                                |                              | 20 % - 80 %                               |
| Storage Condition                        | Temperature (°F/°C)                                                                                                                                                                                                         |                              | -4°F-131°F/-20°C-55°C                     |
|                                          | Humidity (%)                                                                                                                                                                                                                |                              | 20 % - 85 %                               |
| Regulation                               | Global: CB, MPR II, WEEE, ROHS , ISO13406-2 , Energy Star<br>VSA:UL, cUL, FCC-B, TUV-S, NOM,<br>VSE:TUV/ERGO(covers ISO13406-2&MPR II),CE GOST-R+Hygienic ,SASO ,<br>ENERGY<br>VSI: BSMI, CCC, PSB, C-TICK, MIC<br>VSCN:CCC |                              |                                           |

## ViewDock – Multimedia base Spec.

|                                     |                                  |                                                                                                                                                                                                                                                            |
|-------------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>USB Standards</b>                | <b>Device protocol</b>           | USB 2.0/1.1<br>OHCI (Open Host Controller Interface)<br>EHCI (Enhanced Host Controller Interface)                                                                                                                                                          |
| <b>Compatible Operating Systems</b> |                                  | USB 2.0 Speed<br>USB 1.x Speed<br>Mac OS X with USB 2.0 Support<br>Microsoft Windows XP/Me/2000/98SE with USB 2.0 Support<br>Mac OS 8.6 or above with USB 1.x Support and USB Card Support 1.4.1<br>Microsoft Windows XP/Me/2000/98SE with USB 1.x Support |
| <b>USB Hub</b>                      | <b>Upstream</b>                  | 1 Upstream USB Type B Receptacle                                                                                                                                                                                                                           |
|                                     | <b>Downstream</b>                | 4 Downstream USB Type A Receptacles                                                                                                                                                                                                                        |
| <b>USB Supplied Current</b>         |                                  | Self-Powered Mode: 500mA /Port<br>Idle Mode : 5mA /Port<br>Operating Mode: 100mA/Port                                                                                                                                                                      |
| <b>Card Reader<br/>4 slots</b>      |                                  | Secure Digital (SD)<br>Multi Media Card (MMC)<br>Compact Flash (CF) Type I<br>Compact Flash (CF) Type II<br>Micro Drive<br>Smart Media (SM)<br>Memory Stick (MS)<br>Memory Stick Pro (MS Pro)                                                              |
|                                     | <b>Upper Slot<br/>Lower Slot</b> | SMC and SD/MMC<br>CF Type I/II and MS/MS Dual/MS Pro                                                                                                                                                                                                       |
| <b>Audio / Speaker</b>              | <b>Subwoofer</b>                 | 3.0W (typ) ; 5.0W (Max)                                                                                                                                                                                                                                    |
|                                     | <b>Nominal size</b>              | Φ46mm                                                                                                                                                                                                                                                      |
|                                     | <b>S/N</b>                       | >85dB                                                                                                                                                                                                                                                      |
|                                     | <b>THD</b>                       | < 10% (Vol. Max)                                                                                                                                                                                                                                           |
| <b>MIC</b>                          | <b>S/N</b>                       | 60dB (Built-in)                                                                                                                                                                                                                                            |
|                                     | <b>Sensitivity:</b>              | -38dB +- 3dB                                                                                                                                                                                                                                               |
| <b>VR</b>                           | <b>Volume control</b>            | Rotation stopper strength: 1.0Kgf.cm<br>Total rotational angle: 220+ 5°                                                                                                                                                                                    |
| <b>Audio I/O</b>                    | <b>Input</b>                     | 2-in-1 Audio-in x 1 (Audio-in / MIC-in)                                                                                                                                                                                                                    |
|                                     | <b>Output</b>                    | Audio-out x1 , Headphone out x1                                                                                                                                                                                                                            |
| <b>iPOD connector</b>               |                                  | Compatible with iPOD video/iPOD photo/iPOD nano/iPOD Mini/iPOD U2/iPOD                                                                                                                                                                                     |
| <b>Power adapter</b>                | <b>External</b>                  | Input Voltage Range: 100~240V<br>Input Frequency: 50/60Hz<br>Output Voltage: 12V<br>Full load: 2.0A<br>Peak load: 2.5A                                                                                                                                     |
| <b>Size</b>                         |                                  | 303mm (W) x 212mm (D)                                                                                                                                                                                                                                      |
| <b>Connectivity</b>                 |                                  | Up to 127 Devices by Cascading Multiple Hubs                                                                                                                                                                                                               |
| <b>Diagnostic LEDs</b>              | <b>Power on</b>                  | Yellow-Green                                                                                                                                                                                                                                               |
|                                     | <b>iPod connecting</b>           | Amber                                                                                                                                                                                                                                                      |
|                                     | <b>iPod connecting+Power on</b>  | Yellow-green+Amber                                                                                                                                                                                                                                         |
| <b>Power consumption</b>            | <b>Typical</b>                   | 24W                                                                                                                                                                                                                                                        |
|                                     | <b>Max.</b>                      | 30W                                                                                                                                                                                                                                                        |
| <b>Storage Temperature</b>          |                                  | -4°F to 140°F (-20°C to 60°C)                                                                                                                                                                                                                              |
| <b>Storage Humidity</b>             |                                  | 10% to 90% (Non-Condensing)                                                                                                                                                                                                                                |
| <b>Operating Temperature</b>        |                                  | 32°F to 104°F (0°C to 40°C)                                                                                                                                                                                                                                |
| <b>Operating Humidity</b>           |                                  | 20% to 90% (Non-Condensing)                                                                                                                                                                                                                                |
| <b>Certifications</b>               |                                  | Global: CB, WEEE, ROHS<br>VSA:UL, cUL, FCC-B, TUV-S, NOM<br>VSE:CE, GOST-R+Hygienic, SASO<br>VSI:BSMI, CCC, PSB, C-TICK, MIC<br>VSCN:CCC                                                                                                                   |
| <b>Accessories</b>                  |                                  | USB A-B Cable ; 2-in-1 Cable ; Power adaptor ; iPod adapter set                                                                                                                                                                                            |



|                        |  |                                                                                                                              |
|------------------------|--|------------------------------------------------------------------------------------------------------------------------------|
|                        |  | (default x 1; 4 in set)                                                                                                      |
| <b>Package content</b> |  | Viewdock/Quick start guide/CD(for card reader windows 98 driver)/2-in-1 Audio cable/USB cable/Power adapter/iPod adapter set |

## Product definition and specification

| Region                                                                     | VSA                                                                                                                                                                          | VSAP                | VSE        | VSCN       |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|------------|
|                                                                            | (M)                                                                                                                                                                          | (A)/(P)/(J)/(S)/(K) | (E)/(U)    | (G)        |
| Product Name                                                               | VX2245wm                                                                                                                                                                     |                     |            |            |
| Model Number                                                               | VS11349                                                                                                                                                                      |                     |            |            |
| OSD Languages                                                              | English, French, German, Italian, Spanish, , Finnish, Japanese, Traditional Chinese, Simplified Chinese                                                                      |                     |            |            |
| TFT LCD Panel and Model #                                                  | CMO A220Z1                                                                                                                                                                   |                     |            |            |
| Scalar                                                                     | Realtek, Model # :RTD2553V                                                                                                                                                   |                     |            |            |
| Input Signal                                                               | Dual input (1A + 1D)                                                                                                                                                         |                     |            |            |
| Sync Compatibility                                                         | Separate / Composite / SOG                                                                                                                                                   |                     |            |            |
| Speaker (2.1ch)                                                            | Sat. :2.5W (on LCD Head)<br>Subwoofer : 3W (on Base stand)                                                                                                                   |                     |            |            |
| Power Consumption                                                          | LCD: Built-in/ 38 W (typ) ; Base: 24W (typ)                                                                                                                                  |                     |            |            |
| Power Cable                                                                | Refer to Appendix G                                                                                                                                                          |                     |            |            |
| Power Adaptor for Multimedia base                                          | Refer to Appendix H                                                                                                                                                          |                     |            |            |
| Analog Cable (1.8 m, color : black), with PC 2001 and Hot Plug Detect &DDC | <b>YES</b>                                                                                                                                                                   |                     |            |            |
| DVI Cable(1.8m, color: black) with PC 2001                                 | <b>YES</b>                                                                                                                                                                   |                     |            |            |
| Audio cable (1.8m) Lime green                                              | YES                                                                                                                                                                          |                     |            |            |
| USB Cable (A-B type)                                                       | YES                                                                                                                                                                          |                     |            |            |
| 2- in-1 Audio cable                                                        | YES                                                                                                                                                                          |                     |            |            |
| iPod adapter set                                                           | YES                                                                                                                                                                          |                     |            |            |
| ViewSonic CD Wizard                                                        | Arabic, English, Finnish, Spanish, German, Italian, Japanese, Swedish, Polish, Korean Portuguese, Russian, French, Simplified Chinese, Traditional Chinese, Czech, Hungarian |                     |            |            |
| ViewSonic Quick Start Guide                                                |                                                                                                                                                                              |                     |            |            |
| ViewSonic Card-reader driver CD                                            | <b>YES</b>                                                                                                                                                                   |                     |            |            |
| Screen Protector Mylar                                                     | YES                                                                                                                                                                          |                     |            |            |
| Portrait CD(Version xxx)                                                   | <b>NO</b>                                                                                                                                                                    | <b>NO</b>           | <b>NO</b>  | <b>NO</b>  |
| Extrme Label (5ms)                                                         | <b>YES</b>                                                                                                                                                                   | <b>YES</b>          | <b>YES</b> | <b>YES</b> |
| Pop Sticker (Front bezel / Base)                                           | <b>YES</b>                                                                                                                                                                   | <b>YES</b>          | <b>YES</b> | <b>YES</b> |
| QSG insert                                                                 | <b>YES</b>                                                                                                                                                                   | <b>YES</b>          | <b>YES</b> | <b>YES</b> |
| Service Insert                                                             | <b>YES</b>                                                                                                                                                                   | <b>NO</b>           | <b>NO</b>  | <b>NO</b>  |
| Warranty Sticker                                                           | NO                                                                                                                                                                           | NO                  | NO         | YES        |
| Warranty Card                                                              | NO                                                                                                                                                                           | NO                  | NO         | YES        |
| Carton Sticker                                                             | NO                                                                                                                                                                           | NO                  | NO         | YES        |
| PE bag of Carton                                                           | NO                                                                                                                                                                           | NO                  | NO         | YES        |

## 4-1 GENERAL specification

|                                  |                                                           |
|----------------------------------|-----------------------------------------------------------|
| Test Resolution & Frequency      | 1680x1050 @ 60Hz                                          |
| Test Image Size                  | Full Size                                                 |
| Contrast and Brightness Controls | Factory Default:<br><br>Contrast = 70%, Brightness = 100% |

## 4-2 VIDEO INTERFACE

|                                     |                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analog Input Connector              | DB-15 (Analog), refer the appendix A                                                                                                                                                                                                                                                                                    |
| Digital Input Connector             | DVI-D (Digital), refer the appendix B                                                                                                                                                                                                                                                                                   |
| 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 1/2B                                                                                                                                                                                                                                                                                                      |
| Video Signals                       | 1. Video RGB (Analog)<br>Separate, Composite, and Sync on Green<br>2. TMDS (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, Composite Sync, SOG                                                                                                                                                                                                                                                                                      |
| 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 864, 1152 x 870, 1280 x 720, 1280 x 960, 1280 x 1024, 1400 x 1050, 1440 x 900, 1600 x 1200, 1680 x 1050<br><br>* The image vertical size might not be full screen.<br>But the image vertical position should be at the center. |
| Exclusions                          | Not compatible with interlaced video                                                                                                                                                                                                                                                                                    |

## POWER SUPPLY (LCD Head)

|                                     |                                                                                                                                               |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Internal Power Supply               | 27-D009542                                                                                                                                    |
| Input Voltage Range                 | 90 to 264 VAC                                                                                                                                 |
| Input Frequency Range               | 47 to 63 Hertz                                                                                                                                |
| Short Circuit Protection            | Output can be shorted without damage                                                                                                          |
| Over Current Protection             | 5.0 A typical at 12.0 VDC                                                                                                                     |
| Leakage Current                     | 3.5mA (Max) at 254VAC / 60Hz                                                                                                                  |
| Efficiency (at 115VAC Full Load)    | Typical: 80%<br>Minimum: 75%                                                                                                                  |
| Fuse                                | Internal and not user replaceable                                                                                                             |
| Power Output                        | 50 Watts (typ)                                                                                                                                |
| Ripple and Noise                    | Ripple: <3%<br>Noise: <1%                                                                                                                     |
| Max Input AC Current                | 1.5 Arms @ 90VAC, 0.75 Arms @180VAC                                                                                                           |
| Inrush Current (Cold Start)         | 50 A (max) @ 115VAC<br>90 A (max) @ 230VAC                                                                                                    |
| 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              | Mode                                                                                                                              | LED   | Power Consumption      |
|                                | On                                                                                                                                | Blue  | 38W (typ)<br>43W (max) |
|                                | Active off                                                                                                                        | Amber | <1W                    |
|                                | Off                                                                                                                               | Off   | <1W                    |
| Recovery Time                  | On Mode = N/A, Active Off < 3 sec                                                                                                 |       |                        |

#### 4-4 ELECTRICAL REQUIREMENT

##### Horizontal / Vertical Frequency

|                       |                               |
|-----------------------|-------------------------------|
| Horizontal Frequency  | 24 – 82 kHz                   |
| Vertical Refresh Rate | 50 – 85* Hz                   |
| Maximum Pixel Clock   | 150 MHz                       |
| Sync Polarity         | Independent of sync polarity. |

##### Timing Table

| Item | Timing                      | Analog    |           |     | Digital - TMDS | Remark                                                                                                                                                         |
|------|-----------------------------|-----------|-----------|-----|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                             | Separated | Composite | SOG |                |                                                                                                                                                                |
| 1    | 640 x 350 @ 70 Hz, 31.5 KHz | ✓         | ✓         | ✓   | ✓              | For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary=720x400).   |
| 2    | 640 x 350 @ 85 Hz, 37.9 KHz | ✓         | ✓         | ✓   | ✓              | For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary=720x400).   |
| 3    | 640 x 400 @ 60 Hz, 31.5 KHz | ✓         | ✓         | ✓   | ✓              | For Analog sync, switch 640x400@60Hz and 640x480@60Hz by [1]+[2] short cut key (primary = 640x480@60Hz)                                                        |
| 4    | 640 x 400 @ 70 Hz, 31.5 KHz | ✓         | ✓         | ✓   | ✓              | For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary=720x400).   |
| 5    | 640 x 400 @ 85 Hz, 37.9 KHz | ✓         | ✓         | ✓   | ✓              | For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary=720x400).   |
| 6    | 640 x 480 @ 50 Hz, 24.7 KHz | ✓         | ✓         | ✓   | ✓              |                                                                                                                                                                |
| 7    | 640 x 480 @ 60 Hz, 31.5 KHz | ✓         | ✓         | ✓   | ✓              | For Analog sync, switch 640x400@60Hz and 640x480@60Hz by [1]+[2] short cut key (primary = 640x480@60Hz)                                                        |
| 8    | 640 x 480 @ 67 Hz, 35 KHz   | ✓         | ✓         | ✓   | ✓              |                                                                                                                                                                |
| 9    | 640 x 480 @ 72 Hz, 37.9 KHz | ✓         | ✓         | ✓   | ✓              |                                                                                                                                                                |
| 10   | 640 x 480 @ 75 Hz, 37.5 KHz | ✓         | ✓         | ✓   | ✓              |                                                                                                                                                                |
| 11   | 640 x 480 @ 85 Hz, 43.3 KHz | ✓         | ✓         | ✓   | ✓              |                                                                                                                                                                |
| 12   | 720 x 400 @ 70 Hz, 31.5 KHz | ✓         | ✓         | ✓   | ✓              | For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary=720x400).   |
| 13   | 720 x 400 @ 85 Hz, 37.9 KHz | ✓         | ✓         | ✓   | ✓              | For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary = 720x400). |
| 14   | 720 x 480 @ 60 Hz, 31.5 KHz | ✓         | ✓         | ✓   | ✓              | For Analog sync, the image vertical size image will                                                                                                            |

|    |                               |   |   |   |   |                                                                                                                                    |
|----|-------------------------------|---|---|---|---|------------------------------------------------------------------------------------------------------------------------------------|
|    |                               |   |   |   |   | be not full screen (Still at the center),and the information OSD shows 640x480                                                     |
| 15 | 720 x 576 @ 50 Hz, 31.3 KHz   | ✓ | ✓ | ✓ | ✓ | For Analog sync, the image vertical size image will be not full screen (Still at the center),and the information OSD shows 800x600 |
| 16 | 800 x 600 @ 56 Hz, 35.1 KHz   | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 17 | 800 x 600 @ 60 Hz, 37.9 KHz   | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 18 | 800 x 600 @ 72 Hz, 48.1 KHz   | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 19 | 800 x 600 @ 75 Hz, 46.9 KHz   | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 20 | 800 x 600 @ 85 Hz, 53.7 KHz   | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 21 | 832 x 624 @ 75 Hz, 49.7 KHz   | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 22 | 1024 x 768 @ 50 Hz, 39.6 KHz  | ✓ | ✓ | ✓ | ✓ | For Analog sync, Switch 1024x768@50Hz and 1280x768@50Hz by [1]+[2] short cut key (primary = 1024x768@50Hz)                         |
| 23 | 1024 x 768 @ 60 Hz, 48.4 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 24 | 1024 x 768 @ 70 Hz, 56.5 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 25 | 1024 x 768 @ 75 Hz, 60 KHz    | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 26 | 1024 x 768 @ 75 Hz, 60.2 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 27 | 1024 x 768 @ 85 Hz, 68.7 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 28 | 1152 x 864 @ 75 Hz, 67.5 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 29 | 1152 x 870 @ 75 Hz, 68.7 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 30 | 1280 x 768 @ 50 Hz, 39.6 KHz  | ✓ | ✓ | ✓ | ✓ | For Analog sync, Switch 1024x768@50Hz and 1280x768@50Hz by [1]+[2] short cut key (primary = 1024x768@50Hz)                         |
| 31 | 1280 x 768 @ 60 Hz, 47.4 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 32 | 1280 x 768 @ 60 Hz, 47.8 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 33 | 1280 x 768 @ 75 Hz, 60.3 KHz  | ✓ | ✓ | ✓ | ✓ | For Analog sync, Switch 1024x768@75Hz and 1280x768@75Hz by [1]+[2] short cut key (primary = 1024x768@75Hz)                         |
| 34 | 1280 x 768 @ 85 Hz, 68.6 KHz  | ✓ | ✓ | ✓ | ✓ | For Analog sync, Switch 1024x768@85Hz and 1280x768@85Hz by [1]+[2] short cut key (primary = 1024x768@85Hz)                         |
| 35 | 1280 x 960 @ 50 Hz, 49.4 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 36 | 1280 x 960 @ 60 Hz, 59.7 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 37 | 1280 x 960 @ 75 Hz, 75.2 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 38 | 1280 x 1024 @ 50 Hz, 52.7 KHz | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 39 | 1280 x 1024 @ 60 Hz, 64 KHz   | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 40 | 1280 x 1024 @ 70 Hz, 74.6 KHz | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 41 | 1280 x 1024 @ 72 Hz, 76.8 KHz | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 42 | 1280 x 1024 @ 75 Hz, 80 KHz   | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 43 | 1360 x 768 @ 60 Hz, 47.7 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 44 | 1400 x 1050 @ 50 Hz, 54.1 KHz | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 45 | 1400 x 1050 @ 60 Hz, 64.7 KHz | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 46 | 1400 x 1050 @ 60 Hz, 65.3 KHz | ✓ | ✓ | ✓ | ✓ | For analog sync,, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primary = 1680x1050@60Hz)                     |
| 47 | 1400 x 1050 @ 75 Hz, 82.3 KHz | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 48 | 1440 x 900 @ 60 Hz, 55.5 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 49 | 1440 x 900 @ 60 Hz, 59.9 KHz  | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 50 | 1440 x 900 @ 75 Hz, 75 KHz    | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 51 | 1600 x 1200 @ 60 Hz, 75 KHz   | ✓ | ✓ | ✓ | ✓ |                                                                                                                                    |
| 52 | 1680 x 1050 @ 60 Hz, 65.3 KHz | ✓ | ✓ | ✓ | ✓ | For analog sync,, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primary = 1680x1050@60Hz)                     |

\*1. Tolerance  $\geq \pm 2\text{KHz}$ . (if the range dose not cover other timing mode)

\*2. Any timing not in the list, it should display as normal or show on "OUT OF RANGE" OSD message with blanking.

\*3. The image quality of 85Hz mode might be worse than 75Hz.

## Primary Presets

1680x1050 @ 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 : 5 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

## 4-5 FRONT PANEL CONTROLS AND INDICATORS

### Front Panel Hardware Controls

|                                                |                                                                                                                                                                                                                           |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Switch (Front Head)                      | Power Control, soft Power Switch.                                                                                                                                                                                         |
| Power LED (Front Head)                         | Blue – ON<br>Orange – Active Off<br>Dark = Soft Power Switch OFF                                                                                                                                                          |
| Front Panel Controls (Head)<br>[1][2][⏻][▼][▲] | [ 1 ] Button 1<br>[ 2 ] Button 2<br>[⏻] Power<br>[▼] Down arrow button<br>[▲] UP ARROW BUTTON<br><br><b>Note: Power Button, Button 1 and Button 2 must be one-shot logic operation. (i.e. there should be no cycling)</b> |
| 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 toggle (Analog or Digital)                                                           |
| [▼]                                                                   | To immediately activate Brightness/Contrast menu.                                          |
| [▼] + [▲]                                                             | Recall both of Contrast and Brightness to default                                          |
| [1] + [2]                                                             | Toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode                         |
| [1] + [▼] + [▲]<br>(Keep pushing 3 sec)                               | White Balance. (Not shown on user's guide)                                                 |
| [1] + [▼]                                                             | Power Lock                                                                                 |
| [1] + [▲]                                                             | OSD Lock                                                                                   |
| [▲]                                                                   | Essential mode switch<br>Standard ->Text -> Cinema -> Game -> Portrait -> Scenery -> Vivid |
| [2] + [▲]                                                             | Skin tone switch<br>Nature -> Reddish -> yellowish                                         |
| [▼] + [▲] + [⏻]                                                       | Factory Mode                                                                               |
| Remark : All the short cuts function are only available while OSD off |                                                                                            |

### Main Menu Controls

|                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Auto Image Adjust* <sup>1</sup>                                                                                                                                                                                                        |
| Contrast/Brightness* <sup>2*4</sup>                                                                                                                                                                                                    |
| Input Select                                                                                                                                                                                                                           |
| Analog, Digital                                                                                                                                                                                                                        |
| Audio Adjust                                                                                                                                                                                                                           |
| <b>Volume*<sup>4</sup>, Mute*<sup>4</sup></b>                                                                                                                                                                                          |
| Color Adjust                                                                                                                                                                                                                           |
| SRGB, 9300K, 7500K, 6500K(default), 5400, User Color [R, G, B]                                                                                                                                                                         |
| Information [H Frequency, V Frequency, Resolution, Pixel Clock, Serial Number, Model Number, [" <a href="http://www.ViewSonic.com">www.ViewSonic.com</a> "] ]                                                                          |
| Manual Image Adjust                                                                                                                                                                                                                    |
| Horizontal Size* <sup>1</sup> , H/V. Position* <sup>1</sup> , Fine Tune* <sup>1</sup> , Sharpness* <sup>3</sup> , Opticolor [Standard, Text , Cinema, Game, Portrait, Scenery, Vivid ] Opticolor Skin Tone[Nature, reddish ,yellowish] |
| Setup Menu                                                                                                                                                                                                                             |

Language [English, French, German, Italian, Spanish, Finnish, Japanese, Simplified Chinese, Traditional 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, Opticolor On, and Opticolor Skin Tone On**

**\*3 These functions are not available under Native Resolution Mode**

**\*4 These functions setting can be recalled to default value by pressing [▼]+[▲]**

**[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

## 4-6 AUDIO INTERFACE (LCD SIDE-SPEAKER SPECIFICATION)

|                                     |                                                                                             |
|-------------------------------------|---------------------------------------------------------------------------------------------|
| Line input signal                   | 1.0 Vrms @1kHz                                                                              |
| Line input impedance                | 10 kOhm                                                                                     |
| Maximum Amp power output (Watt)     | 2 W (RL=4Ω)                                                                                 |
| Amp -THD                            | < 10 % THD @1kHz                                                                            |
| Speaker Power rating(Ω/Watt)        | 4Ω/2.5 W (TYP.) ; 4Ω/ 3 W (MAX)                                                             |
| Signal to Noise Ratio               | 72 dB                                                                                       |
| Frequency response                  | Fo – 20kHz                                                                                  |
| SPL.                                | 85 ± 3 dB (at 0.5m)                                                                         |
| FO                                  | 300 Hz                                                                                      |
| Line input connection               | 3.5 mm stereo jacks                                                                         |
| Vibration                           | There should be no audible vibration resonance at volume=100% & treble / bass in def. Value |
| 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 OFF WHEN THE REST OF THE MONITOR IS IN POWER SAVING                           |

\* No any sympathetic or abnormal noise allowed.

## 4-7 TFT LCD PANEL

### 1st Source Panel

|                                                                                     |                                                                                    |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Model number                                                                        | CMO A220Z1                                                                         |
| Type                                                                                | TN type with RSDS interface                                                        |
| Active Size                                                                         | 22" wide ; 473.76 (H) x 296.1 (V)                                                  |
| Pixel Arrangement                                                                   | RGB Vertical Stripe                                                                |
| Pixel Pitch                                                                         | 0.282(H) x 0.282(H) mm                                                             |
| Glass Treatment                                                                     | Anti Glare (Hard coating 3H)                                                       |
| # of Backlights                                                                     | 4 CCFL ; Top & Bottom edge side                                                    |
| Backlight Life                                                                      | 40,000 Hours (Min)                                                                 |
| Luminance (5-point) –<br>Condition:<br>CT = 6500K, Contrast = Max, Brightness = Max | 280 cd/m2 (Typ after 30 minute warm up)<br>200 cd/m2 (Min after 30 minute warm up) |
| Brightness Uniformity                                                               | 77 % (Typ) / 67 % (Min)                                                            |
| Contrast Ratio                                                                      | 700:1 (typ), 450:1 (min)                                                           |
| Color Depth                                                                         | 16.2 million colors (6 bits + 2 bits FRC)                                          |
| Viewing Angle (Horizontal)                                                          | @ CR>10<br>Typical: 170°<br>Minimum: 150°                                          |
| Viewing Angle (Vertical)                                                            | @ CR>10<br>Typical: 160°<br>Minimum: 140°                                          |
| Response Time<br>10%-90% @ Ta=25°C                                                  | Typical = 5ms (Tr =2 ms, Tf =3 ms)<br>Maximum = 15ms (Tr =7 ms, Tf =8 ms)          |
| Mercury                                                                             | 3.0 mg per lamp                                                                    |
| Panel Defects                                                                       | Please see Panel Quality Specifications.                                           |

\*The average of measured value from monthly shipment shall be equal or better than the Typical value above.

## 4-8 IMAGE PERFORMANCE

### Factory Defaults

| Item              | Defaults | Item              | Defaults    |
|-------------------|----------|-------------------|-------------|
| Contrast          | 70%      | OSD Time Out      | 15 Sec      |
| Brightness        | 100%     | OSD Background    | On          |
| Color Temperature | 6500K    | Volume            | 90%         |
| Sharpness         | 100%     | Treble            | N/A         |
| OSD H. Position   | 50%      | Bass              | N/A         |
| OSD V. Position   | 50%      | Input Priority    | Auto Search |
| 720x400/640x400   | 720x400  | Resolution Notice | Enabled     |

### Display Size

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

### Luminance

|                                                                                                  |                                                         |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Lv (Max) –<br>Condition:<br>Contrast = 100%<br>Brightness = 100%<br>CCT = User color(R/G/B=100%) | Lv (Max) = The Luminance in section 4-7 “TFT LCD PANEL” |
| Lv (sRGB) –<br>Condition:<br>Contrast = Default<br>Brightness = Default<br>CCT = sRGB            | 110 nits ≤ Lv (sRGB) ≤ 140 nits                         |
| Lv (6500k) –                                                                                     | Lv (6500K) / Lv (Max) x 100% > 85%                      |

|                                                                                                       |                                                                    |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Condition:<br>Contrast = Default<br>Brightness = Default<br>CCT = 6500K                               |                                                                    |
| Lv (9300k) –<br>Condition:<br>Contrast = Default<br>Brightness = Default<br>Color Temperature = 9300K | $Lv(9300k) / Lv(Def) \times 100\% > 70\%$                          |
| Lv (7500k) –<br>Condition:<br>Contrast = Default<br>Brightness = Default<br>Color Temperature = 7500K | $Lv(7500k) / Lv(Def) \times 100\% > 75\%$                          |
| Lv (5400k) –<br>Condition:<br>Contrast = Default<br>Brightness = Default<br>Color Temperature = 5400K | $Lv(5400k) / Lv(Def) \times 100\% > 75\%$                          |
| Lv (Brightness) –Condition:<br>Contrast = 100%                                                        | $Lv(Brightness=0\%) / Lv(Brightness=100\%) \times 100\% \geq 55\%$ |
| Lv (Contrast) –Condition:<br>Brightness = 100%                                                        | $Lv(Contrast=0\%) / Lv(Contrast=100\%) \times 100\% \geq 30\%$     |

#### Contrast Ratio

|                                                                                             |                                                           |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| <b>CR(Max) –Condition:</b><br>Contrast / Brightness = 100%<br>CCT = USER COLOR (R/G/B=100%) | Same as the Contrast Ratio in section 4-6 “TFT LCD PANEL” |
| <b>CR(6500K) –Condition:</b><br>Contrast / Brightness = Default<br>CCT = 6500K              | $CR(6500K) / CR(Max) \geq 85\%$                           |

\*  $\geq 50\%$  units of shipment shall be equal or better than typical CR spec.

#### Saturation

|                                                                                    |                                           |
|------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Contrast = Default</b><br><b>Brightness = Default</b><br>Test Pattern = 64-Gray | <b>No visible saturation</b>              |
| <b>Contrast =100%</b><br><b>Brightness = 100%</b><br>Test Pattern = 32-Gray        | <b>&gt;1 and &lt;3 – level saturation</b> |

#### Preset Color Temperatures

|                                        |                                                                                               |
|----------------------------------------|-----------------------------------------------------------------------------------------------|
| sRGB                                   | <b>It should meet IEC 61966-2-1 (1999-10) standard.</b>                                       |
| Preset 1                               | CCT (typ) = 9300K<br>$x=0.283\pm0.03$<br>$y=0.298\pm0.03$                                     |
| Preset 2                               | CCT (typ) = 7500K<br>$x=0.299\pm0.03$<br>$y=0.315\pm0.03$                                     |
| Preset 3 (Primary)                     | CCT (typ) = 6500K<br>$x=0.313\pm0.03$<br>$y=0.329\pm0.03$                                     |
| Preset 4                               | CCT (typ) = 5400K<br>$x=0.336\pm0.03$<br>$y=0.348\pm0.03$                                     |
| Preset Color Temperature Adjustability | Each color preset shall be adjustable. Red, Green, and Blue shall be individually controlled. |

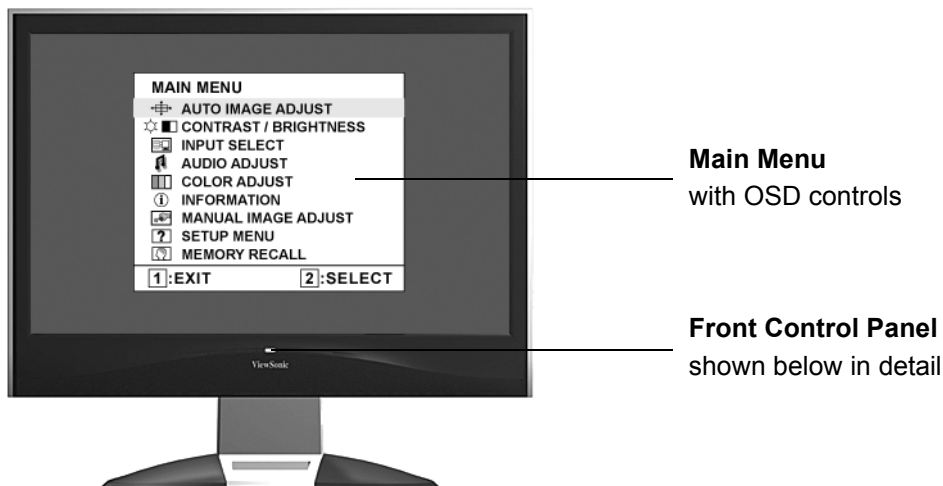
\* Any gray level and Contrast/Brightness should not get reddish, greenish or bluish.



### 3. Front Panel Function Control Description

## Adjusting the Screen Image

Use the buttons on the front control panel to display and adjust the OSD controls which display on the screen. The OSD controls are explained at the top of the next page and are defined in “Main Menu Controls” on page 10.

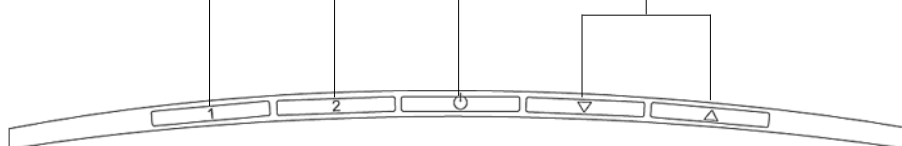


Displays the control screen for the highlighted control.  
Also toggles between two controls on some screens.  
Also a shortcut to Auto Image Adjust.

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

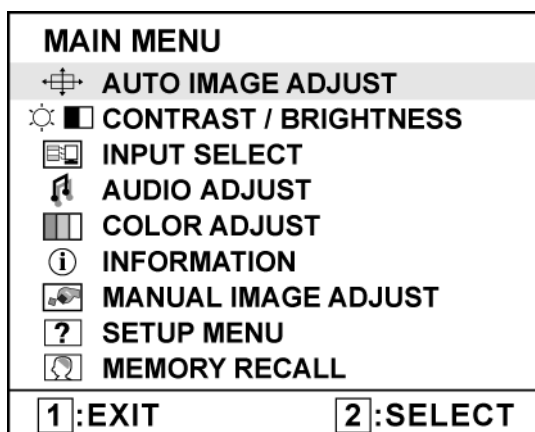
Standby Power On/Off  
Power light  
Blue = ON  
Orange = Power Saving

Scrolls through menu options and adjusts the displayed control.  
Also a shortcut to display the Contrast adjustment control screen (▼) / OptiColor (▲)



## 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.

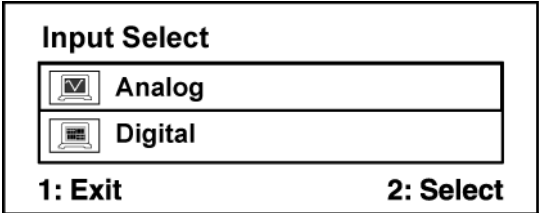
4. To adjust the setting, press the up ▲ or down ▼ buttons.
5. To save the adjustments and exit the menu, press button [1] *twice*.

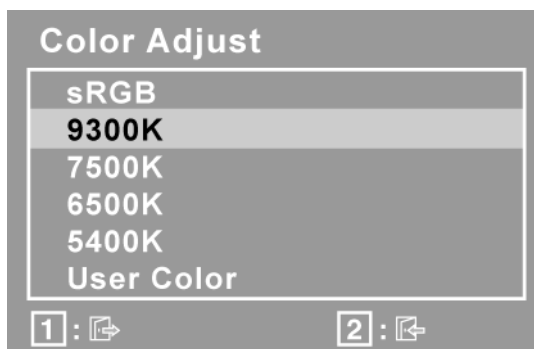
## The following tips may help you optimize your display:

- Adjust the computer's graphics card so that it outputs a 1680 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                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <b>Auto Image Adjust</b> sizes and centers the screen image automatically.                                                                                                                                                                                   |
|    | <b>Contrast</b> adjusts the difference between the image background (black level) and the foreground (white level).                                                                                                                                          |
|    | <b>Brightness</b> adjusts background black level of the screen image.                                                                                                                                                                                        |
|    | <b>Input Select</b> toggles between inputs if you have more than one computer connected to the VX2245wm.                                                                                                                                                     |
|                                                                                     |                                                                                                                                                                            |
|  | <b>Audio Adjust</b><br><b>Volume</b> increases the volume, decreases the volume, and mutes the audio.<br><b>Mute</b> temporarily silences audio output.                                                                                                      |
|  | <b>Color Adjust</b> 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).

**7500K** - 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.

**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).

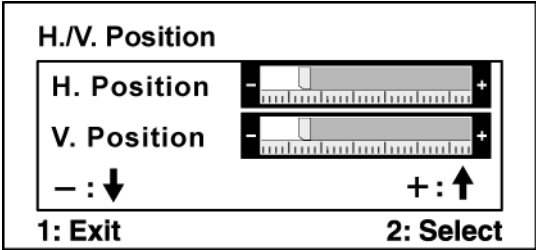
**NOTE:** VESA 1680 x 1050 @ 60Hz (recommended) means that the resolution is 1680 x 1050 and the refresh rate is 60 Hertz.

| Information                   |            |         |
|-------------------------------|------------|---------|
| H. Frequency:                 | XX         | kHz     |
| V. Frequency:                 | XX         | Hz      |
| Resolution:                   | XXX        | MHz     |
| Pixel Clock:                  | XXXXXXXXXX |         |
| Serial Number: XXXXXXXXXXXXXX |            |         |
| Model Number: XXXXXXXXXXXXXX  |            |         |
| www.ViewSonic.com             |            | 1: Exit |



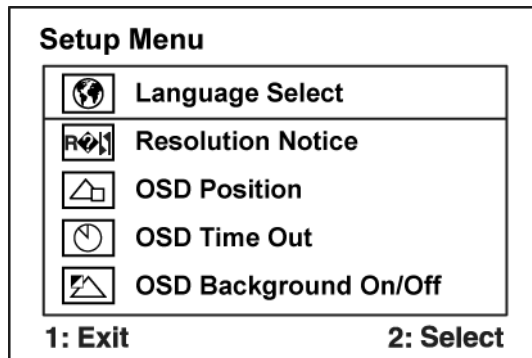
## Manual Image Adjust

| Manual Image Adjust                    |                     |
|----------------------------------------|---------------------|
|                                        | Horizontal Size     |
|                                        | H./V. Position      |
|                                        | Fine Tune           |
|                                        | Sharpness           |
|                                        | OptiColor Mode      |
|                                        | OptiColor Skin Tone |
| 1: Exit                      2: Select |                     |

| Control                                                                             | Explanation                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <b>Horizontal Size</b> adjusts the width of the screen image.                                                                                                                                                       |
|    | <b>H./V. Position (Horizontal/Vertical Position)</b> moves the screen image left or right and up or down.                                                                                                           |
|                                                                                     |                                                                                                                                    |
|    | <b>Fine Tune</b> sharpens the focus by aligning text and/or graphics with pixel boundaries.<br><b>NOTE:</b> Try Auto Image Adjust first.                                                                            |
|    | <b>Sharpness</b> adjusts the clarity and focus of the screen image.                                                                                                                                                 |
|   | <b>OptiColor Mode</b> provides an optimum display environment depending on the contents displayed. It contains 7 user-selectable presets. These 7 presets are easily accessible from the short cut keys.            |
|                                                                                     | <b>Standard</b> is for general windows environment and monitor default setting.                                                                                                                                     |
|                                                                                     | <b>Text</b> optimized for text editing and viewing in a word processing environment.                                                                                                                                |
|                                                                                     | <b>Cinema</b> optimized for movie and video environment.                                                                                                                                                            |
|                                                                                     | <b>Game</b> optimized for PC/TV game environment.                                                                                                                                                                   |
|                                                                                     | <b>Portrait</b> optimized for displaying indoor portraits and enhancing pictures.                                                                                                                                   |
|                                                                                     | <b>Scenery</b> optimized for displaying outdoor scenery images.                                                                                                                                                     |
|                                                                                     | <b>Vivid</b> optimized for color luster and sharpness.                                                                                                                                                              |
|                                                                                     | These 7 presets are carefully chosen by Viewsonic, but may not suit all users' tastes. In that case, the user can either return to the Standard setting and manually adjust the brightness and contrast as desired. |
|  | <b>OptiColor Skin Tone</b> includes 3 presets (Natural / Red Tone / Yellow Tone) which user can select according to user's preference.                                                                              |



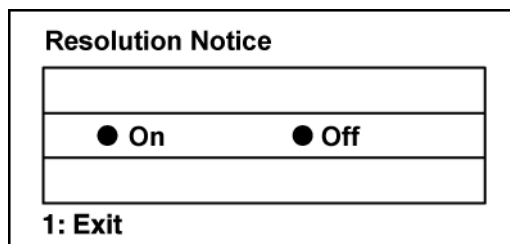
**Setup Menu** displays the menu shown below:



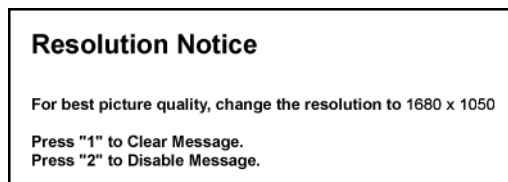
**Language Select** allows the user to choose the language used in the menus and control screens.



**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 1680 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.

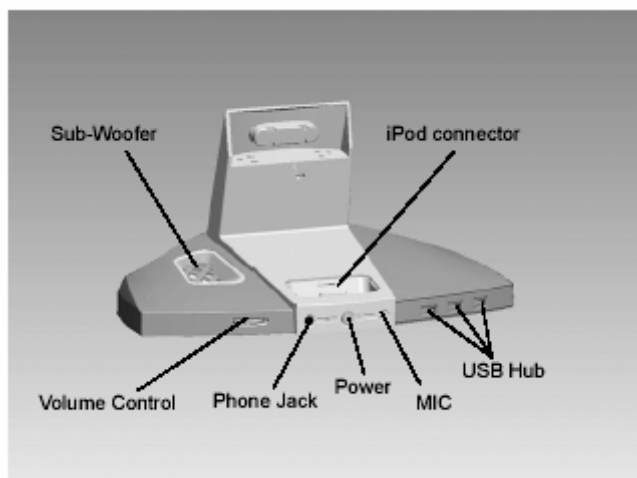


**Memory Recall** returns the adjustments back to factory settings if the display is operating in a factory Preset Timing Mode listed in the Specifications of this manual.

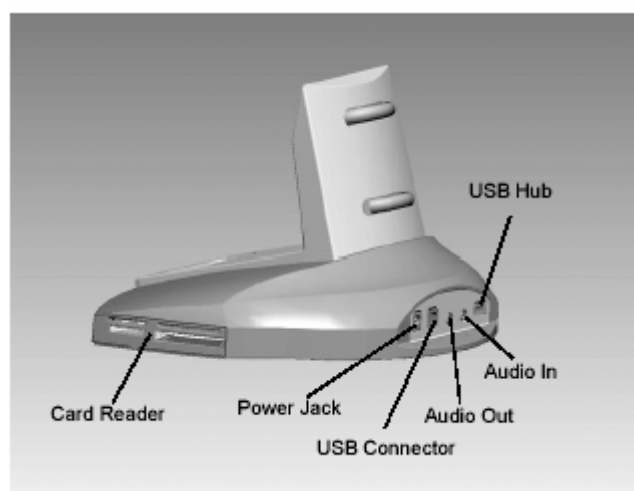
## Physical Description

Please refer to the following illustrations to identify the components of the ViewDock.

### Front View



### Rear view

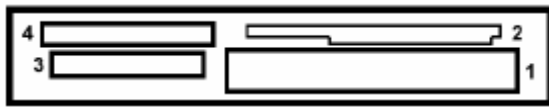


## Card Reader Installation

### Refer to the following information

After connecting the ViewDock to your PC, Windows File Manager will show 4 extra icons.

Step1. Please check your card socket



- |               |              |
|---------------|--------------|
| 1. CFI/III/MD | 3. MS/MS PRO |
| 2. SMC        | 4. SD/MMC    |

Step2. Insert your memory card. Each slot of the card reader will be recognized as a Removable Disk and the icon will be shown in "My Computer" of Windows



You do not need to install any special drivers for the Card Reader if your OS is Windows 2000/ ME/XP.

### Card reader Installation guide for Windows 98SE :

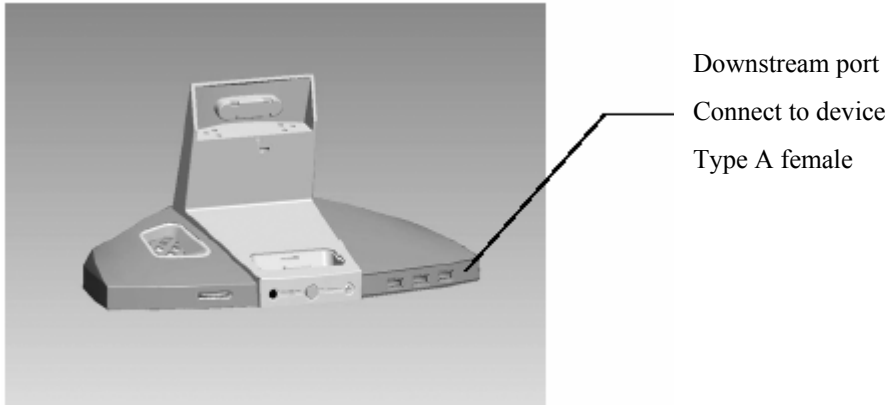
(Please do not connect the ViewDock to your PC's USB port before running the CD):

1. Insert the driver CD into the CD-ROM
2. Please launch the .exe file and the driver will be installed automatically.
3. After completing installation, connect the ViewDock to your PC's USB port. The card reader is now operational.
4. Each slot of the card reader will be recognized as a Removable Disk and the icon will be shown in "My Computer."



## USB Hub Installation

### Refer to the following information



Connect any USB devices via the USB ports on the ViewDock.

Windows will auto detect and install the generic Windows USB driver for USB 1.1/2.0 device operation.

You do not need to install any special drivers for the USB Hub if your OS is Windows 2000/ ME/XP.

### USB hub installation guide for Windows 98SE :

Insert the included CD into the CD-ROM drive. The Autorun feature will automatically begin the installation process. Follow the instructions on the screen to install the driver. If the setup program does not start automatically, go to "My Computer" and double-click on the CD-ROM drive, and select "Setup.exe" from the CD.

**Note:** If USB device is not detected , does not work properly:

1. Double click the "System" icon in Control Panel.
2. Select the "Device Manager" tab from System Properties dialog window.
3. Select "Other devices" to see the contents.
4. Select "Unknown device" and click "Remove" button.
5. Click the "Refresh" button and system will find a new device.

### ViewDock™ Connecting with iPod

#### Refer to the following information

1. Make sure the ViewDock power is ON.
2. Dock your iPod into the universal iPod docking station with the appropriate adapter insert.
3. The iPod LED indicator will turn on amber
4. Wait for a few seconds for the iTunes software to launch.
5. Play your favorite song with iTunes software (for all iPod models) or play music from iPod directly (excluding iPod shuffle.)

### iPod adapter insert description:

iPod with video adaptor is a default setting for multimedia base.

| Adapter No. | Work with Ipod models                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------|
| 1.          | iPod nano                                                                                                                |
| 2.          | iPod mini (1st/ 2nd Generation)                                                                                          |
| 3.          | iPod Video<br>iPod with color display (20G/U2)<br>iPod with Click Wheel (20G/U2)                                         |
| 4.          | iPod with color display (30G)<br>iPod with dock connector (10/15/20G)                                                    |
| 5.          | iPod with color display (60G)<br>iPod photo (40/60G)<br>iPod with Click Wheel (40G)<br>iPod with dock connector (30/40G) |

### Subwoofer Volume Control

Refer to the following information

1. Adjust subwoofer volume via volume control
2. "▲" Turn right to increases the subwoofer volume.
3. "▼" Turn left to decreases the subwoofer volume.
4. In order to obtain the optimum listening environment, please adjust the volume of stereo speakers in the monitor head via the monitor OSD menu to match and balance the subwoofer volume.



## 4. Circuit Description

---

### 1. RTD 2553V

Realtek RTD2553V series products are all-in-one LCD monitor controllers supporting UXGA / WSXGA+ / WXGA+ / SXGA (optional), and integrate Realtek high performance ADC, TMDS Rx(optional), scaling engine, OSD engine, LVDS Tx, RSDS Tx and so on. Moreover, all products are pin compatible in QFP128-pin package to save cost and make the design easier.

### 2. RTD2120

This chip is the micro-processor of LCD monitor. It uses the design ware DW8051 of Synopsys as the 8051 core of this chip and is compatible with other industry 8051 series. Also, 96Kbyte FLASH with 8 bit bus is embedded in this chip which is licensed from TSMC 0.18um e-FLASH process. Here we use the package of PLCC44/LQFP48 if we would like to have a discrete MCU controller or we make a multi-chip package with our LCD monitor controller to form one chip package to save the cost of package and PCB material.

## Analog EDID

Time: 13:26:13

Date: Thu Jun 08, 2006

---

VIEWSONIC CORPORATION

EDID Version # 1, Revision # 3

DDCTest For: ViewSonic VX2245wm

---

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  |   | 1E | BB | 01 | 01 | 01 | 01 | 01 | 10 | 01 03 |
| 20  |   | 0E | 2F | 1E | 78 | 2E | F5 | 85 | A4 | 58 49 |
| 30  |   | 9A | 24 | 12 | 50 | 54 | BF | EF | 80 | B3 00 |
| 40  |   | A9 | 40 | 95 | 00 | 90 | 40 | 81 | 80 | 81 40 |
| 50  |   | 71 | 4F | 01 | 01 | 21 | 39 | 90 | 30 | 62 1A |
| 60  |   | 27 | 40 | 68 | B0 | 36 | 00 | DA | 28 | 11 00 |
| 70  |   | 00 | 1C | 00 | 00 | 00 | FF | 00 | 51 | 44 4F |
| 80  |   | 30 | 36 | 30 | 31 | 30 | 30 | 30 | 30 | 31 0A |
| 90  |   | 00 | 00 | 00 | FD | 00 | 32 | 4B | 1E | 52 0F |
| 100 |   | 00 | 0A | 20 | 20 | 20 | 20 | 20 | 20 | 00 00 |
| 110 |   | 00 | FC | 00 | 56 | 58 | 32 | 32 | 34 | 35 77 |
| 120 |   | 6D | 0A | 20 | 20 | 20 | 20 | 00 | A9 |       |

---

(08-09) ID Manufacturer Name \_\_\_\_\_ = VSC

(11-10) Product ID Code \_\_\_\_\_ = BB1E

(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, Composite Sync, Sync on Green

(21) Maximum Horizontal Image Size \_\_\_\_\_ = 470 mm

(22) Maximum Vertical Image Size \_\_\_\_\_ = 300 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 - 0.644 Green X - 0.286 Blue X - 0.143 White X - 0.313  
Red Y - 0.347 Green Y - 0.603 Blue Y - 0.070 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:  
1680 X 1050 @60Hz  
1600 X 1200 @60Hz  
1440 X 900 @60Hz  
1400 X 1050 @60Hz  
1280 X 1024 @60Hz  
1280 X 960 @60Hz  
1152 X 864 @75Hz  
Not Used

---

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

1680x1050 Pixel Clock: 146.25 MHz

---

|                                |                             |
|--------------------------------|-----------------------------|
| Horizontal Image Size: 474 mm  | Vertical Image Size: 296 mm |
| Refreshed Mode: Non-Interlaced | Normal Display - No Stereo  |

Horizontal:

Active Time: 1680 pixels

Blanking Time: 560 pixels

Sync Offset: 104 pixels

Sync Pulse Width: 176 pixels

Border: 0 pixels

Frequency: 65.29 KHz

Vertical:

Active Time: 1050 lines

Blanking Time: 39 lines

Sync Offset: 3 lines

Sync Pulse Width: 6 lines

Border: 0 lines

Frequency: 59.95 Hz

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

---

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

Monitor Serial Number:

QDO060100001

---

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

Monitor Range Limits:

Min Vertical Freq - 50 Hz

Max Vertical Freq - 75 Hz

Min Horiz. Freq - 30 KHz

Max Horiz. Freq - 82 KHz

Pixel Clock - 150 MHz

Secondary GTF - Not Supported

---

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

Monitor Name:

VX2245wm

(126) No Extension EDID Block(s)

(127) CheckSum OK

# Digital EDID

Time: 13:27:26

Date: Thu Jun 08, 2006

---

## VIEWSONIC CORPORATION

EDID Version # 1, Revision # 3

DDCTest For: ViewSonic VX2245wm

---

### 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  |   | 1E | BB | 01 | 01 | 01 | 01 | 10 | 01 | 03    |
| 20  |   | 80 | 2F | 1E | 78 | 2E | F5 | 85 | A4 | 58 49 |
| 30  |   | 9A | 24 | 12 | 50 | 54 | BF | EF | 80 | B3 00 |
| 40  |   | A9 | 40 | 95 | 00 | 90 | 40 | 81 | 80 | 81 40 |
| 50  |   | 71 | 4F | 31 | 0A | 21 | 39 | 90 | 30 | 62 1A |
| 60  |   | 27 | 40 | 68 | B0 | 36 | 00 | DA | 28 | 11 00 |
| 70  |   | 00 | 1C | 00 | 00 | 00 | FF | 00 | 51 | 44 4F |
| 80  |   | 30 | 36 | 30 | 31 | 30 | 30 | 30 | 30 | 31 0A |
| 90  |   | 00 | 00 | 00 | FD | 00 | 32 | 4B | 1E | 52 0F |
| 100 |   | 00 | 0A | 20 | 20 | 20 | 20 | 20 | 20 | 00 00 |
| 110 |   | 00 | FC | 00 | 56 | 58 | 32 | 32 | 34 | 35 77 |
| 120 |   | 6D | 0A | 20 | 20 | 20 | 20 | 00 | FE |       |

---

(08-09) ID Manufacturer Name \_\_\_\_\_ = VSC

(11-10) Product ID Code \_\_\_\_\_ = BB1E

(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 \_\_\_\_\_ = 470 mm

(22) Maximum Vertical Image Size \_\_\_\_\_ = 300 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 - 0.644 Green X - 0.286 Blue X - 0.143 White X - 0.313

Red Y - 0.347 Green Y - 0.603 Blue Y - 0.070 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:

1680 X 1050 @60Hz

1600 X 1200 @60Hz

1440 X 900 @60Hz

1400 X 1050 @60Hz

1280 X 1024 @60Hz

1280 X 960 @60Hz

1152 X 864 @75Hz

640 X 400 @70Hz

---

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

1680x1050 Pixel Clock: 146.25 MHz

---

Horizontal Image Size: 474 mm

Vertical Image Size: 296 mm

Refreshed Mode: Non-Interlaced

Normal Display - No Stereo



**Horizontal:**

**Active Time: 1680 pixels**

**Blanking Time: 560 pixels**

**Sync Offset: 104 pixels**

**Sync Pulse Width: 176 pixels**

**Border: 0 pixels**

**Frequency: 65.29 KHz**

**Vertical:**

**Active Time: 1050 lines**

**Blanking Time: 39 lines**

**Sync Offset: 3 lines**

**Sync Pulse Width: 6 lines**

**Border: 0 lines**

**Frequency: 59.95 Hz**

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

---

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

**Monitor Serial Number:**

**QDO060100001**

---

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

**Monitor Range Limits:**

**Min Vertical Freq - 50 Hz**

**Max Vertical Freq - 75 Hz**

**Min Horiz. Freq - 30 KHz**

**Max Horiz. Freq - 82 KHz**

**Pixel Clock - 150 MHz**

**Secondary GTF - Not Supported**

---

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

**Monitor Name:**

**VX2245wm**

**(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 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:



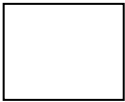
Full Screen 50% White (Gray)

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

## 9. White Box

Test Signal: 1280\*1024@60Hz

Test Pattern:



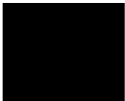
Window standard pattern

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 Blue

Inspection Item: Bright Dot, Partial & Line Defect

## 14. Gray\_Scale\_0-100\_V64

Test Signal: 1280\*1024@60Hz

Test Pattern:

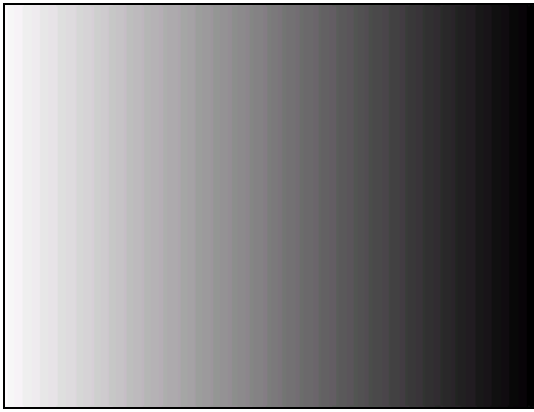


Vertical 64 (256) Gray Scale (Right → Left , From 0 to 100% White)

Inspection Item: Line Defect & Function Defect

## 15. Function Test Display pattern

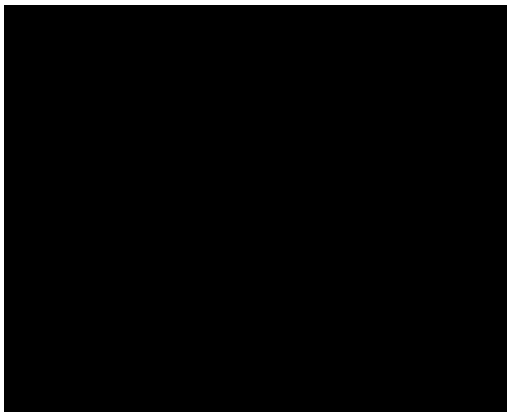
| Item | Pattern            | Description                                                 | Remark   |
|------|--------------------|-------------------------------------------------------------|----------|
| 1    | Gray_Scale_0-100_V | Vertical 64 (256) Gray Scale (右→左 , From 0 to 100% White)   | Figure 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**



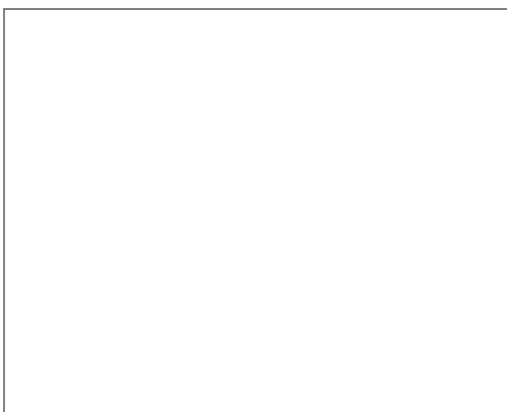
**Figure 4**



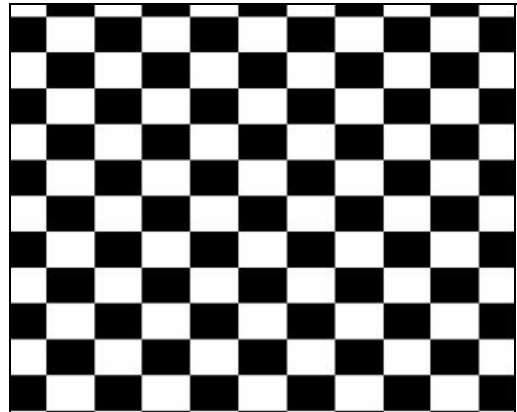
**Figure 5**



**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



Fig1

## PORT95NT.exe

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

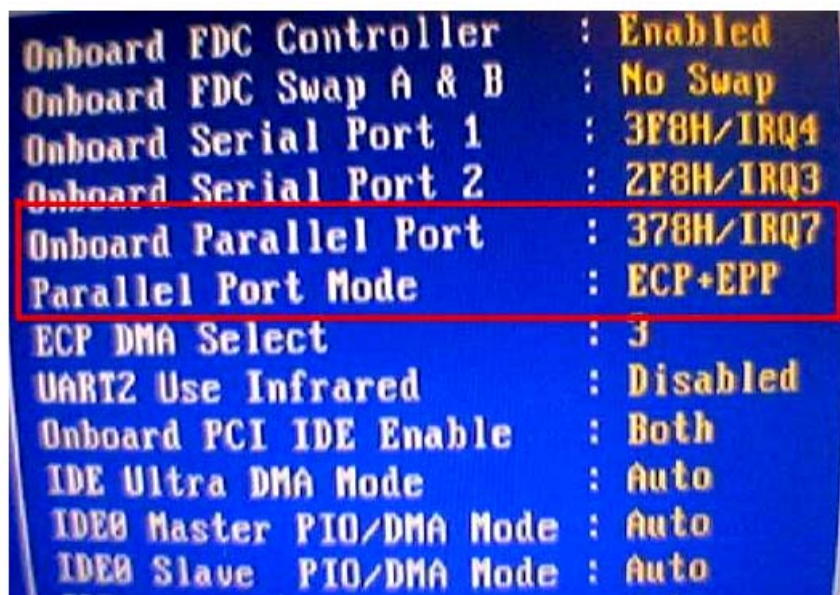


Fig 2

## 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

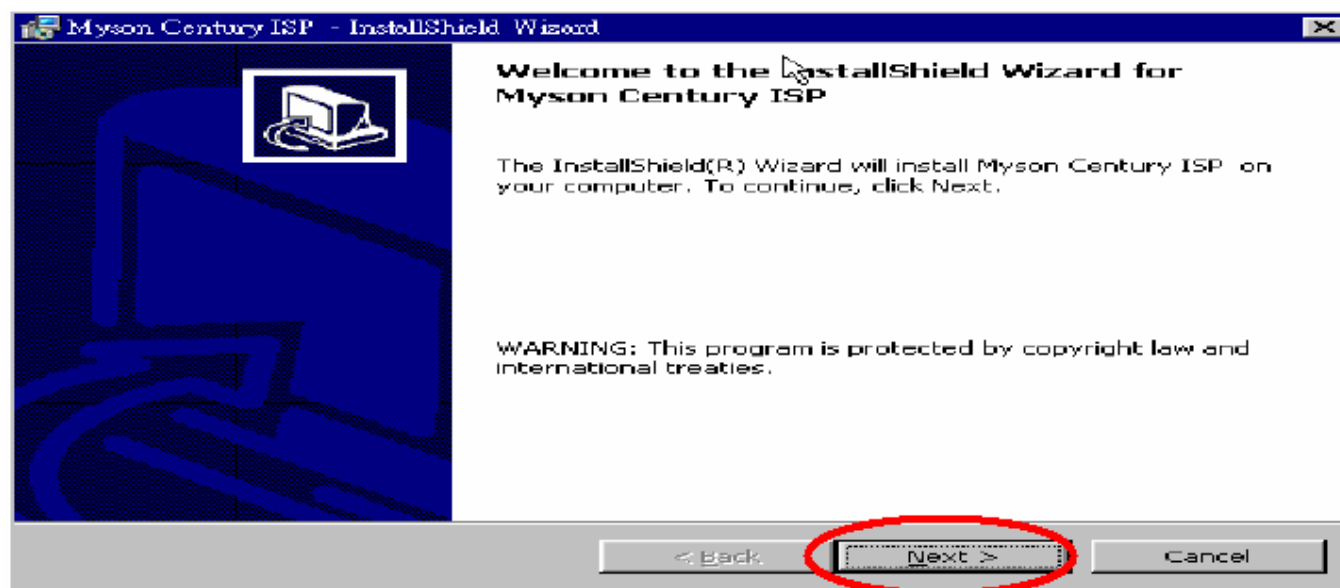


Fig 2.3

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.

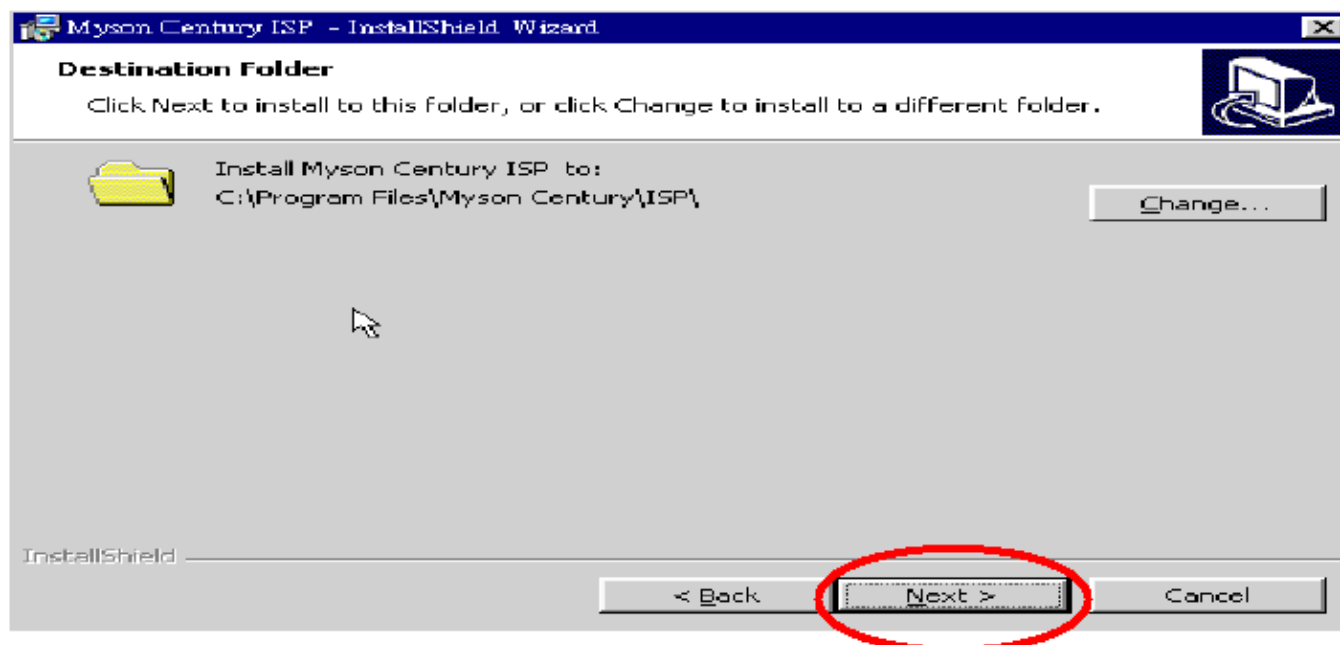


Fig 2.4

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

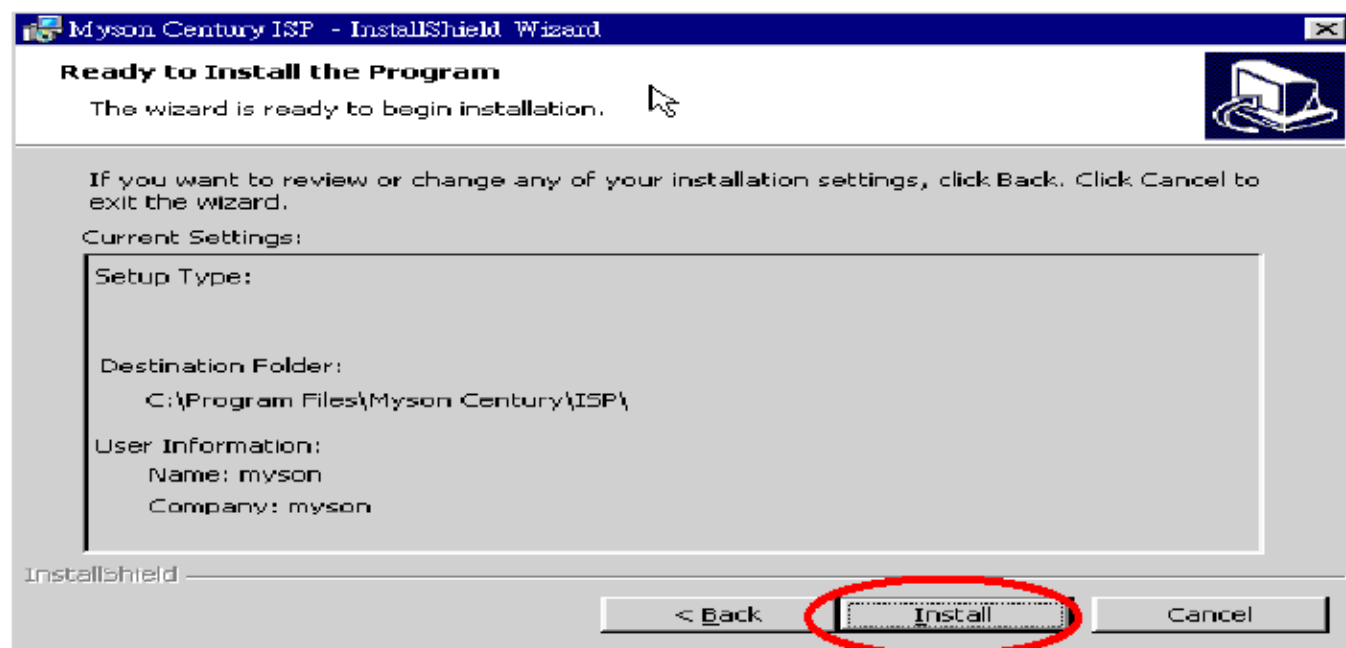


Fig 2.5



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

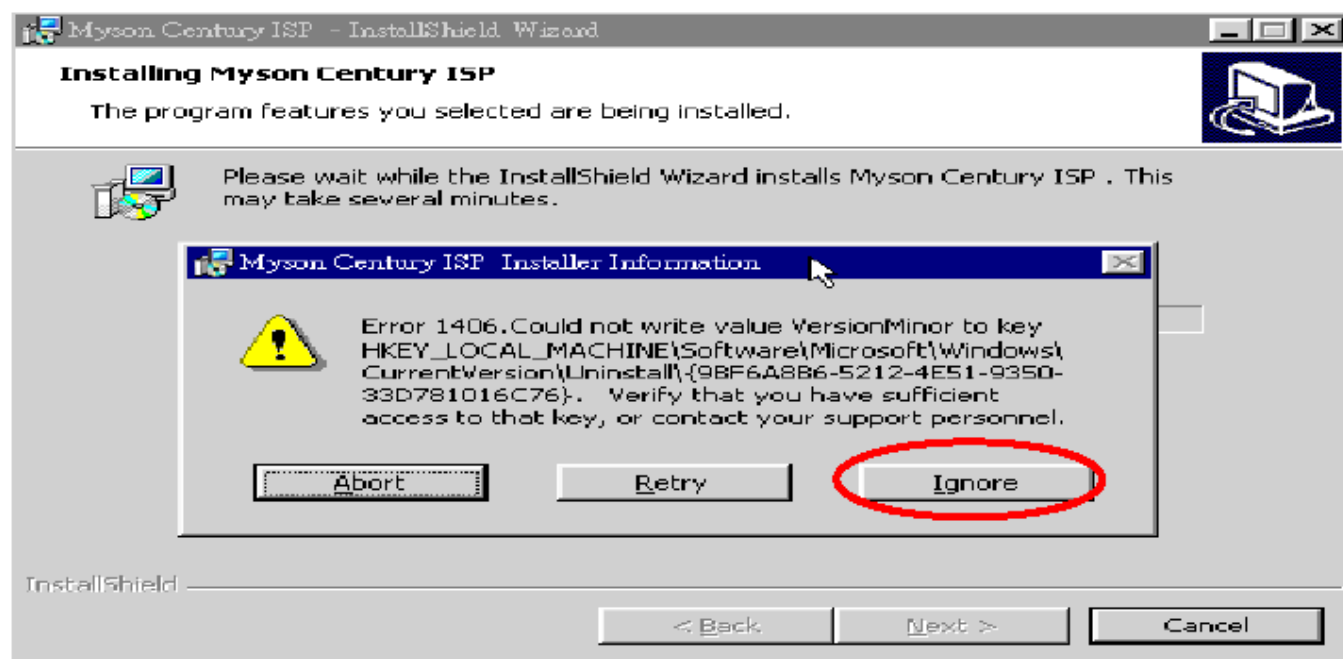


Fig 2.6

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

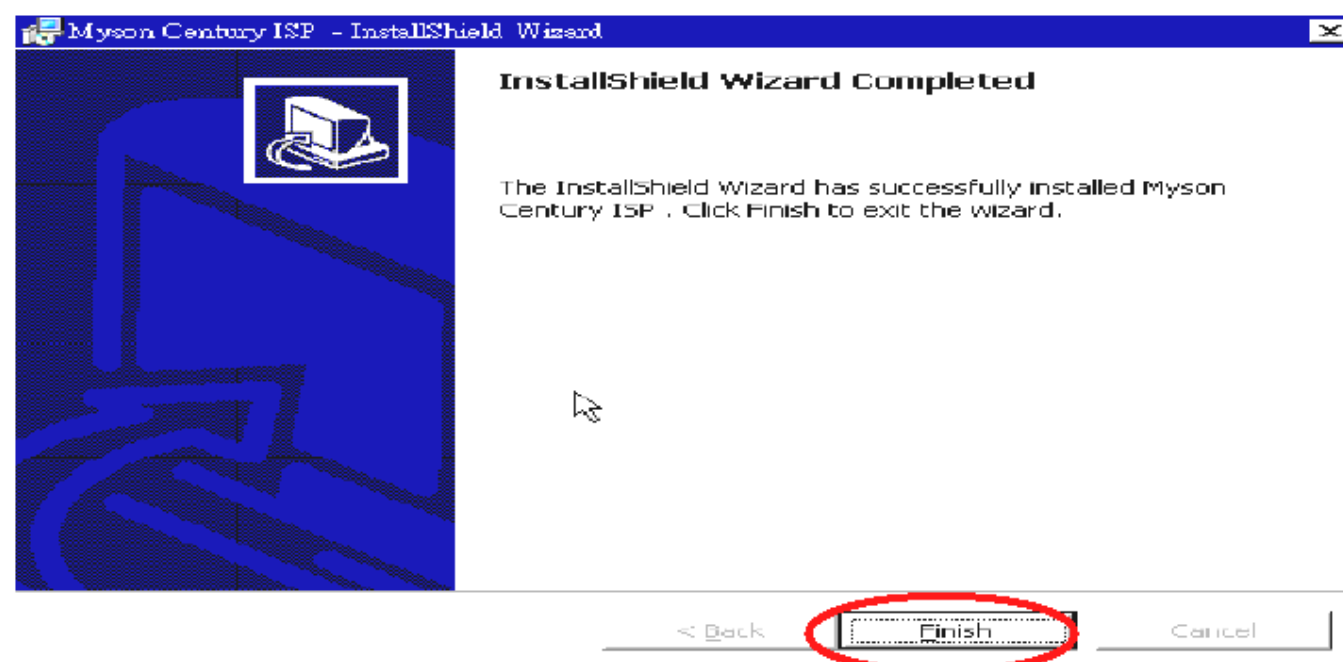


Fig 2.7

### 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.

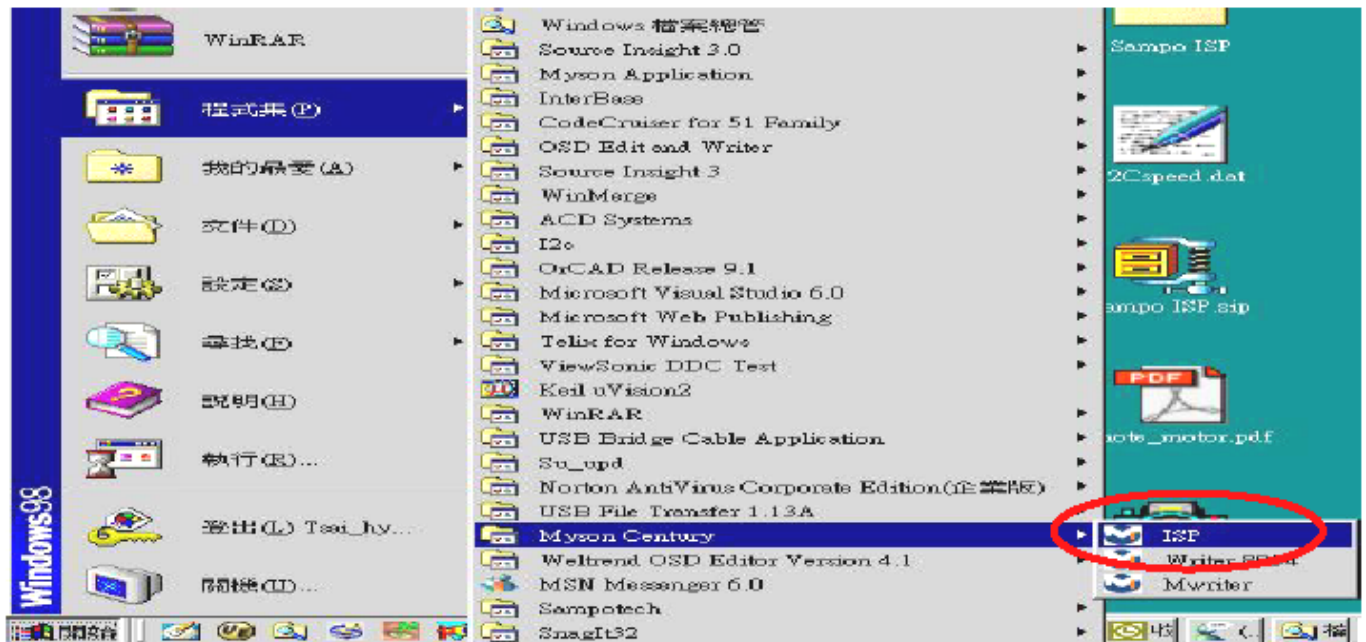


Fig 3.1

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

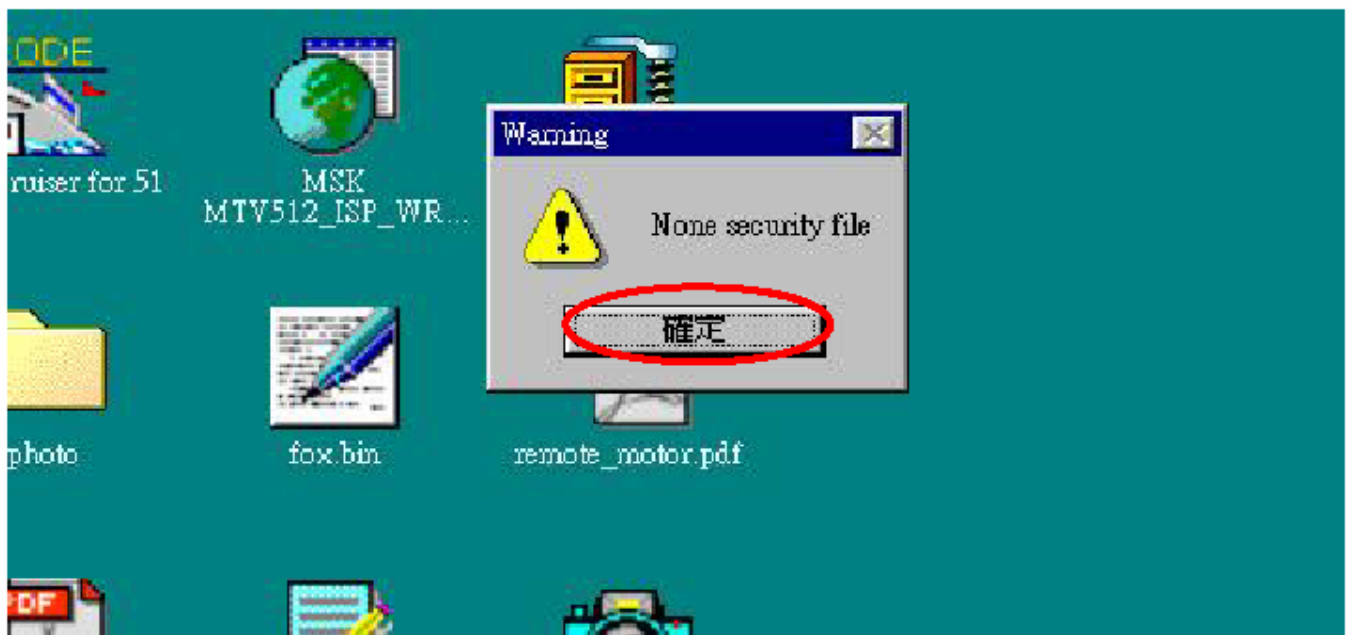


Fig 3.2

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.

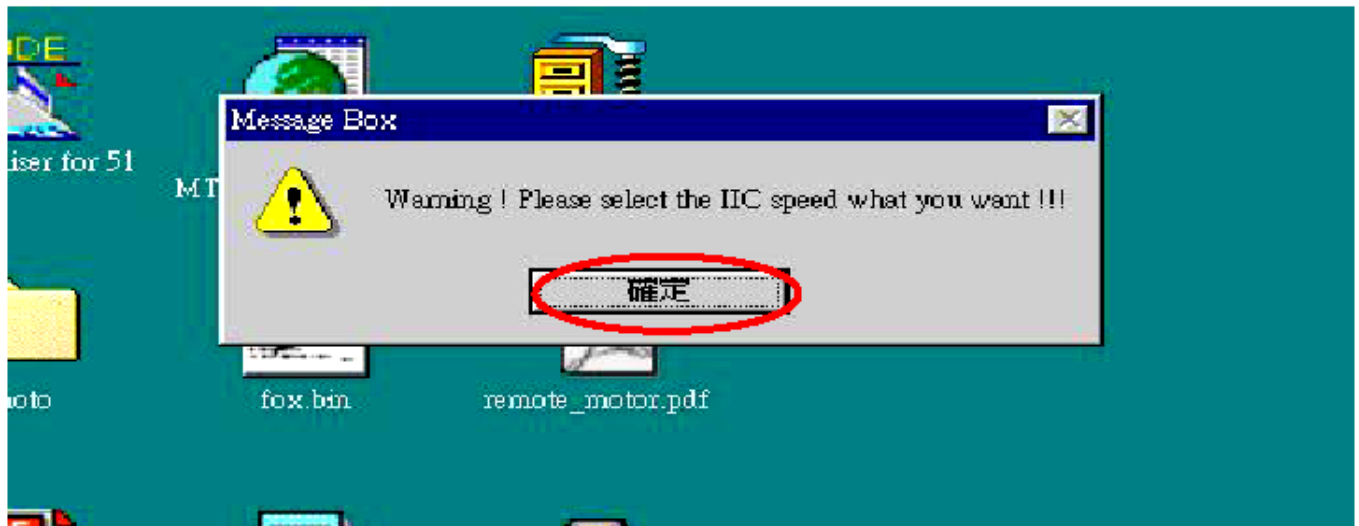


Fig 3.3

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

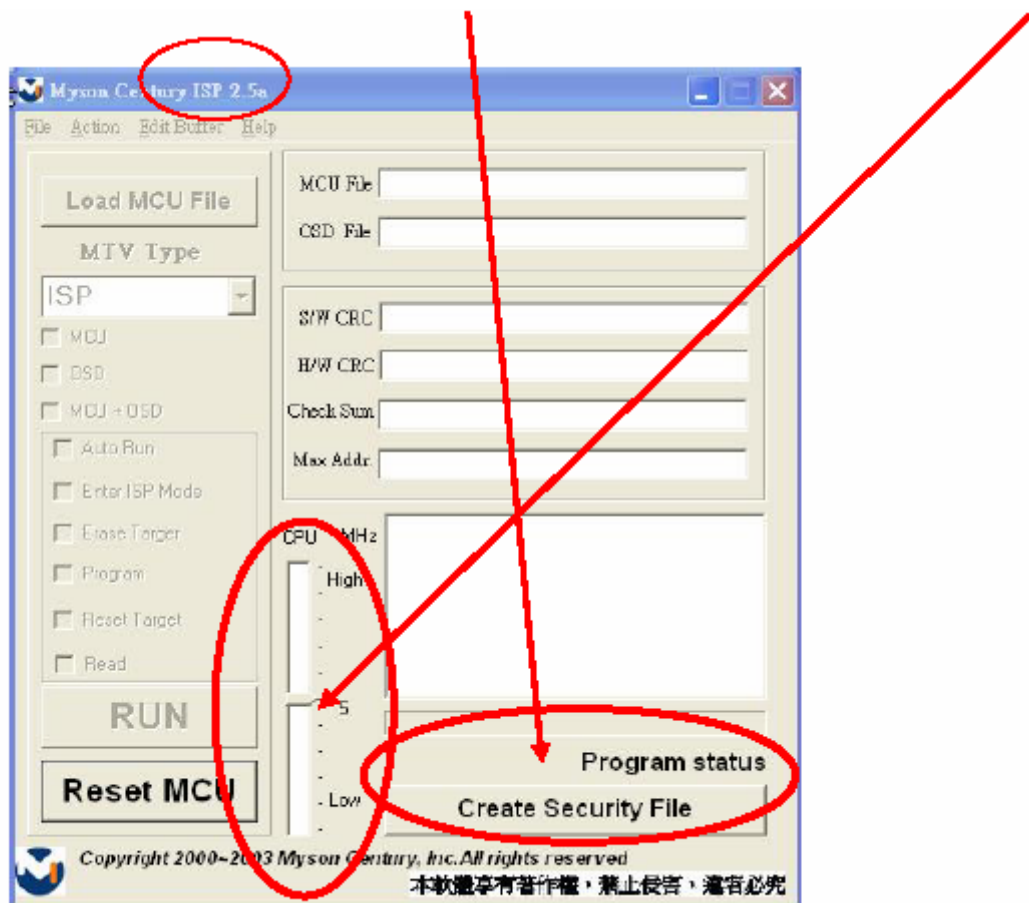


Fig 3.4

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' dialog box with a list of 16 commands (ISP Slave Add., SlaveB Add., Command 1 through Command 15). Each command has an associated input field and a range of 0x00 - 0xFF. To the right of the list, there is a 'Command No' field with a red circle around it, containing the number '2'. Below this field are 'OK' and 'CLEAR' buttons. On the far right, there are additional buttons labeled 'n status' and 'File'.

| Command        | Input Field          | Range       |
|----------------|----------------------|-------------|
| ISP Slave Add. | <input type="text"/> | 0x00 - 0xFF |
| SlaveB Add.    | <input type="text"/> | 0x00 - 0xFF |
| Command 1      | <input type="text"/> | 0x00 - 0xFF |
| Command 2      | <input type="text"/> | 0x00 - 0xFF |
| Command 3      | <input type="text"/> | 0x00 - 0xFF |
| Command 4      | <input type="text"/> | 0x00 - 0xFF |
| Command 5      | <input type="text"/> | 0x00 - 0xFF |
| Command 6      | <input type="text"/> | 0x00 - 0xFF |
| Command 7      | <input type="text"/> | 0x00 - 0xFF |
| Command 8      | <input type="text"/> | 0x00 - 0xFF |
| Command 9      | <input type="text"/> | 0x00 - 0xFF |
| Command 10     | <input type="text"/> | 0x00 - 0xFF |
| Command 11     | <input type="text"/> | 0x00 - 0xFF |
| Command 12     | <input type="text"/> | 0x00 - 0xFF |
| Command 13     | <input type="text"/> | 0x00 - 0xFF |
| Command 14     | <input type="text"/> | 0x00 - 0xFF |
| Command 15     | <input type="text"/> | 0x00 - 0xFF |

Command No: **2**

OK CLEAR

n status File

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**.

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

| Field          | Value | Range       |
|----------------|-------|-------------|
| ISP Slave Add. | 94    | 0x00 - 0xFF |
| SlaveB Add.    | 94    | 0x00 - 0xFF |
| Command 1      | ac    | 0x00 - 0xFF |
| Command 2      | ca    | 0x00 - 0xFF |
| Command 3      | 53    | 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 |

Additional controls:

- Command No:** 4 (with increment/decrement buttons)
- OK** button
- CLEAR** button
- File** button (partially visible)

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' window 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 |

Additional controls:

- Command No:** A numeric field with up/down arrows, currently set to 2.
- Buttons:** OK, CLEAR, and a File button.
- Status:** A label 'n status' is visible next to the File button.

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.

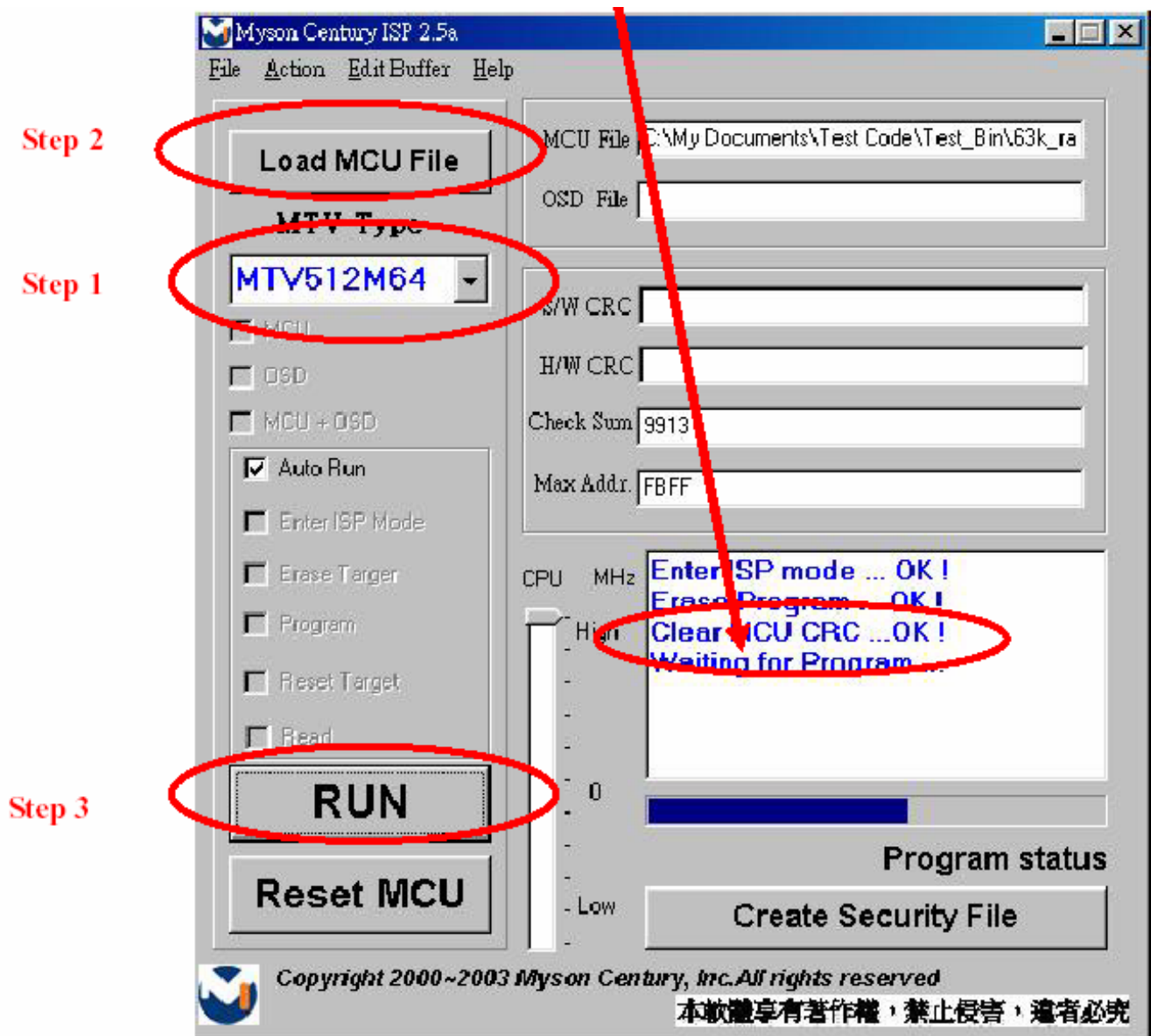


Fig 4.1

## 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.

The screenshot shows a software window titled "Read Data" with a "Save" button. Below the title bar is a table displaying memory data. The table has 17 columns labeled 0 through F. The rows are indexed from 0 to 130. Each cell in the table contains a hexadecimal value. Below the table, there is a large "RUN" button, a "Low" indicator, a "Program status" label, the "Myson Century, Inc." logo and name, and a "Creat Security File" button.

|     | 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 |

**RUN** Low Program status

**Myson Century, Inc.** **Creat Security File**

Fig 5.1



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

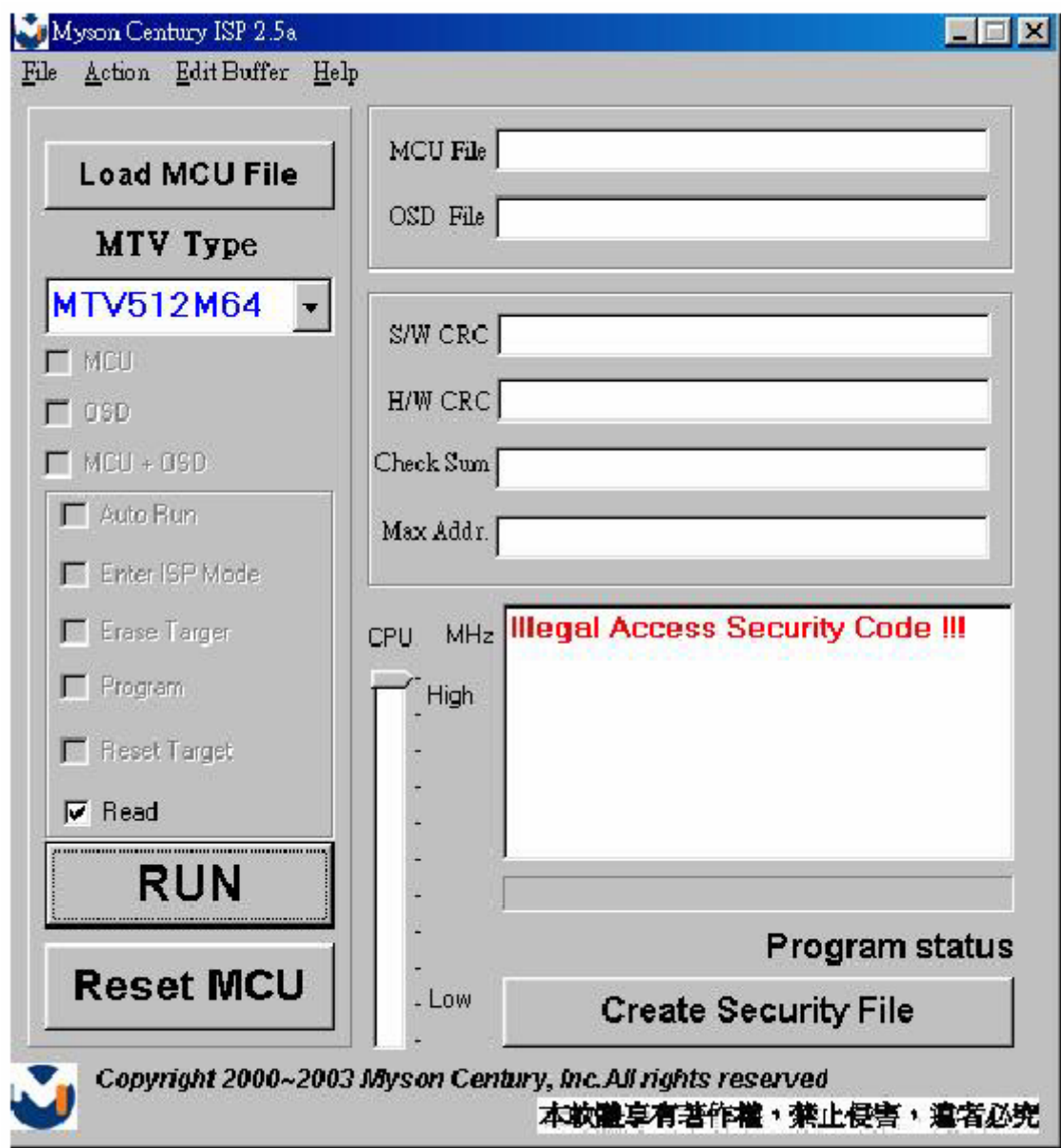
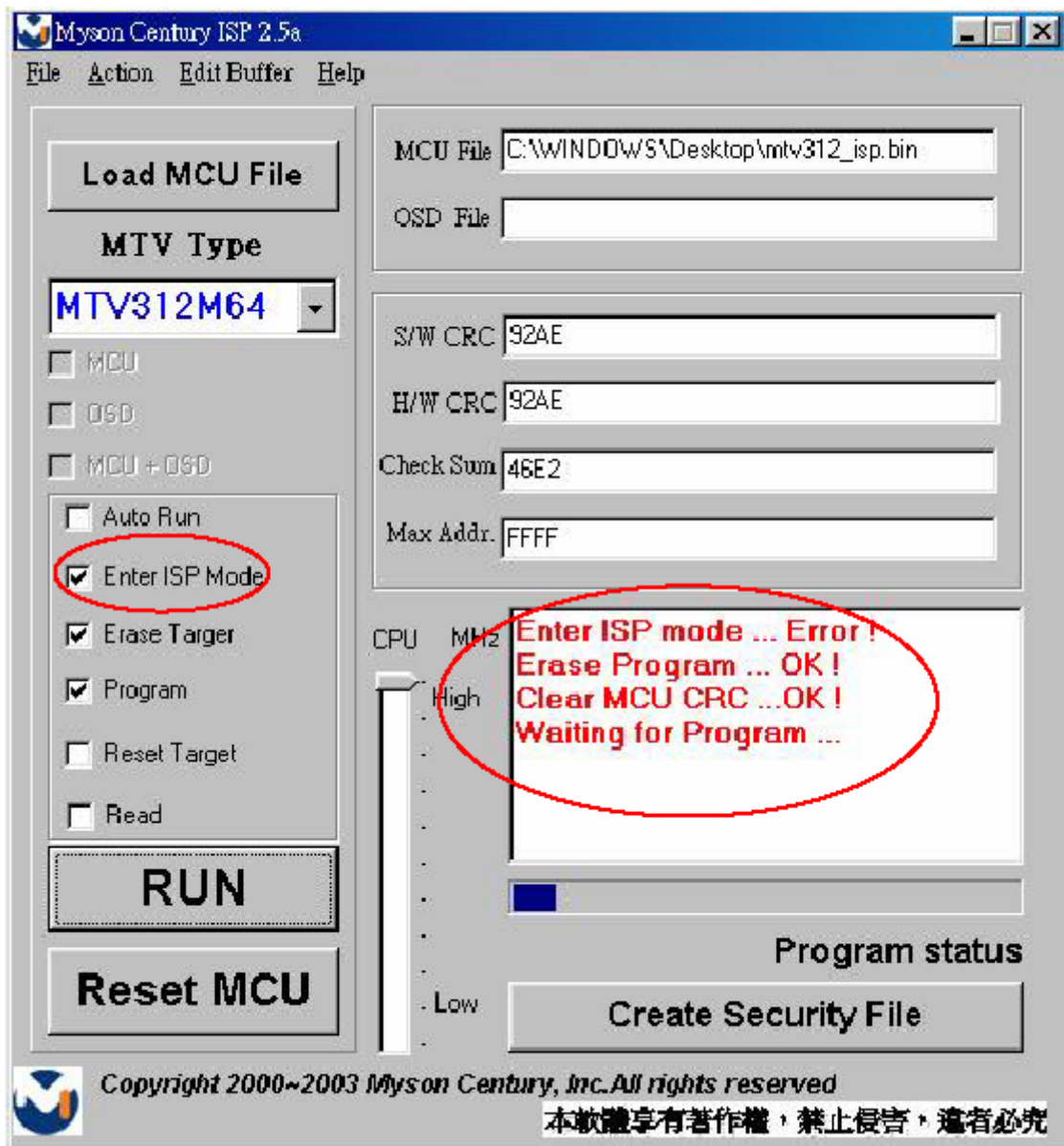
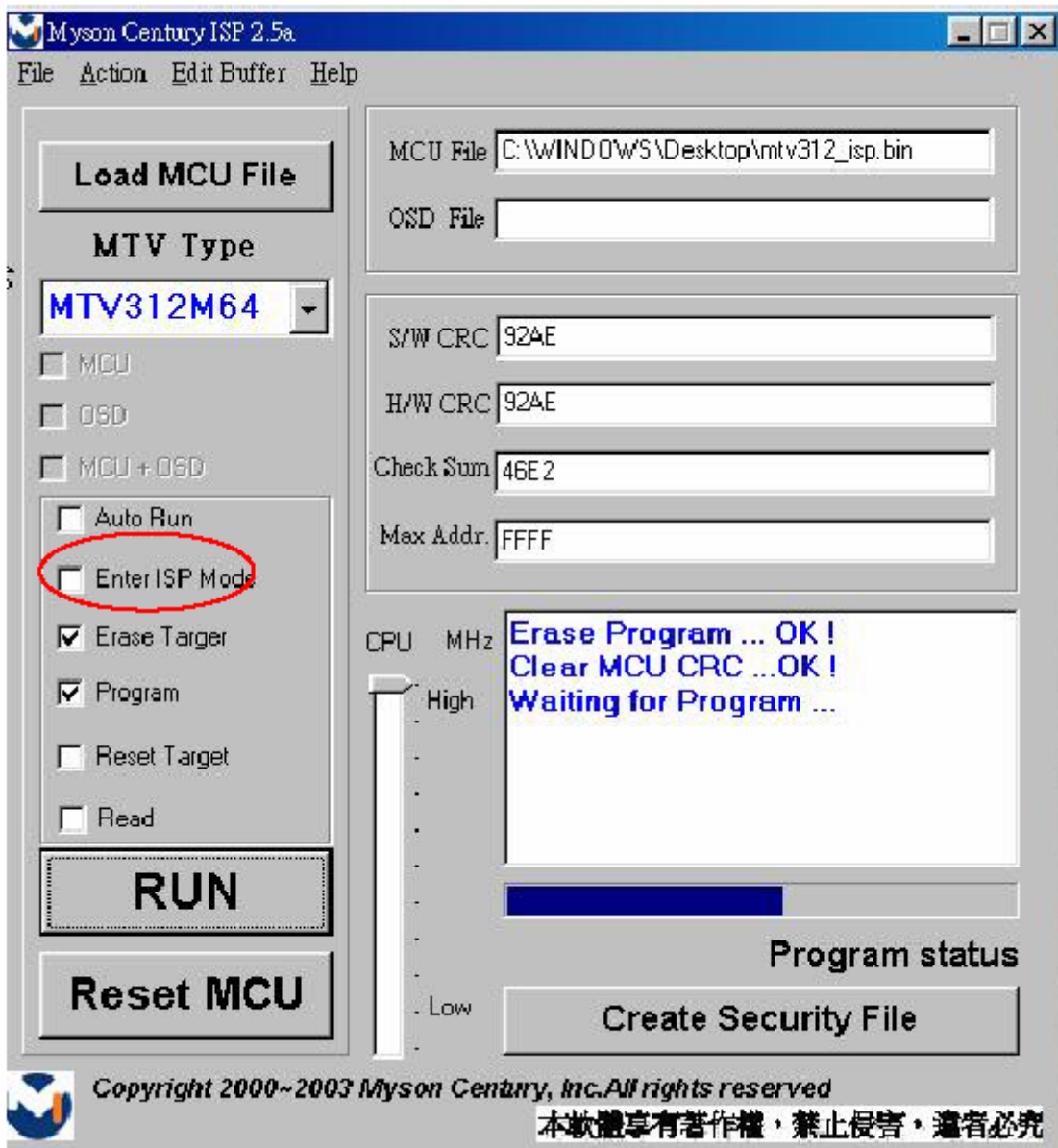


Fig 5.2

## 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 programming fails or erases the MCU that 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[SLV_ADDR]=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[HVSTATUS]=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;
}

```

```

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;
        }
    }
}

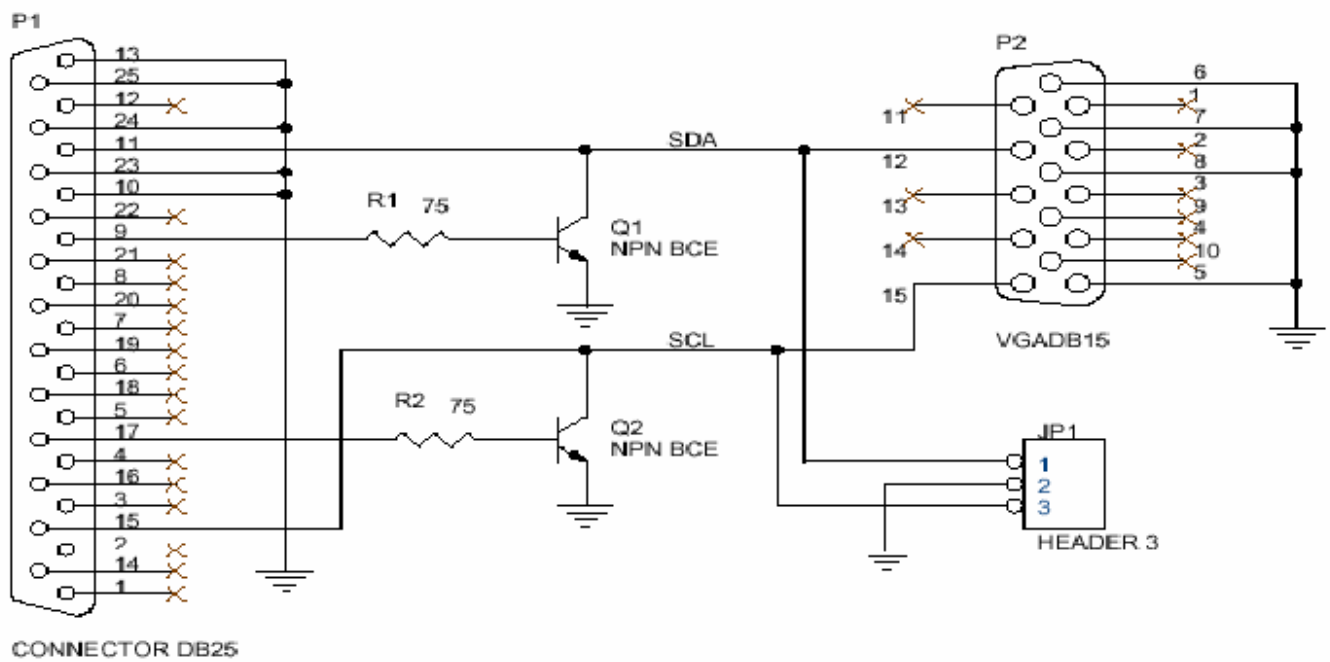
```

| 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 |

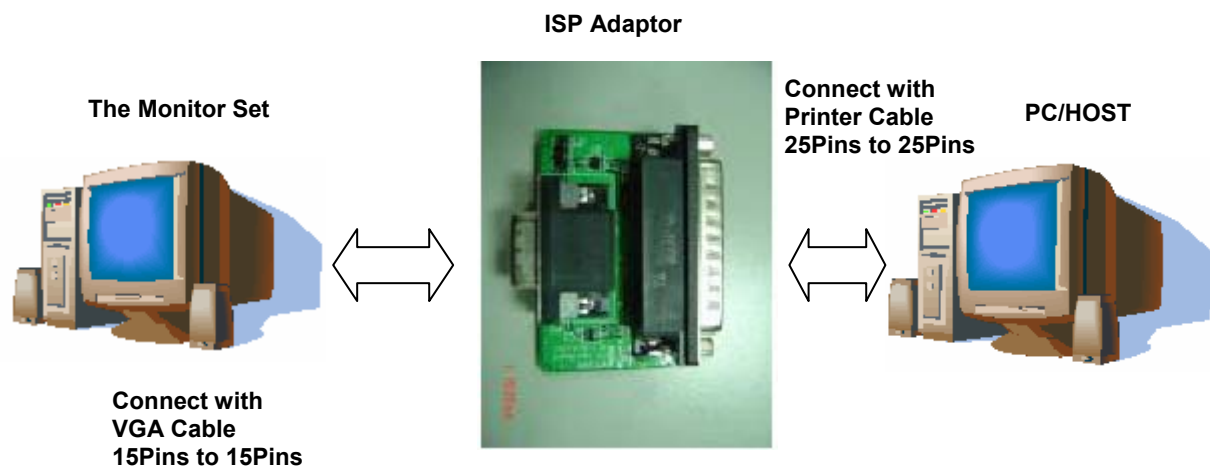
Command No:

OK CLEAR

## 8. ISP Adaptor Schematic



## 9. Adaptor Linking



# Packing For Shipping And Disassembly Procedure

## 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)



**Figure 1**



**Figure 2**

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

1.4 Join the cushions to the monitor then place all the accessories into the carton. As last, close the carton and seal it with tape.

(Figure 4)



**Figure 3**



**Figure 4**



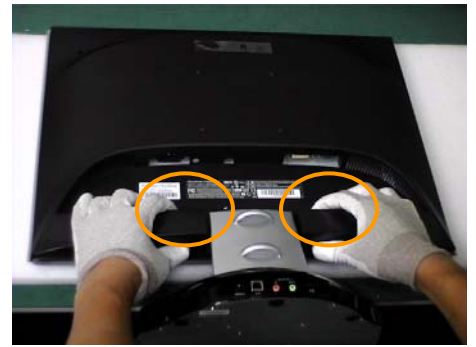
## Monitor Assembly and Disassembly

### 1 Separate Stand Assy

#### 1 Remove Stand Cover

##### Step 1 :

Remove the Stand Covers.



##### Step 2 :

Loose and remove 6 screws



##### Step4 :

Remove the Stand Assy



##### Step 5 :

Completed.



## 2 Separate Rear Cover (Rear Case Assy)

Separate Bezel hooks to take Bezel and Rear Cover apart.

### Step 1 :

Loose and remove 3 screws.



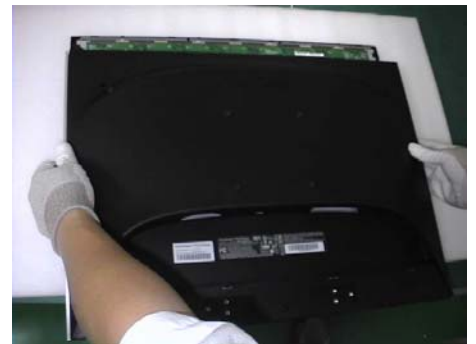
### Step 2 :

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 3 :**

Remove 4 pieces of Backlight wires.



**Step 4 :**

Loose and remove 4 screws.



**Step 5 :**

Loose and remove 2 screws.



**Step 6 :**

Loose and remove 4 screws.



**Step 7 :**

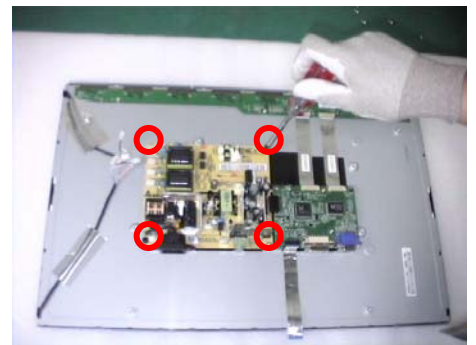
Remove the PCBA Cover



### 3.2 Remove Power Board and AD Board

**Step 1 :**

Loose and remove 4 screws.



**Step 2 :**

Remove Lips Board



**Step 3 :**

Remove 2 pieces of FFCs.



**Step 4 :**

Remove the FFC.



**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 FFC.



### Step 4 :

Insert 2 pieces of FFCs .



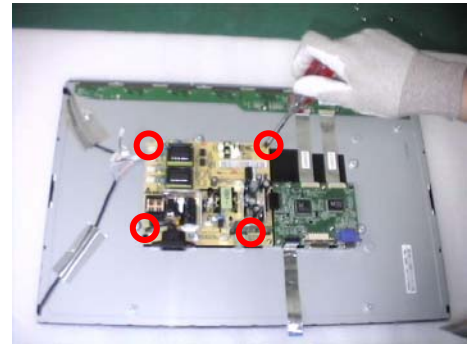
### Step 5 :

Insert new Lips Board.



**Step 6 :**

Fasten 4 fixed screws.



**Step 7 :**Completed.

**5. Remove OSD Board**

**Step 1 :**

Separate both Audio Cable.



**Step 2 :**

Take OSD Board apart.



**Step 3:**

Completed.





## 6.Change New OSD Board

### Step 1 :

Place New OSD Board.



### Step 2 :

Insert Audio cable to connectors of New OSD Board.



### Step 3:

Completed.

## 7. Add Cover to AD PCB Heatsink

### Step 1 :

Join the PCB Cover.



### Step 2 :

Fasten 4 fixed screws.



**Step 3 :**

Fasten 2 fixed screws



**Step 4 :**

Fasten 4 fixed screws.



**Step 5 :**

Insert 4 pieces of Backlight wires.



**Step 6 :**

Join LCD module and remove bezel.



**Step 7 :**

Insert FFC.



**Step 8 :** Completed.



## 8. Rear Assy & Stand Assembly

**Step 1 :**  
Place Rear Cover.

**Step 2 :**  
Fasten 3 fixed screws.

**Step 3 :**  
Place the Stand Assy.

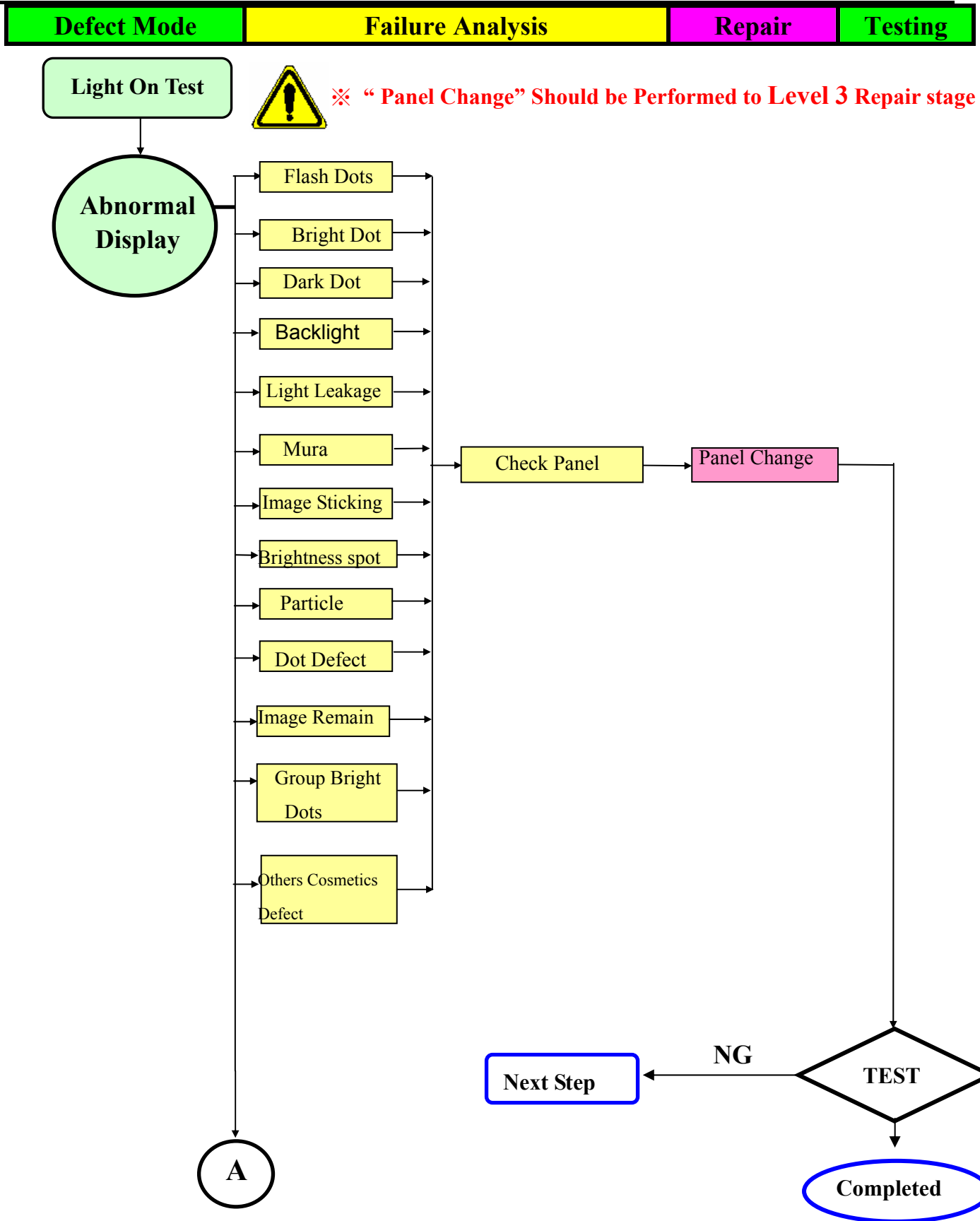
**Step 4 :**  
Fasten 6 fixed screws.

**Step 5 :**  
Join the Stand Covers.

**Step 6 :** Completed.

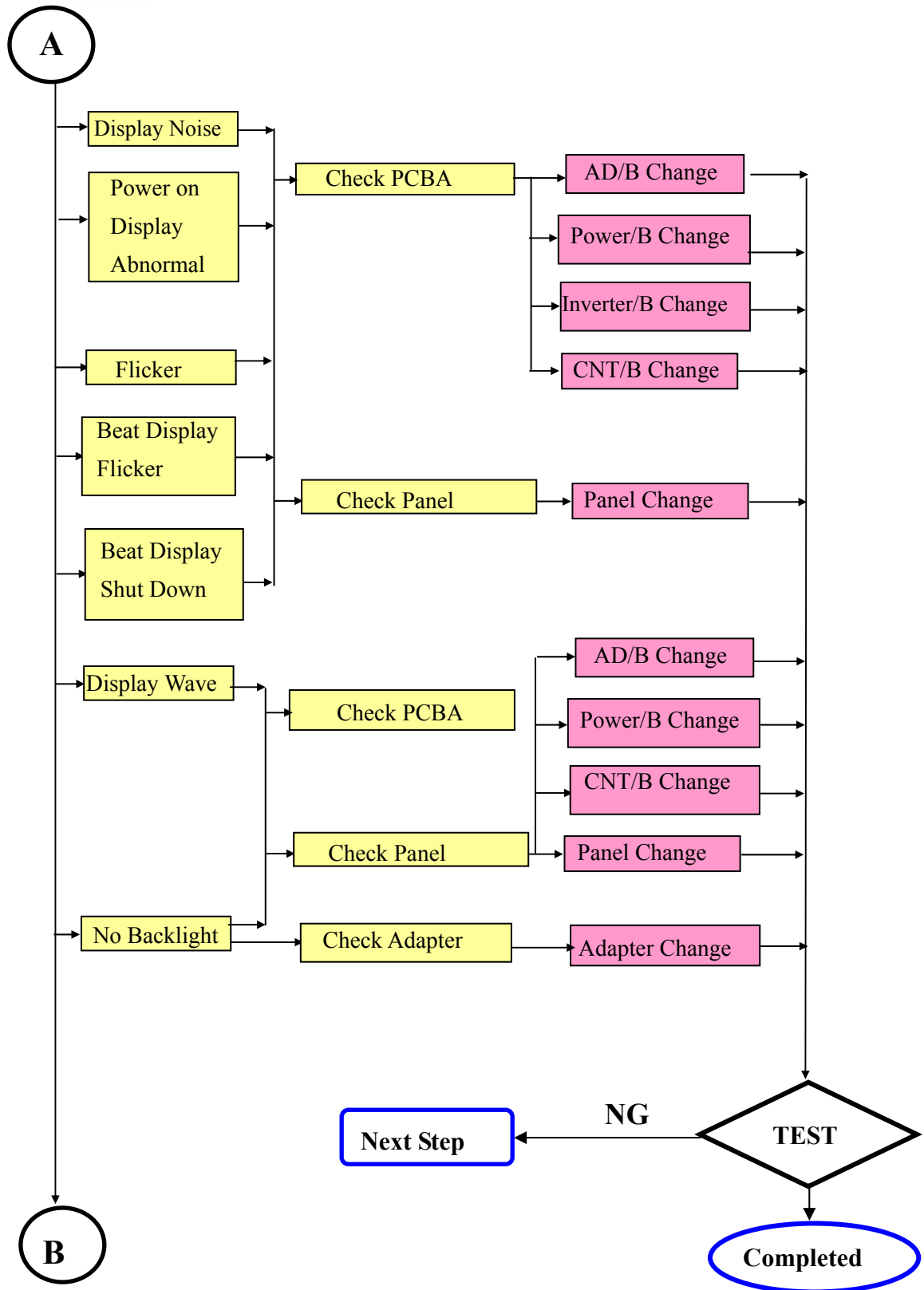


## 6. Troubleshooting Flow Chart



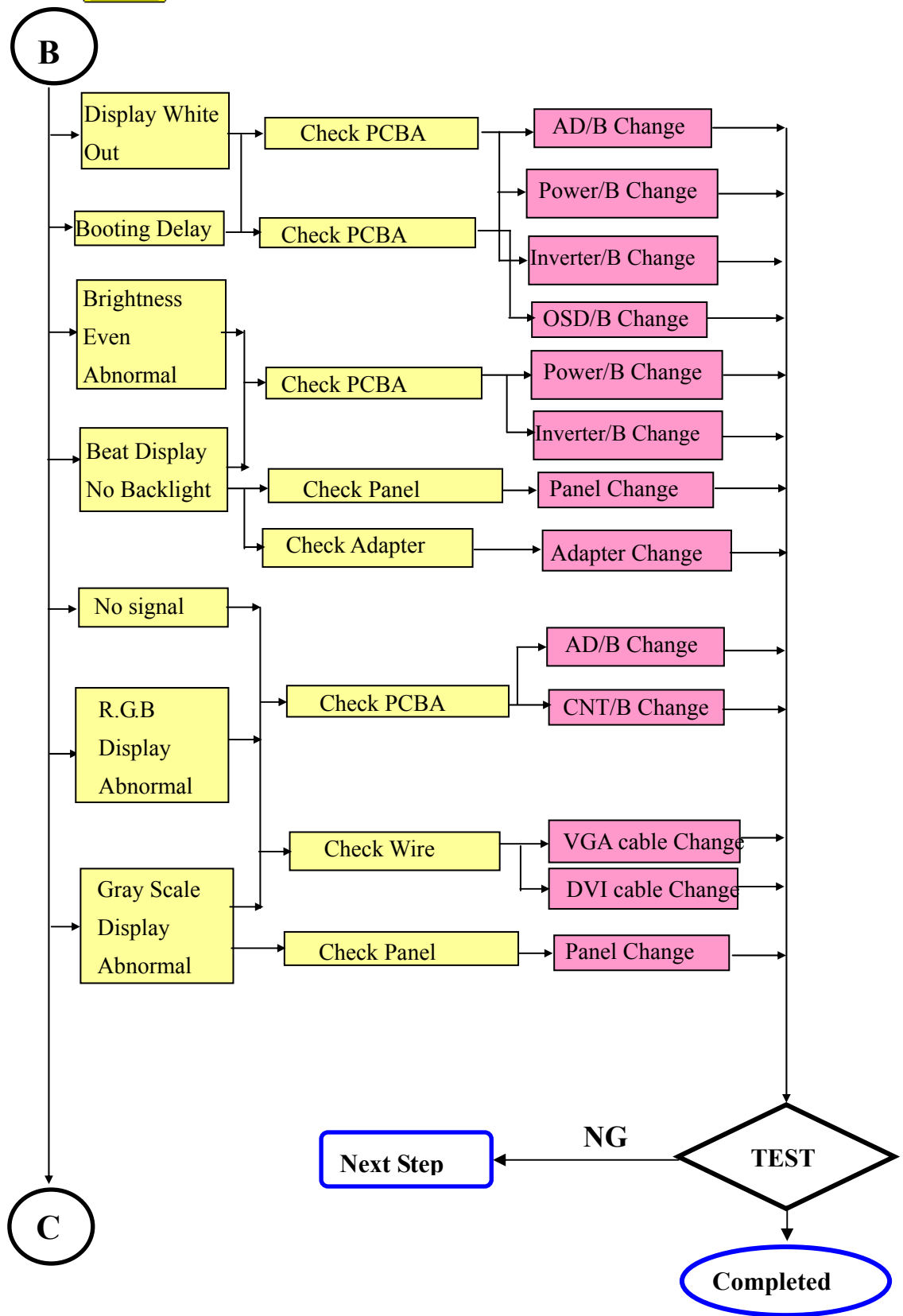


※ “Panel Change” Should be Performed to Level 3 Repair stage



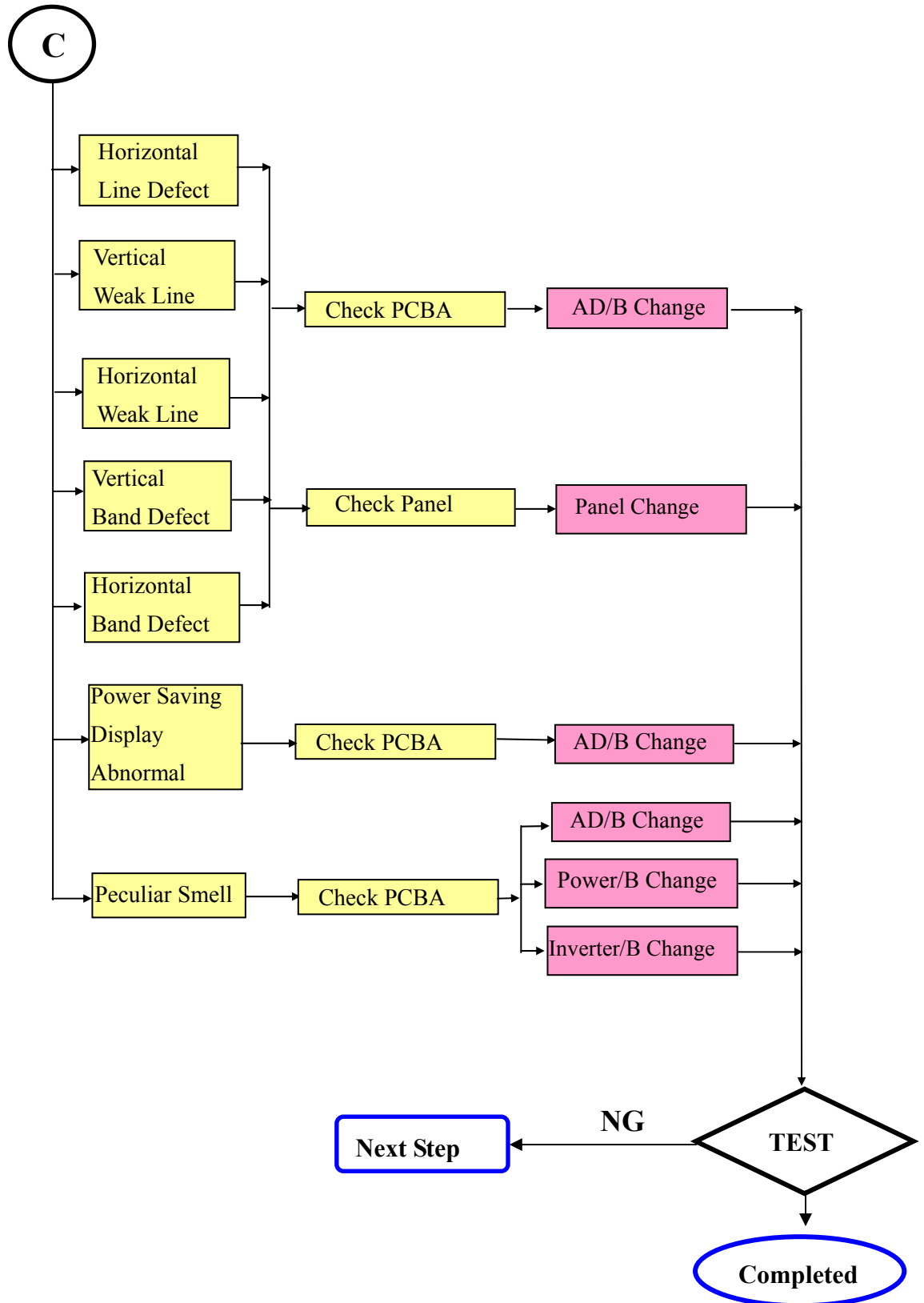


※ “Panel Change” Should be Performed to Level 3 Repair stage



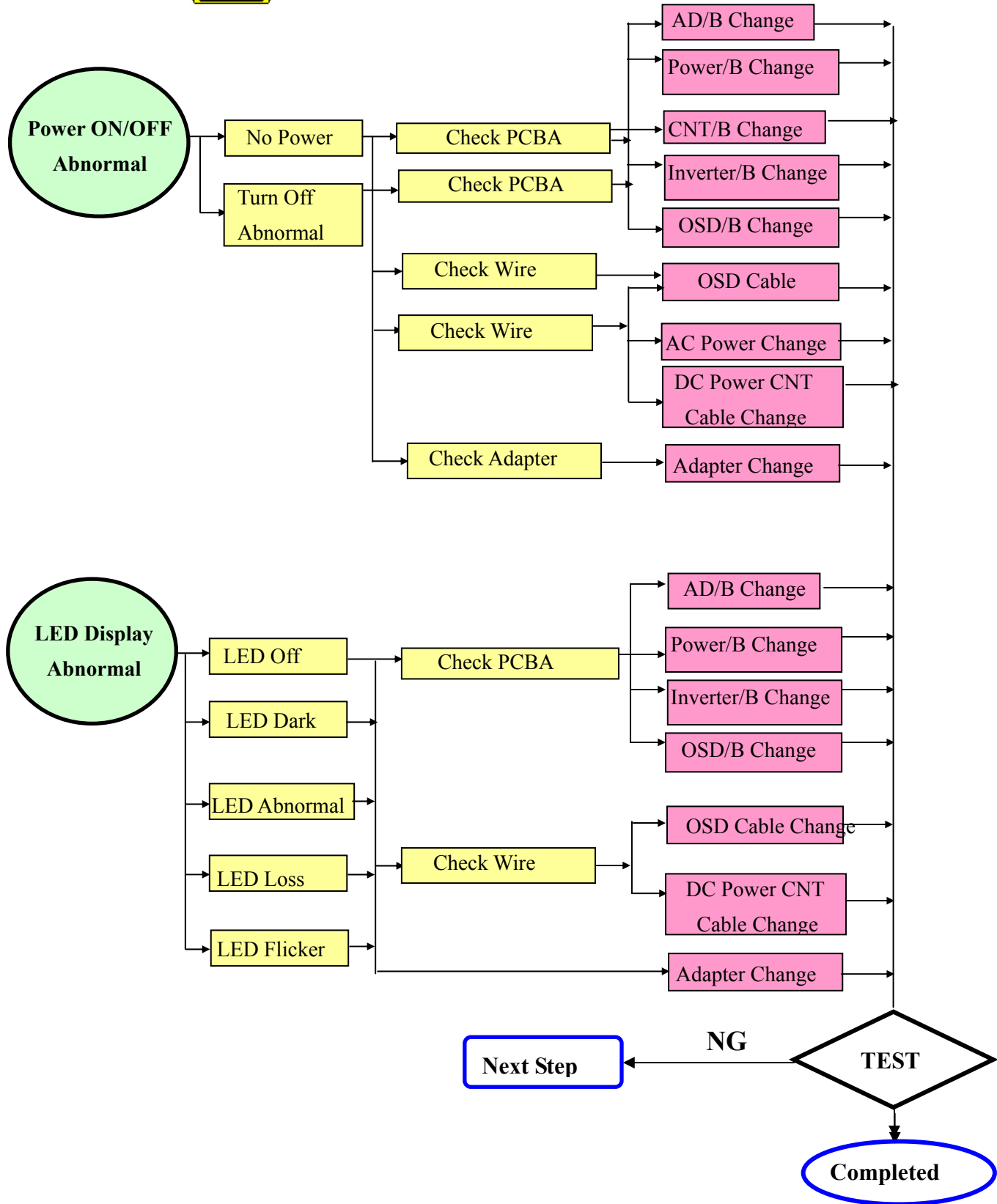


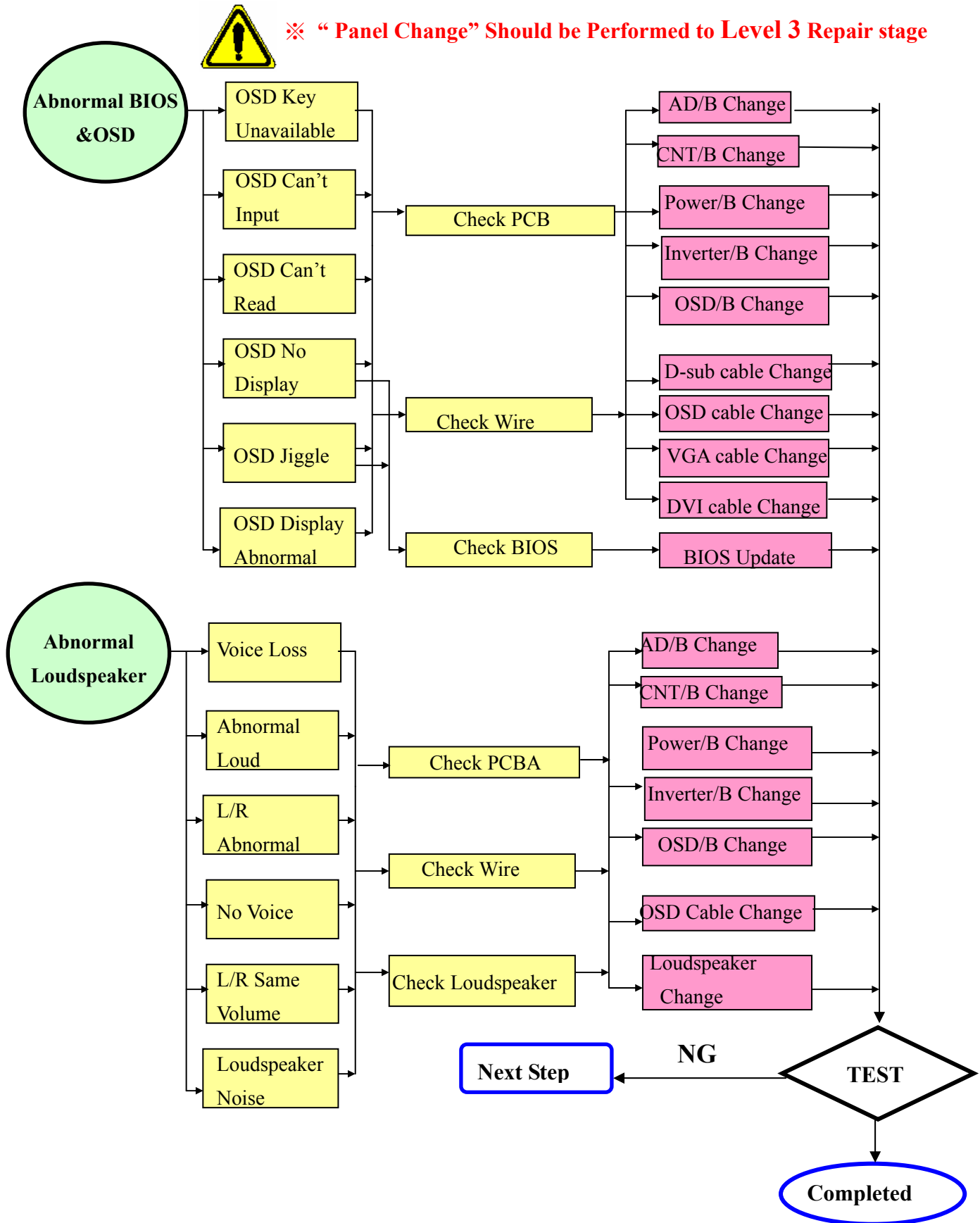
※ “Panel Change” Should be Performed to Level 3 Repair stage





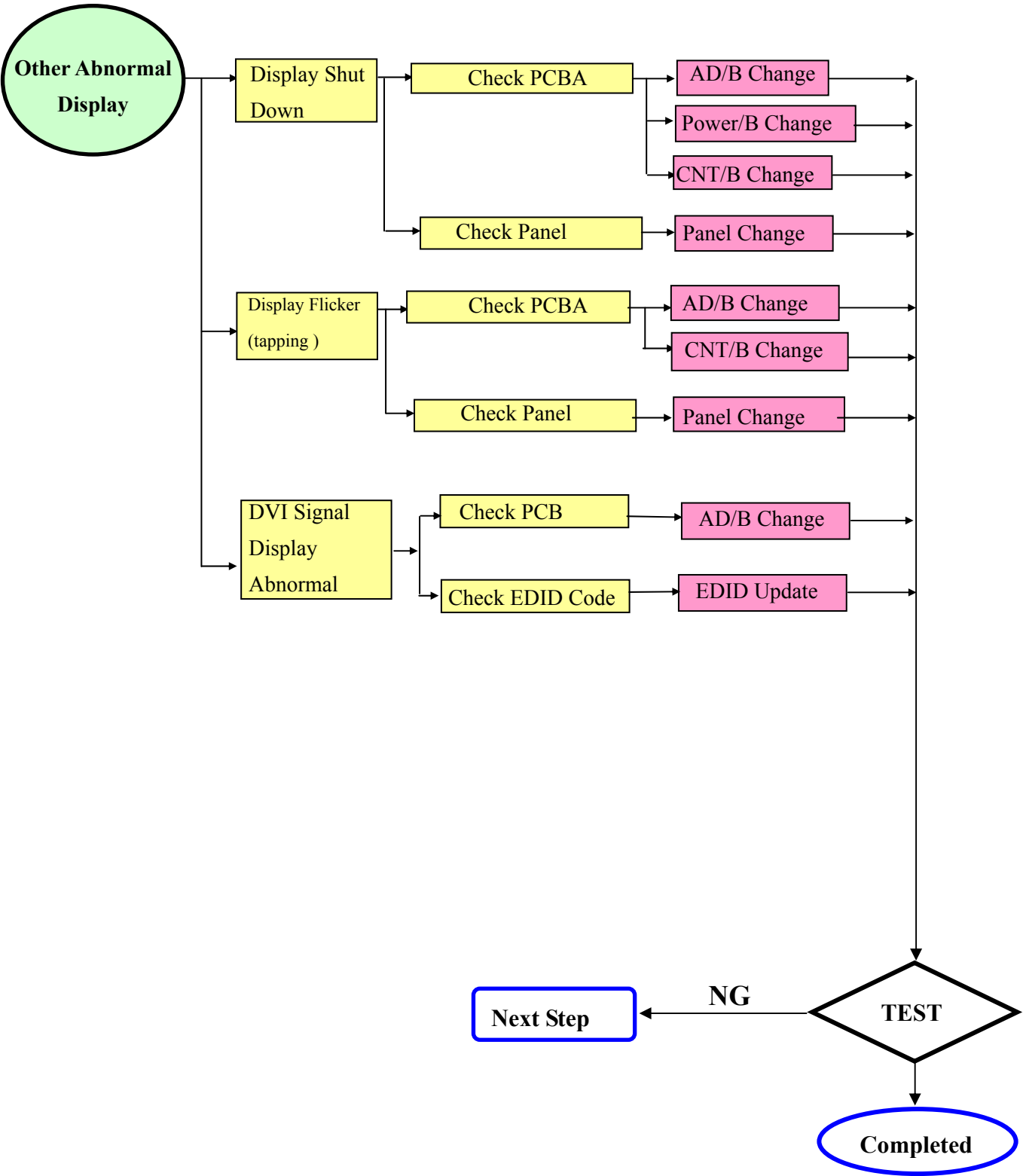
※ “Panel Change” Should be Performed to Level 3 Repair stage







※ “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 (VX2245wm-1)

ViewSonic Model Number: VS11349

Rev: 1a

Serial No. Prefix: QD0

| Item | Description                                        | ECR/ECN | ViewSonic P/N | Ref. P/N   | Universal number# |
|------|----------------------------------------------------|---------|---------------|------------|-------------------|
| 1    | <b>Accessories:</b>                                |         |               |            |                   |
| 2    | Power Cord, LP-53 & VCTF 0.75mm <sup>2</sup> 3C    |         | A-00005071    | 32-D002330 |                   |
| 3    | <b>PC Board Assembly:</b>                          |         |               |            |                   |
| 4    | Power Supply Board (Lips W/ Audio Vo.7)            |         | B-00008026    | 27-D009542 |                   |
| 5    | Main Board Rev.04                                  |         | B-00008027    | 35-D010627 |                   |
| 6    | PCBA Rev.02, ODM                                   |         | B-00008028    | 35-D010238 |                   |
| 7    | <b>Cabinets:</b>                                   |         |               |            |                   |
| 8    | Front Panel (Bezel)                                |         | C-00008041    | 40-D010959 |                   |
| 9    | Back Cover                                         |         | C-00008042    | 40-D010948 |                   |
| 10   | Cover Hinge - Right                                |         | C-00008142    | 40-D012465 |                   |
| 11   | Cover Hinge - Left                                 |         | C-00008143    | 40-D012466 |                   |
| 12   | Base Assembly - (Stand Seat Assy)                  |         | C-00008144    | 40-D013541 |                   |
| 13   | <b>Cables:</b>                                     |         |               |            |                   |
| 14   | DVI Cable, S/L, 1.8M, W/2F                         |         | CB-00002083   | 32F0000004 |                   |
| 15   | Audio Cable (Accessory Black, 28AWG)               |         | CB-00005678   | 32F2818011 |                   |
| 16   | Accessory Cable, D-Sub, (30AWG)                    |         | CB-00005851   | 32-D002132 |                   |
| 17   | Flat Cable (FFC 36 Pins)                           |         | CB-00008014   | 32-D008479 |                   |
| 18   | Flat Cable (FFC 15 Pins)                           |         | CB-00008015   | 32-D011077 |                   |
| 19   | <b>Documentation:</b>                              |         |               |            |                   |
| 20   | Safety Label - 149 mmx29 mm                        |         | DC-00008137   | 77-D013049 |                   |
| 21   | Carton Label - 76.2 mmx76.2 mm                     |         | DC-00008138   | 77-D013048 |                   |
| 22   | CD-Rom                                             |         | DC-00008139   | 76-D013047 |                   |
| 23   | <b>Hardware:</b>                                   |         |               |            |                   |
| 24   | Screw, 3,P=0.5 mm,L=4 mm,Pan Head                  |         | HW-00000553   | 42A9930008 |                   |
| 25   | Screw, 3,P=0.5 mm,L=4 mm,Pan Head                  |         | HW-00000553   | 42A9930008 |                   |
| 26   | Screw, M3*P0.5*6, Steel                            |         | HW-00000555   | 42A9930014 |                   |
| 27   | Screw, M4, P=0.7 mm, L=8 mm Round Head             |         | HW-00004042   | 42-D000649 |                   |
| 28   | Screw, 4,P=0 mm,L=11.8 mm,Hexagon Stand Off,Socket |         | HW-00006041   | 42A9940007 |                   |
| 29   | Screw, M3,P=0.5 mm,L=2.5 mm                        |         | HW-00008002   | 42-D009237 |                   |
| 30   | Screw, M3,P=1.27 mm,L=10 mm                        |         | HW-00008003   | 42A9930015 |                   |
| 31   | <b>Miscellaneous:</b>                              |         |               |            |                   |
| 32   | Tape Security, OPP, L900xW50x0.045mm               |         | M-00000560    | 7345511002 |                   |
| 33   | Decoration Plate                                   |         | M-00008031    | 40-D013544 |                   |
| 34   | <b>Packing Material:</b>                           |         |               |            |                   |
| 35   | PE Bag, 600 mmx650 mmx0.13 mm                      |         | P-00008033    | 78-D009624 |                   |
| 36   | Foam - (Left)                                      |         | P-00008139    | 78-D013535 |                   |
| 37   | Foam - (Right)                                     |         | P-00008140    | 78-D013545 |                   |
| 38   | Craft Box                                          |         | P-00008141    | 78-D013534 |                   |
| 39   | <b>Plastics:</b>                                   |         |               |            |                   |
| 40   | Panel Cover (Panel Protector Film)                 |         | PL-00008008   | 73-D009538 |                   |

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 (VX2245wm-1)

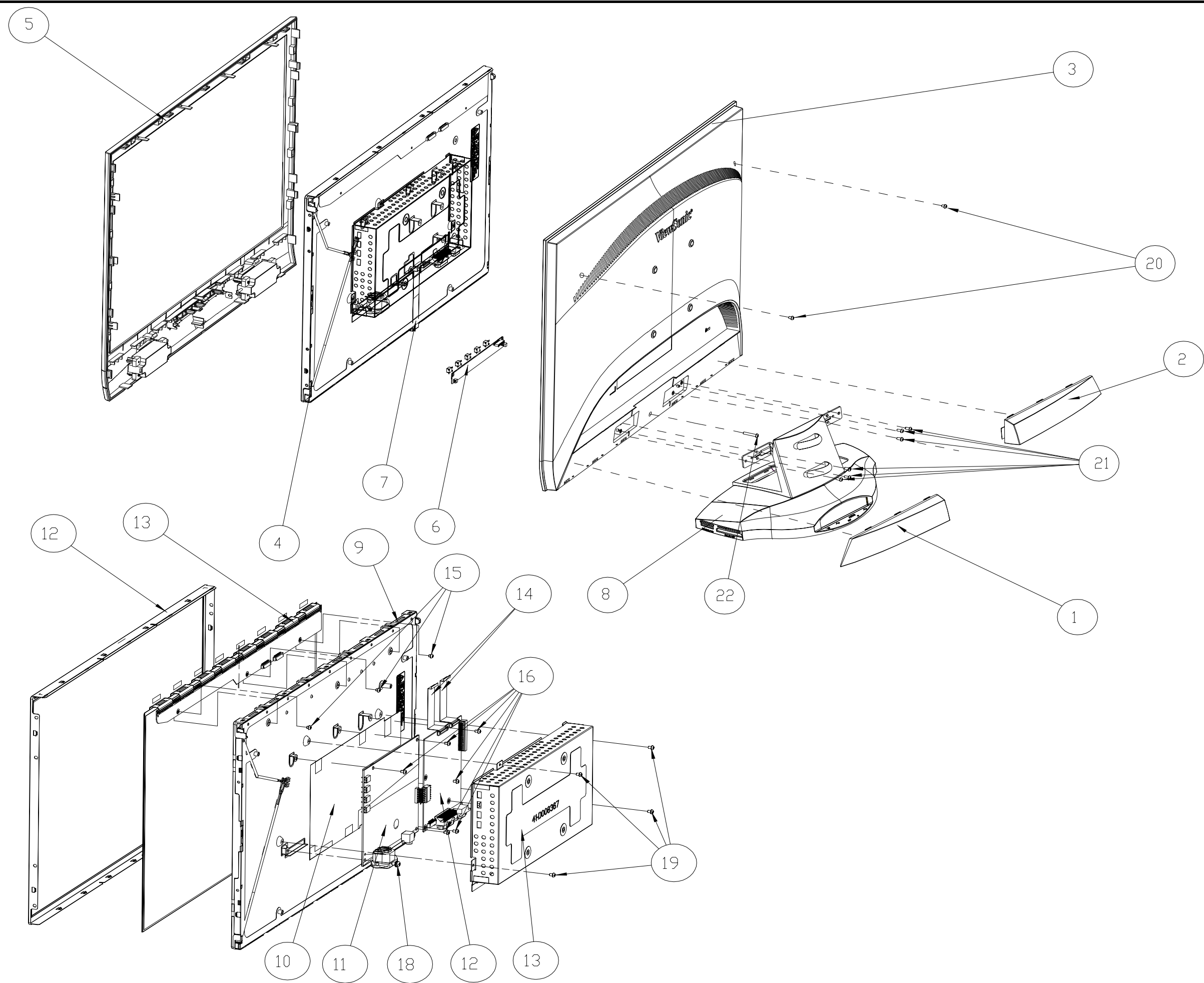
ViewSonic Model Number: VS11349

Rev: 1a

Serial No. Prefix: QD0

| Item | ViewSonic P/N | Ref. P/N   | Description                                                                                                                                                 | Location | Universal number# | Q'ty   |
|------|---------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|--------|
| 1    | N/A           | 73-C000047 | ACF, COG, AC-8405Z-23 1.5mmX100M, 100000 mmx1.5 mm, Hitachi Chemical, COG-ACF, Green I                                                                      |          |                   | 0.0028 |
| 2    | N/A           | 36-D006411 | Driver IC, COG, Scan, M170E5-L09, HX8653-A000PD400, 240/263/256Channel, Himax, (HX8633 shrank version), Green II                                            |          |                   | 4      |
| 3    | N/A           | L4M003XXXX | 22"wide_TN, Photo Spacer, Corning 0.7mm Glass, Resin/BM(Panel Base)                                                                                         |          |                   | 1      |
| 4    | N/A           | L4M003XXBI | 22"wide_TN, Photo Spacer, Corning 0.7mm Glass, Resin/BM(Sheet Base)                                                                                         |          |                   | 0.0833 |
| 5    | N/A           | 74-D007599 | Polarizer, TFT, Degree 135, 478.16 mmx300.2 mmx0.215 mm, XT300CMM220Z1H0B, M220Z1, LG Chem, LG HCR EWW                                                      |          |                   | 1      |
| 6    | N/A           | 74-D007598 | Polarizer, TFT, Degree 135, 478.16 mmx300.2 mmx0.215 mm, XT300CMM220Z1H0B, M220Z1, LG Chem, LG HCR EWW                                                      |          |                   | 1      |
| 7    | N/A           | 36-D007038 | Driver IC, COF, Data, M220Z1-L01, HX8019-A07BCBC5, COF, 6 bit, 642Channel, Himax, Green II                                                                  |          |                   | 8      |
| 8    | N/A           | 73-D008216 | ACF, COF, AC-4255U-16, 200000 mmx1.2 mm, Hitachi Chemical, Green I                                                                                          |          |                   | 0.0025 |
| 9    | N/A           | 73-D002676 | ACF, PCB, AC-9825R-35, 100000 mmx1.5 mm, Hitachi Chemical, PCB-ACF, Green                                                                                   |          |                   | 0.005  |
| 10   | N/A           | 35-D010045 | PCBA for , A220Z1-Z01-H, A220Z1-Z01-H-X, 1101-03, Rev.04, USI/ITC, ODM, Green II                                                                            |          |                   | 1      |
| 11   | N/A           | 7349951002 | Silicone, TORAY/-9187L, 330g                                                                                                                                |          |                   | 0.5    |
| 12   | HW-00000553   | 42A9930008 | SCREW, 3, P=0.5 mm, L=4 mm, Pan Head, Phillips Cross Recess, Hama Naka Motogawa Hama Naka Shoukin Shihō Shin Yee Shye Ching, Green                          |          |                   | 13     |
| 13   | HW-00006041   | 42A9940007 | SCREW, 4, P=0 mm, L=11.8 mm, Hexagon Stand Off, Socket, Shihō Shin Yee Shye Ching Hama Naka Motogawa, Green I                                               |          |                   | 4      |
| 14   | 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      |
| 15   | N/A           | 41-D007402 | Metal Frame Front, M220Z1-L01, SECC 0.6t, Fomgder/CLT_Metal, Green II                                                                                       |          |                   | 1      |
| 16   | N/A           | 44-D008027 | Backlight Unit, A220Z1, Forhouse/ROE, Green II                                                                                                              |          |                   | 1      |
| 17   | N/A           | 41-D008024 | Cover AD Assy, A190A2, SECC, Jiin Ming, Left_Side 4 connector_VESA100*100, Green II                                                                         |          |                   | 1      |
| 18   | CB-00008014   | 32-D008479 | FFC, CFC2128/862P060068D, 36 Pins, Tenssure/Hung Fu, AL foil, Green I                                                                                       |          |                   | 2      |
| 19   | HW-00008002   | 42-D009237 | SCREW, M3, P=0.5 mm, L=2.5 mm, Pan Head, Phillips Cross Recess, Shye Ching, Green I                                                                         |          |                   | 3      |
| 20   | B-00008026    | 27-D009542 | Lips With Audio, DAC-19M009 AF, 01 A, 5 V/3 A, 13.8 V0.7 A, I TYPE, 7 mA, 1710 V, Delta Dongguan_LIPS, Green II                                             |          |                   | 1      |
| 21   | B-00008027    | 35-D010627 | PCBA for , A220Z1-Z01-H, A170E2-E03-H-S6, 1101-02, Rev.04, ITC USI, ODM, RTD2120S-LF, Green II                                                              |          |                   | 1      |
| 22   | N/A           | 10-D012854 | Software (EDID_DVI), A220Z1, VSCBB1ED00, VSC, Checksum(E0), VX2245wm, Digital Port, Green II                                                                |          |                   | 1      |
| 23   | N/A           | 10-D012855 | Software (EDID_D-SUB), A220Z1, VSCBB1EA00, VSC, Checksum(8B), VX2245wm, Analog Port, Green II                                                               |          |                   | 1      |
| 24   | HW-00000553   | 42A9930008 | SCREW, 3, P=0.5 mm, L=4 mm, Pan Head, Phillips Cross Recess, Hama Naka Motogawa Hama Naka Shoukin Shihō Shin Yee Shye Ching, Green                          |          |                   | 2      |
| 25   | 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                          |          |                   | 6      |
| 26   | HW-00008003   | 42A9930015 | SCREW, M3, P=1.27 mm, L=10 mm, Pan Head, Phillips Cross Recess, Green                                                                                       |          |                   | 1      |
| 27   | B-00008028    | 35-D010238 | PCBA for , A220Z1-Z01-H, A220Z1-Z01-H-K2, 1101-02, Rev.02, ITC USI, ODM, Green II                                                                           |          |                   | 1      |
| 28   | C-00008041    | 40-D010959 | Bezel Assy, A220Z1-H05, Black(J01-J91A11B5), Fuking, SPK, Green II                                                                                          |          |                   | 1      |
| 29   | C-00008042    | 40-D010948 | Rear Assy, A220Z1-H05, Silver(TY4818A)/Black(M1077), Fuking, audio_in+DVI-D, Green II                                                                       |          |                   | 1      |
| 30   | CB-00008015   | 32-D011077 | FFC, FFC1DDX-A186S1A, 15 Pins, Tenssure_FFC, A220Z1-H05, Green II                                                                                           |          |                   | 1      |
| 31   | C-00008142    | 40-D012465 | Cover Hinge, A220Z1-H08, ABS, PA-757, ORIGINAL, Fuking, RIGHT, Green II                                                                                     |          |                   | 1      |
| 32   | C-00008143    | 40-D012466 | Cover Hinge, A220Z1-H08, ABS, PA-757, ORIGINAL, Fuking, LEFT, Green II                                                                                      |          |                   | 1      |
| 33   | C-00008144    | 40-D013541 | Stand Seat Assy, A220Z1-H08, ABS, Black(J01)/Silver(877C), ViewSonic Display Limited, VSC P/N C-00006107, Green I                                           |          |                   | 1      |
| 34   | PL-00008008   | 73-D009538 | Panel Protector Film, A220Z1-H03, XG-536 T=0.1mm, Just Enter, BLANK                                                                                         |          |                   | 1      |
| 35   | N/A           | 77-D013043 | SN Label for , A220Z1-H08, 50 mmx25 mm, Kunshan Hwakuan Chang Huang, VSC_VX2245wm, Green II                                                                 |          |                   | 1      |
| 36   | DC-00008137   | 77-D013049 | Safety Label for , A220Z1-H08, 149 mmx29 mm, Kunshan Hwakuan Chang Huang, VSC_VX2245wm, Green II                                                            |          |                   | 1      |
| 37   | N/A           | 7841795141 | Corner Protector, paper, 50 mmx50 mmx900 mm, Green I                                                                                                        |          |                   | 0.167  |
| 38   | DC-00000586   | 7741999141 | Module Label, A190E2-H03, 75 mm, 40 mm, Non Green                                                                                                           |          |                   | 0.042  |
| 39   | M-00000560    | 7345511002 | Tape, A170E1-H0P, 900 mmx50 mmx0 mm, Symbio, OPI                                                                                                            |          |                   | 0.005  |
| 40   | N/A           | 78-D004864 | Corner Protector, Paper, M190A1, 50 mmx50 mmx1780 mm, Jonin/NingBo Ming-Chan_EPST:3mm, Green II                                                             |          |                   | 0.167  |
| 41   | P-00008033    | 78-D009624 | Bag, 600 mmx650 mmx0.13 mm, PE Foam, 650, Huang Jyui, Green I                                                                                               |          |                   | 1      |
| 42   | DC-00008139   | 76-D013047 | MENU for A220Z1-H08, Complex, 4C, Car Tong Kunshan Yi Ching, VSC_VX2245wm CD-ROM, Green II                                                                  |          |                   | 1      |
| 43   | DC-00008138   | 77-D013048 | Carton Label for , A220Z1-H08, 76.2 mmx76.2 mm, Chang Huang Kunshan Hwakuan, VSC_VX2245wm, Green II                                                         |          |                   | 1      |
| 44   | P-00008140    | 78-D013545 | Cushion, A220Z1-H08, EPS, WHITE, 260 mmx195 mmx590 mm, Li Ta NingBo Ming-Chan_EPS, EPS foam(Right), Green II                                                |          |                   | 1      |
| 45   | M-00008031    | 40-D013544 | Decoration Assy, A220Z1-H08, ABS, Silver(877C), ViewSonic Display Limited, VSC P/N C-00006107, Green I                                                      |          |                   | 1      |
| 46   | N/A           | 32-D013543 | Function Cable, E87647 30V, 1Pins-1Pins, ViewSonic Display Limited, VSC P/N C-00006107, Green I                                                             |          |                   | 1      |
| 47   | P-00008139    | 78-D013535 | Cushion, A220Z1-H08, EPS, WHITE, 260 mmx195 mmx590 mm, Li Ta NingBo Ming-Chan_EPS, EPS foam(left), Green II                                                 |          |                   | 1      |
| 48   | N/A           | 76-D013532 | MENU for A220Z1-H08, CD-ROM, 4C, ViewSonic Display Limited, VSC P/N:C-0006107, Green II                                                                     |          |                   | 1      |
| 49   | N/A           | 32-D013533 | Function Cable, 1Pins-2Pins, ViewSonic Display Limited, VSC P/N C-00006107, Green                                                                           |          |                   | 1      |
| 50   | P-00008141    | 78-D013534 | Carton, A220Z1-H08, 575 mmx255 mmx600 mm, Chen Yi Paper Shanghai Zhong Hao, VSC_VX2245wm, Green II                                                          |          |                   | 1      |
| 51   | N/A           | 27-D013549 | Adapter, 20AWGX2C 105 300V, 2 V, 0.8 A, 40 W, L=1800+/-50mm, BLACK, UL/BSMI, ViewSonic Display Limited, VSC P/N C-00006107, Green I                         |          |                   | 1      |
| 52   | N/A           | 78-D013559 | Pallet, A220Z1-H08, Wooden, 1180 mmx1080 mmx143 mm, Ming Li Hua Sun Paper Shanghai Hang Wei, Green II                                                       |          |                   | 0.042  |
| 53   | N/A           | 79-D013558 | Shipping Package Information for , A220Z1-H08, VSC                                                                                                          |          |                   | 1      |
| 54   | N/A           | 10-D013523 | Software (BIOS), A220Z1, 22Z1LR7000, VSC, Checksum(Bank1:0xFE, Bank2:0xC4), RSDS, RTD2120, Dual+Audio/Analog+Audio, Green II                                |          |                   | 1      |
| 55   | CB-00002083   | 32F0000004 | Accessory Cable, DVI, Black, Jceprocable, DVI-D(M) To DVI-D(M), S/L, W/2F, Green I                                                                          |          |                   | 1      |
| 56   | CB-00005678   | 32F2818011 | Accessory Cable, Audio, Black, Jhen Vei, A170E1-H01, 28AWG, Green I                                                                                         |          |                   | 1      |
| 57   | CB-00005851   | 32-D002132 | Accessory Cable, D-Sub, JV-4777, Black, Pins-Pins, Jhen Vei, 30AWG, Reduce Shield Rate, Green I                                                             |          |                   | 1      |
| 58   | A-00005071    | 32-D002330 | Power Cord, LP-53 & VCTF 0.75mm^2 3C 6 BLACK & LS-13J, BLACK, BSMI, 1800 mm, Linetek, Green I                                                               |          |                   | 1      |

8. Exploded Diagram and Exploded Parts List



## EXPLODED PARTS LIST (VX2245wm-1)

**ViewSonic Model Number: VS11349**

**Rev: 1a**

**Serial No. Prefix: QD0**

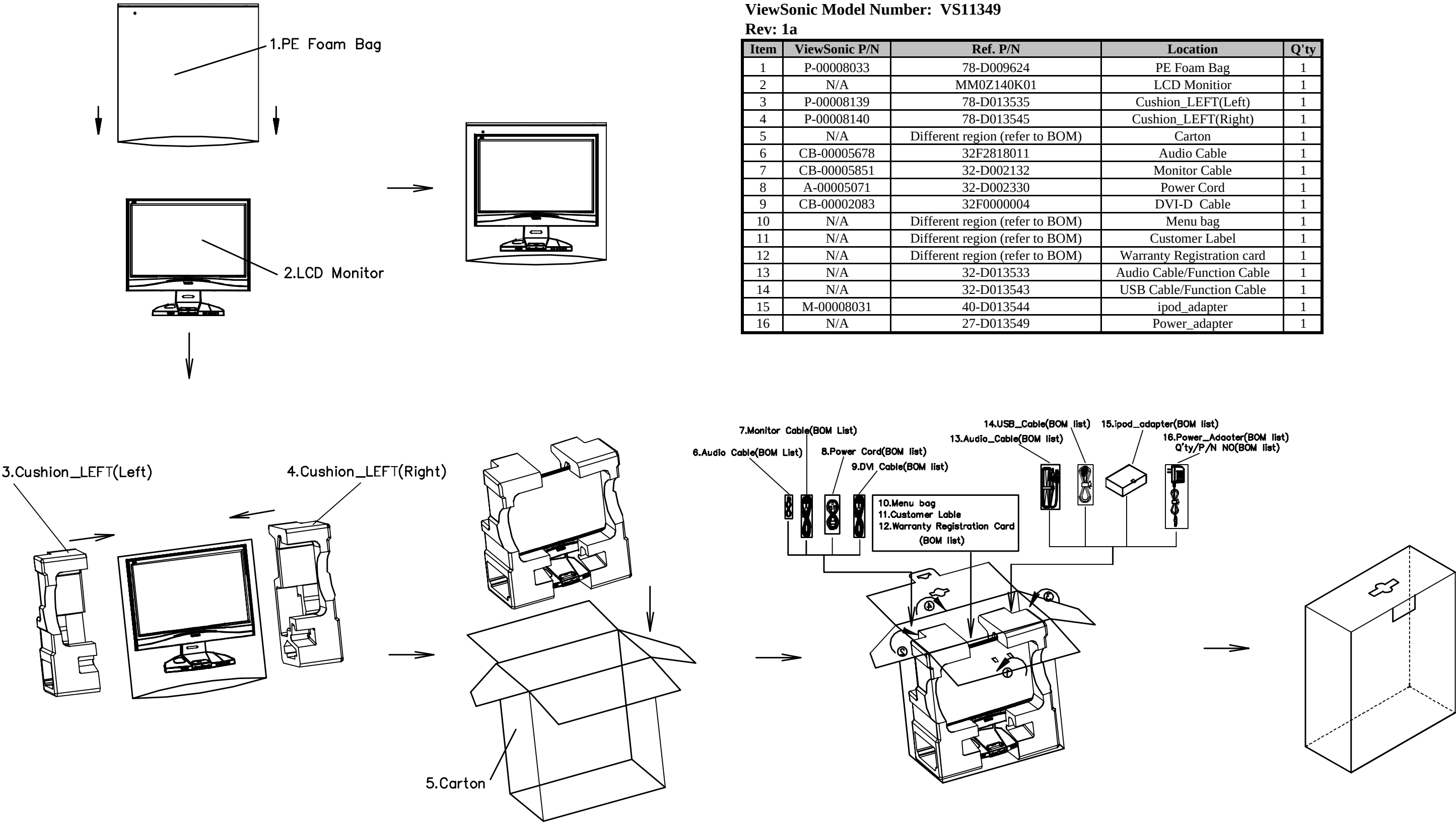
| Item | ViewSonic P/N  | Ref. P/N    | Description                            | Q'ty |
|------|----------------|-------------|----------------------------------------|------|
| 1    | C-00008143     | 40-D012466  | Cover Hinge,A220Z1-H08,LEFT            | 1    |
| 2    | C-00008142     | 40-D012465  | Cover Hinge,A220Z1-H08,RIGHT           | 1    |
| 3    | N/A            | 40-D010955  | Rear Assy,A220Z1-H05                   | 1    |
| 4    | N/A            | PM0ZFH0R00  | 22"Wide,Function BOM,D-sub+DVI+Audio   | 1    |
| 5    | N/A            | 40-D013832  | Bezel Assy,A220Z1-H05                  | 1    |
| 6    | N/A            | 35-D0110238 | PCBA_A220Z1-Z01-H-K2                   | 1    |
| 7    | CB-00008015    | 32-D011077  | FFC_15pin                              | 1    |
| 8    | C-00008144     | 40-D013541  | Stand Seat Assy,A220Z1-H08             | 1    |
| 9    | N/A            | 44-D009236  | Backlight Unit,A220Z1                  | 1    |
| 10   | MULTIPLE MATCH | N/A         | Maylar                                 | 1    |
| 11   | N/A            | 27-D008552  | Lips Without Audio                     | 1    |
| 12   | N/A            | 35-D009418  | PCBA for ,A220Z1-Z01-H,A170E2-E03-H-S6 | 1    |
| 13   | N/A            | 41-D005024  | Cover AD Assy                          | 1    |
| 14   | N/A            | 32-D009479  | FFC,36pin                              | 2    |
| 15   | HW-00008002    | 42-D009237  | SCREW,M3,P=0.5mm,L=2.5mm,Pan Head      | 3    |
| 16   | HW-00000553    | 42A9930008  | SCREW,M3,P=0.5mm,L=4mm,Pan Head        | 7    |
| 18   | HW-00004042    | 42-D000649  | SCREW,M4,P=0.7mm,L=8mm,Round Head      | 1    |
| 19   | HW-00000553    | 42A9930008  | SCREW,M3,P=0.5mm,L=4mm,Pan Head        | 4    |
| 20   | N/A            | 42A993008   | SCREW,M3,P=0.5mm,L=5mm,Pan Head        | 2    |
| 21   | HW-00000555    | 42A9930014  | SCREW,M3,P=0.5mm,L=8mm,Pan Head        | 6    |
| 22   | HW-00008003    | 42A9930015  | SCREW,M3,P=1.27mm,L=10mm,Pan Head      | 1    |

PACKING PART LIST (VX2245wm-1 )

ViewSonic Model Number: VS11349

Rev: 1a

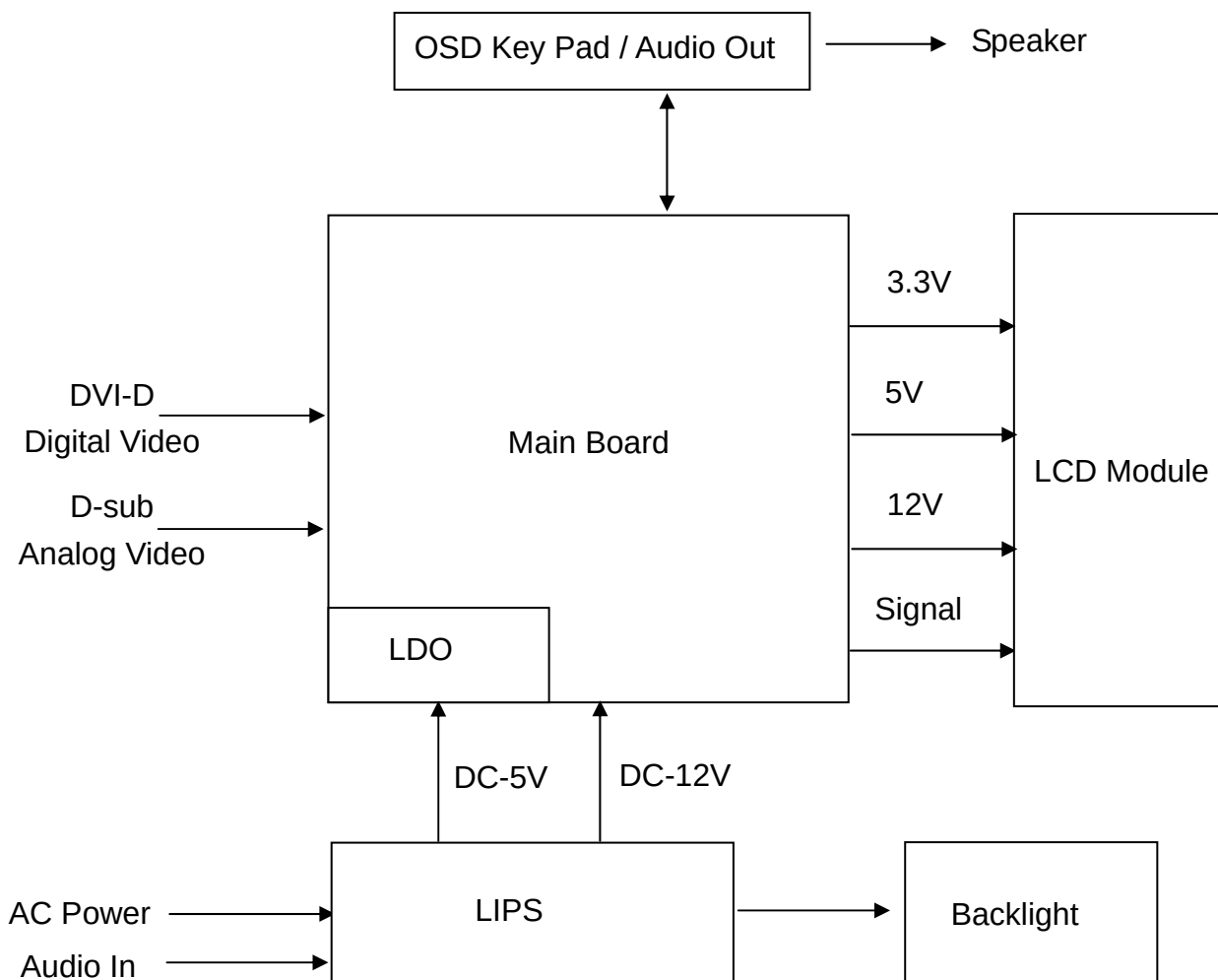
| Item | ViewSonic P/N | Ref. P/N                        | Location                   | Q'ty |
|------|---------------|---------------------------------|----------------------------|------|
| 1    | P-00008033    | 78-D009624                      | PE Foam Bag                | 1    |
| 2    | N/A           | MM0Z140K01                      | LCD Monitor                | 1    |
| 3    | P-00008139    | 78-D013535                      | Cushion_LEFT(Left)         | 1    |
| 4    | P-00008140    | 78-D013545                      | Cushion_LEFT(Right)        | 1    |
| 5    | N/A           | Different region (refer to BOM) | Carton                     | 1    |
| 6    | CB-00005678   | 32F2818011                      | Audio Cable                | 1    |
| 7    | CB-00005851   | 32-D002132                      | Monitor Cable              | 1    |
| 8    | A-00005071    | 32-D002330                      | Power Cord                 | 1    |
| 9    | CB-00002083   | 32F0000004                      | DVI-D Cable                | 1    |
| 10   | N/A           | Different region (refer to BOM) | Menu bag                   | 1    |
| 11   | N/A           | Different region (refer to BOM) | Customer Label             | 1    |
| 12   | N/A           | Different region (refer to BOM) | Warranty Registration card | 1    |
| 13   | N/A           | 32-D013533                      | Audio Cable/Function Cable | 1    |
| 14   | N/A           | 32-D013543                      | USB Cable/Function Cable   | 1    |
| 15   | M-00008031    | 40-D013544                      | ipod_adapter               | 1    |
| 16   | N/A           | 27-D013549                      | Power_adapter              | 1    |



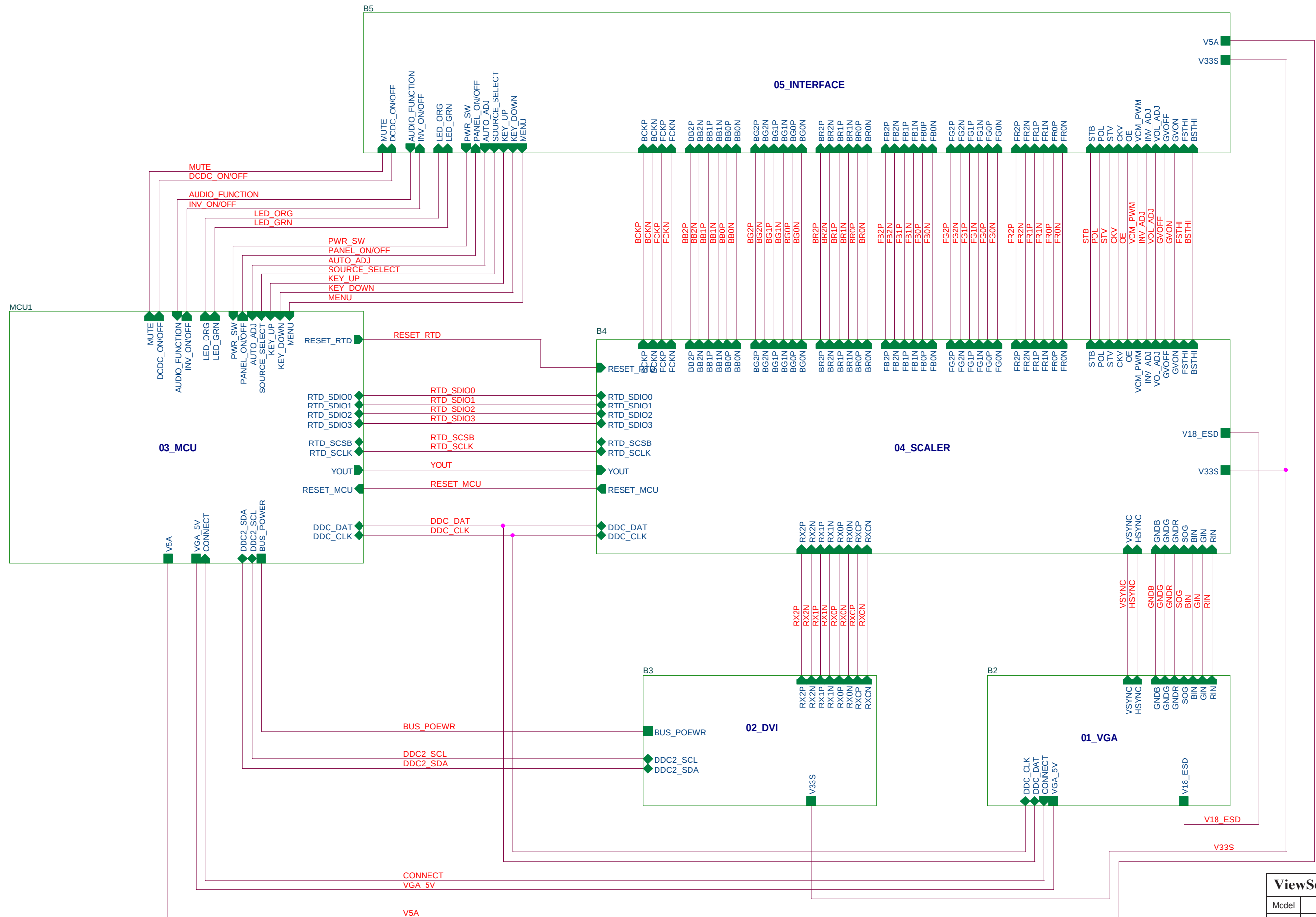
Carton dimensions:580(L)x260(W)x610(H)mm

## 9. Block Diagram

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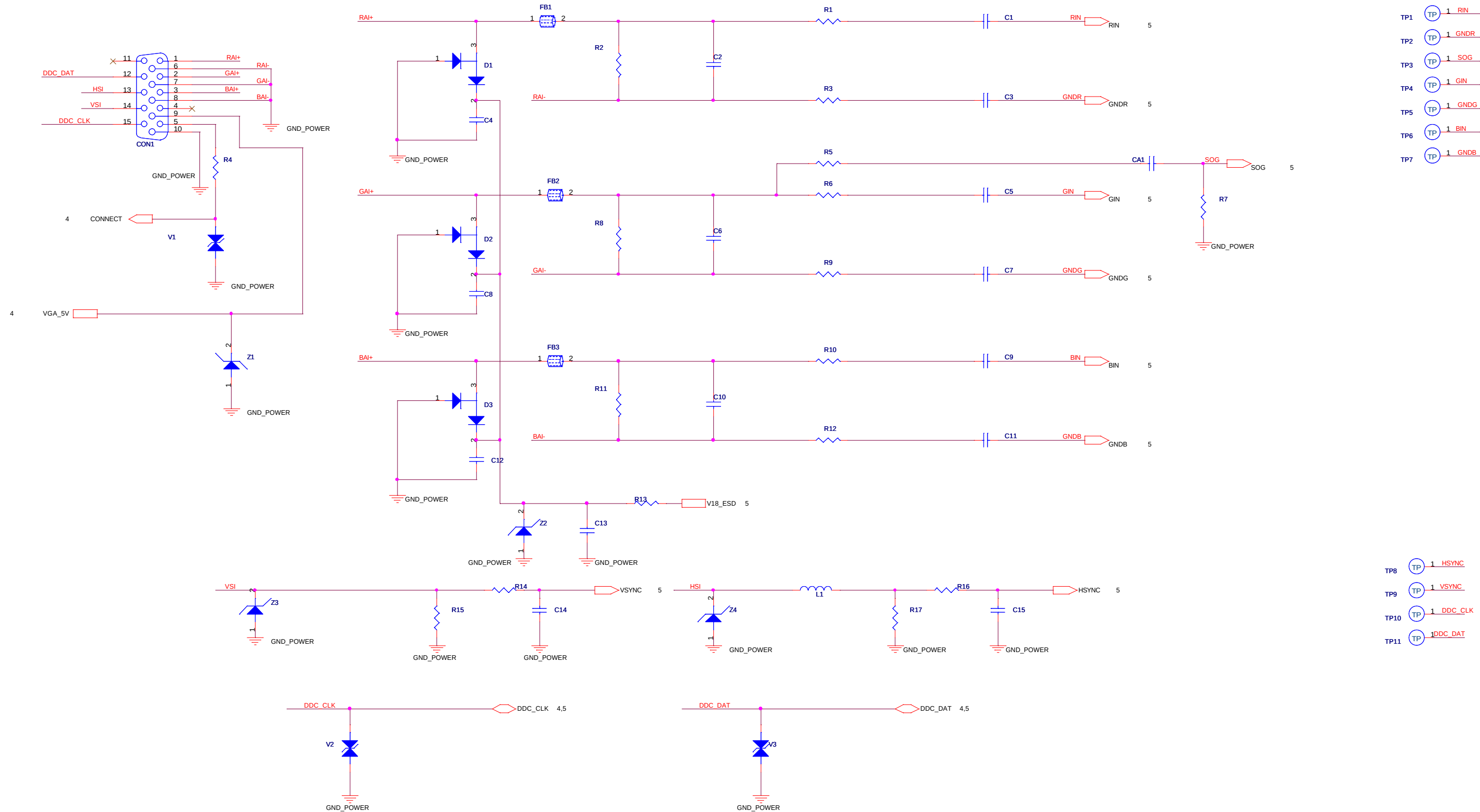


## 10. Schematic Diagrams



|                              |                      |      |
|------------------------------|----------------------|------|
| <b>ViewSonic Corporation</b> |                      |      |
| Model                        |                      |      |
| Title                        | <b>Block diagram</b> |      |
| Date                         |                      | Rev: |

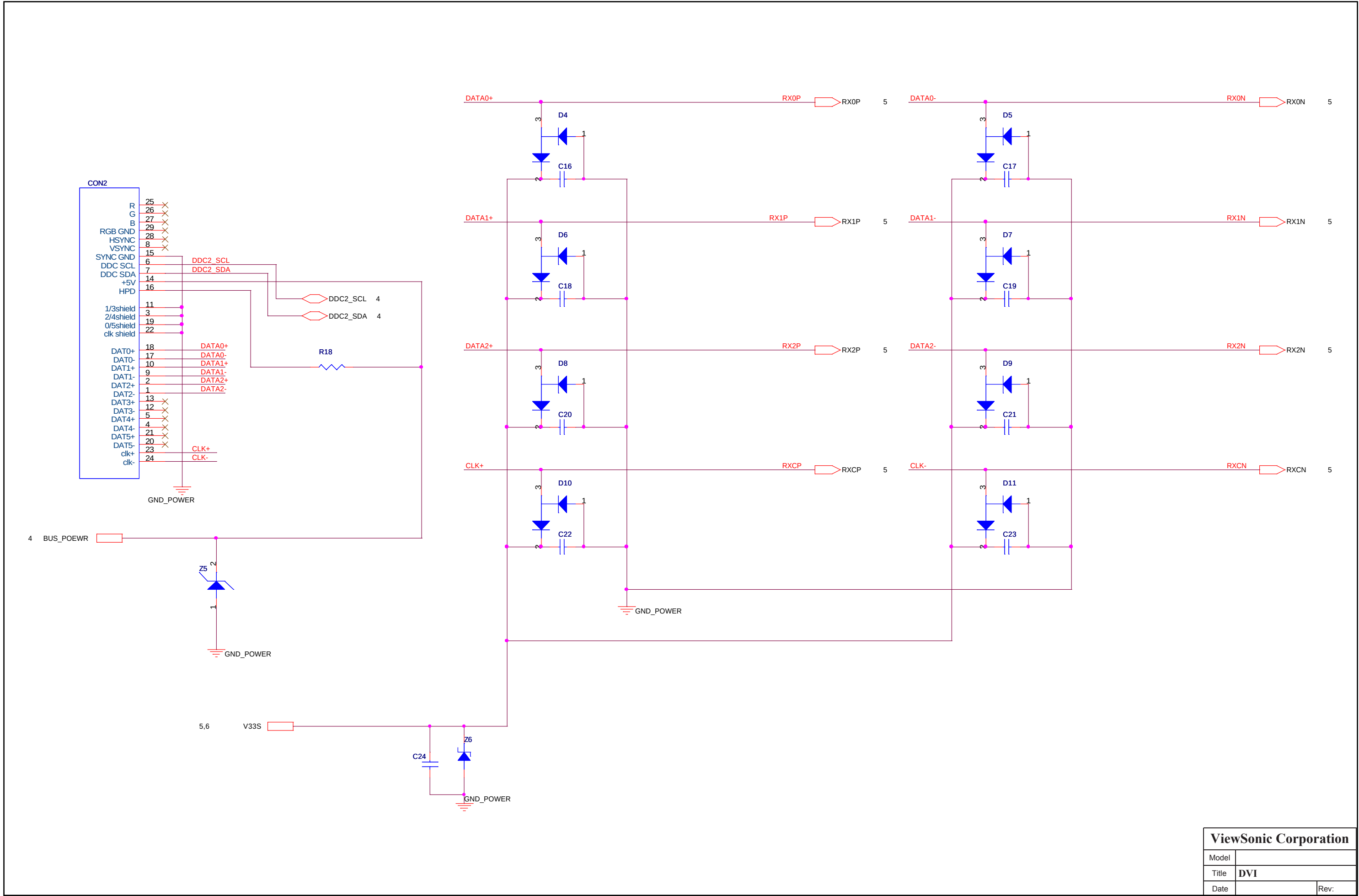




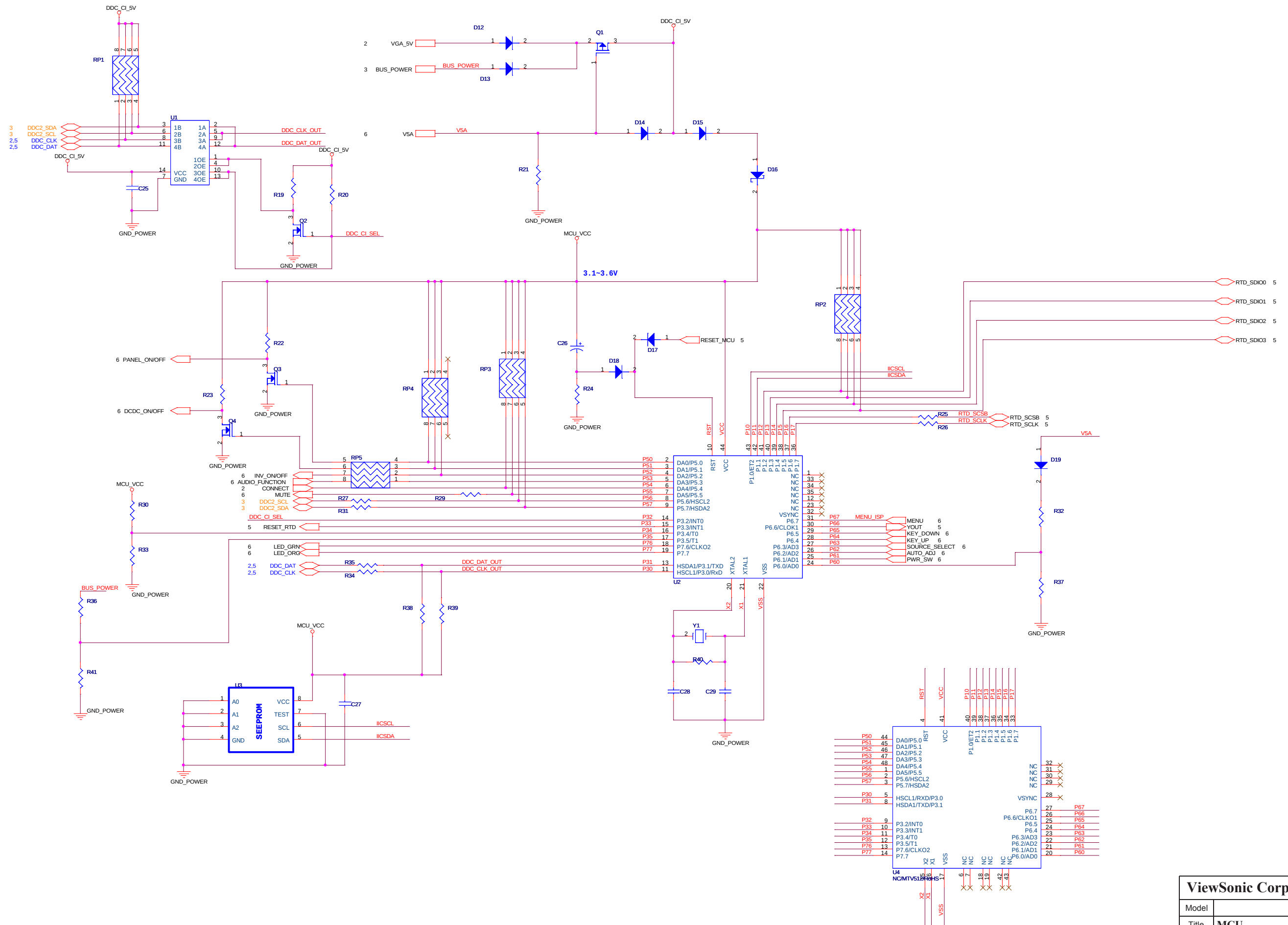
- TP1 TP 1 RIN
- TP2 TP 1 GNDR
- TP3 TP 1 SOG
- TP4 TP 1 GIN
- TP5 TP 1 GNDG
- TP6 TP 1 BIN
- TP7 TP 1 GNDB

- TP8 TP 1 HSYNC
- TP9 TP 1 VSYNC
- TP10 TP 1 DDC\_CLK
- TP11 TP 1 DDC\_DAT

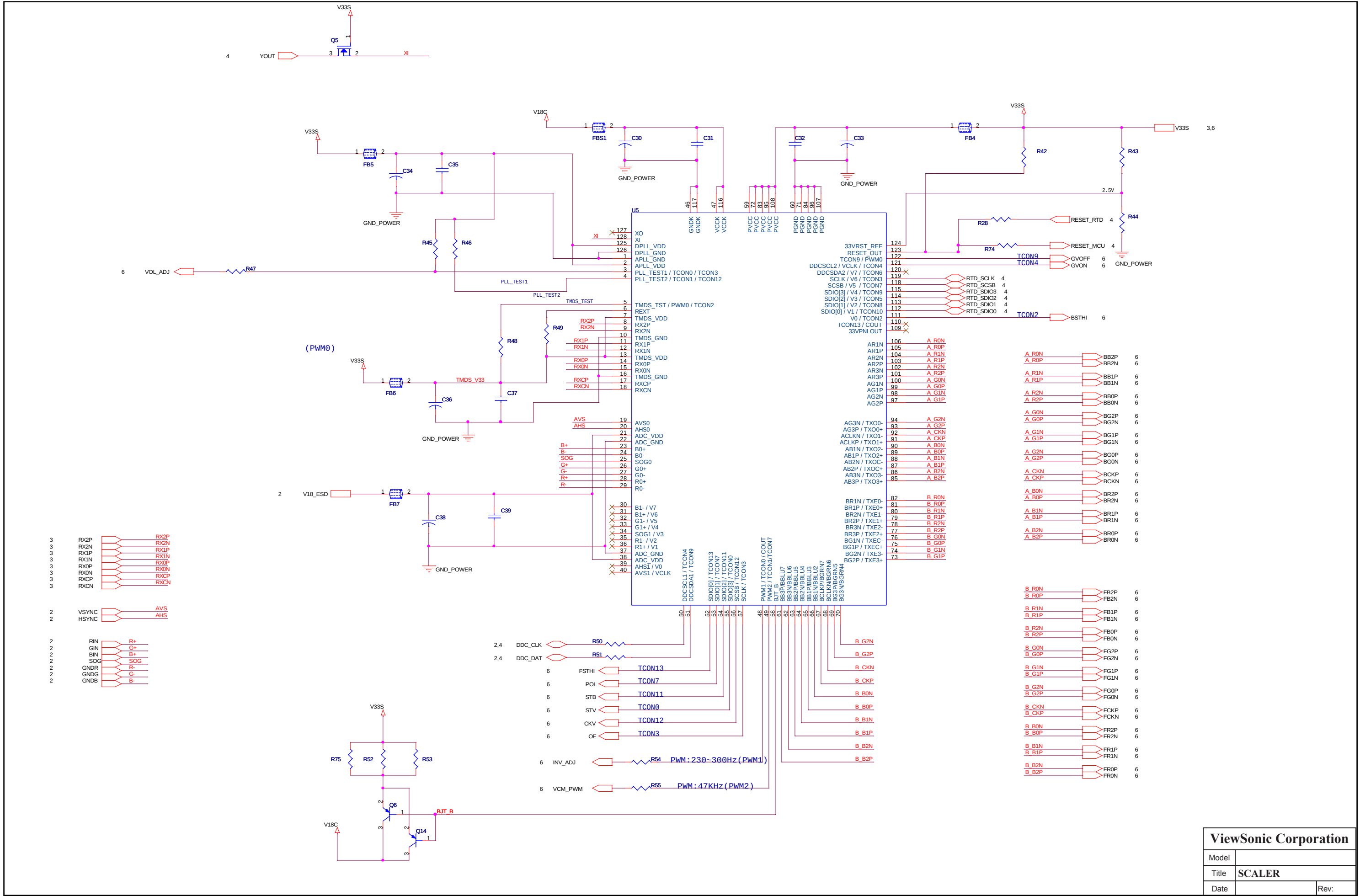
| ViewSonic Corporation |     |      |
|-----------------------|-----|------|
| Model                 |     |      |
| Title                 | VGA |      |
| Date                  |     | Rev: |

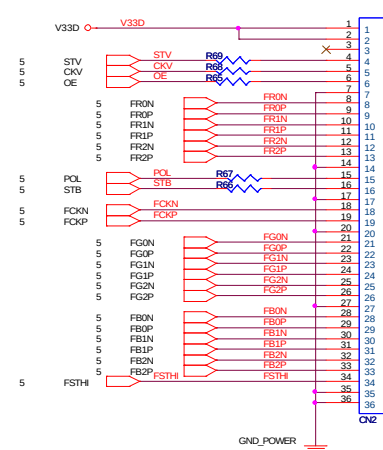
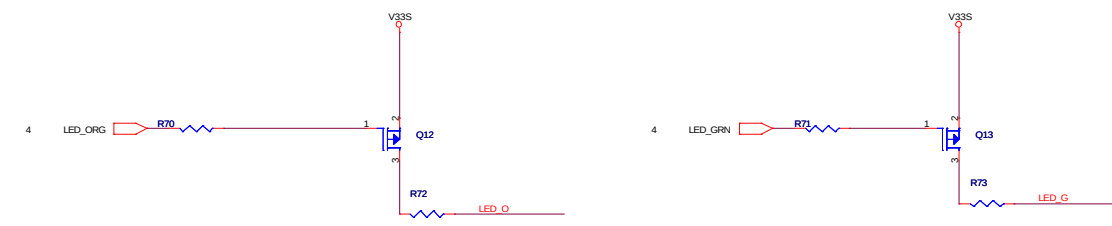
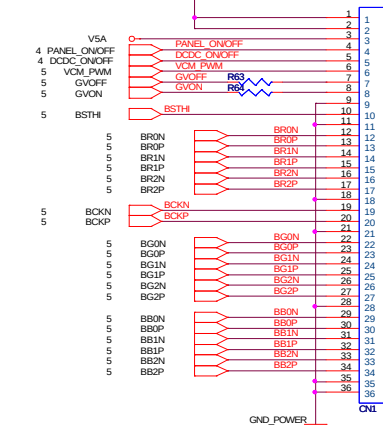
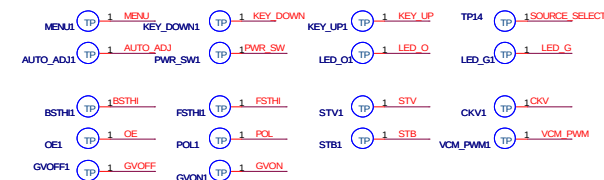
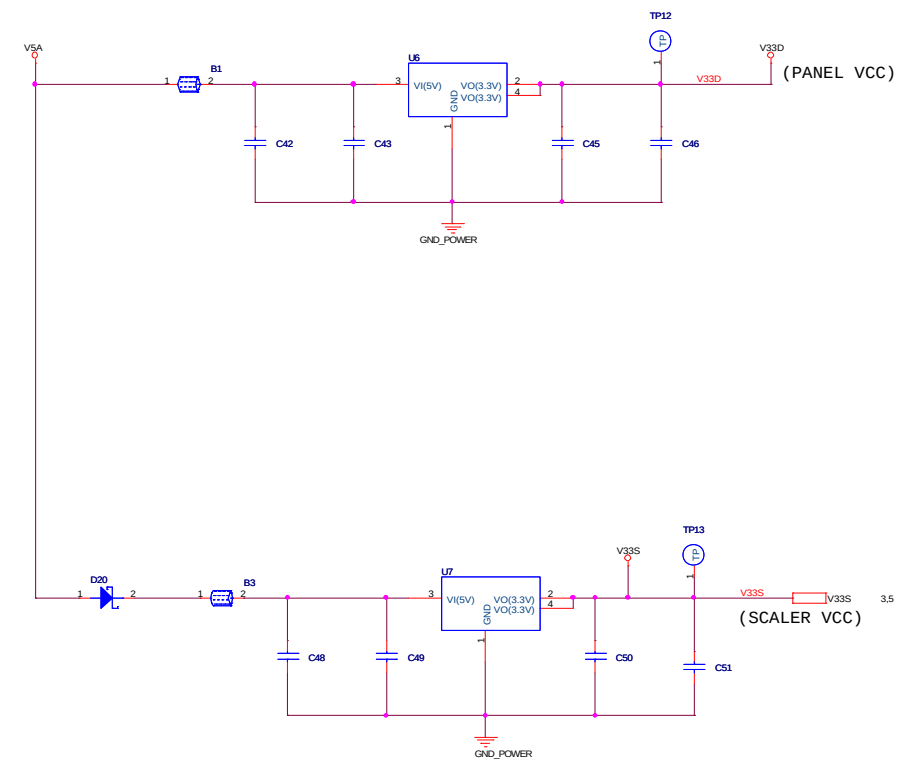


| ViewSonic Corporation |     |      |
|-----------------------|-----|------|
| Model                 |     |      |
| Title                 | DVI |      |
| Date                  |     | Rev: |

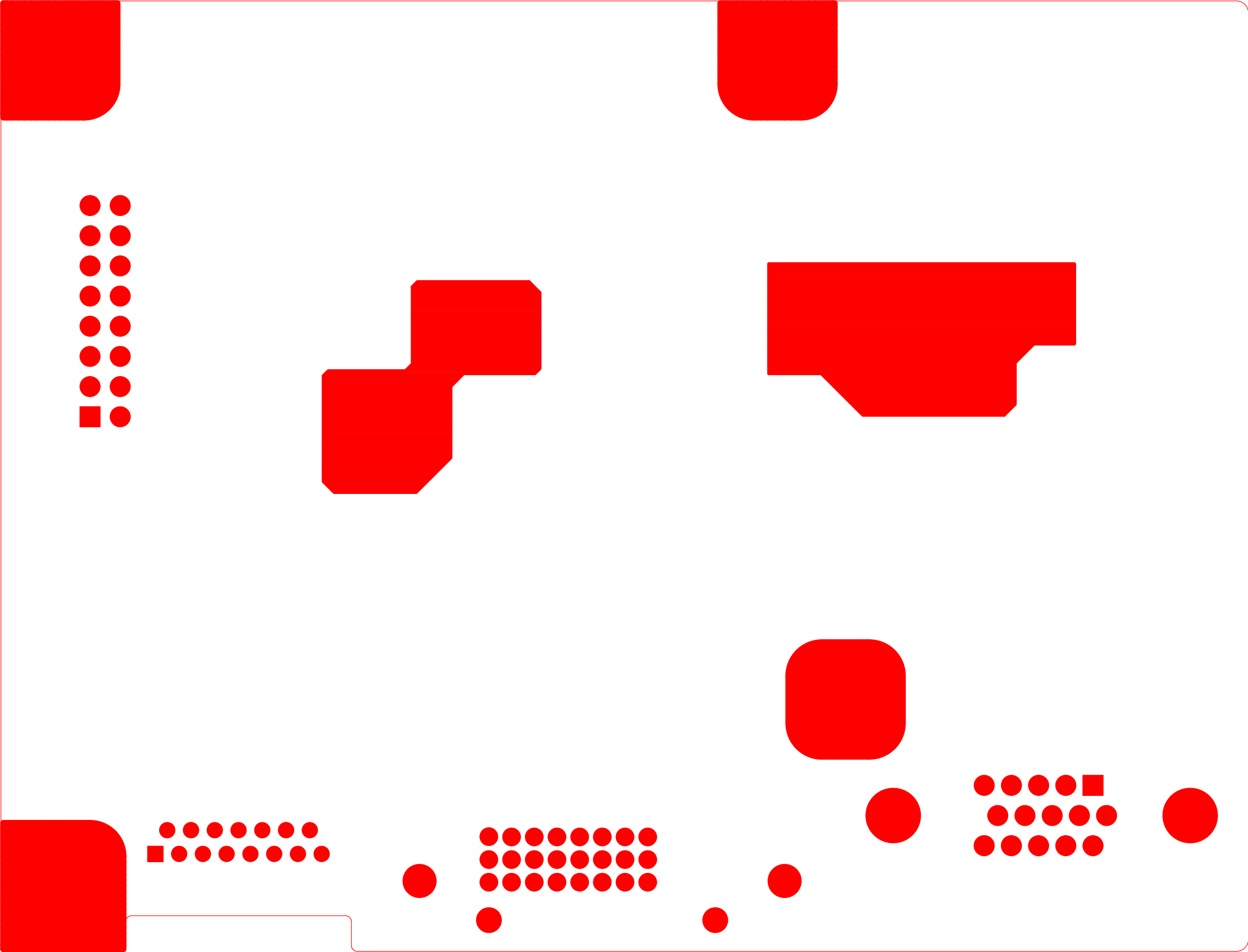


| ViewSonic Corporation |     |      |
|-----------------------|-----|------|
| Model                 |     |      |
| Title                 | MCU |      |
| Date                  |     | Rev: |

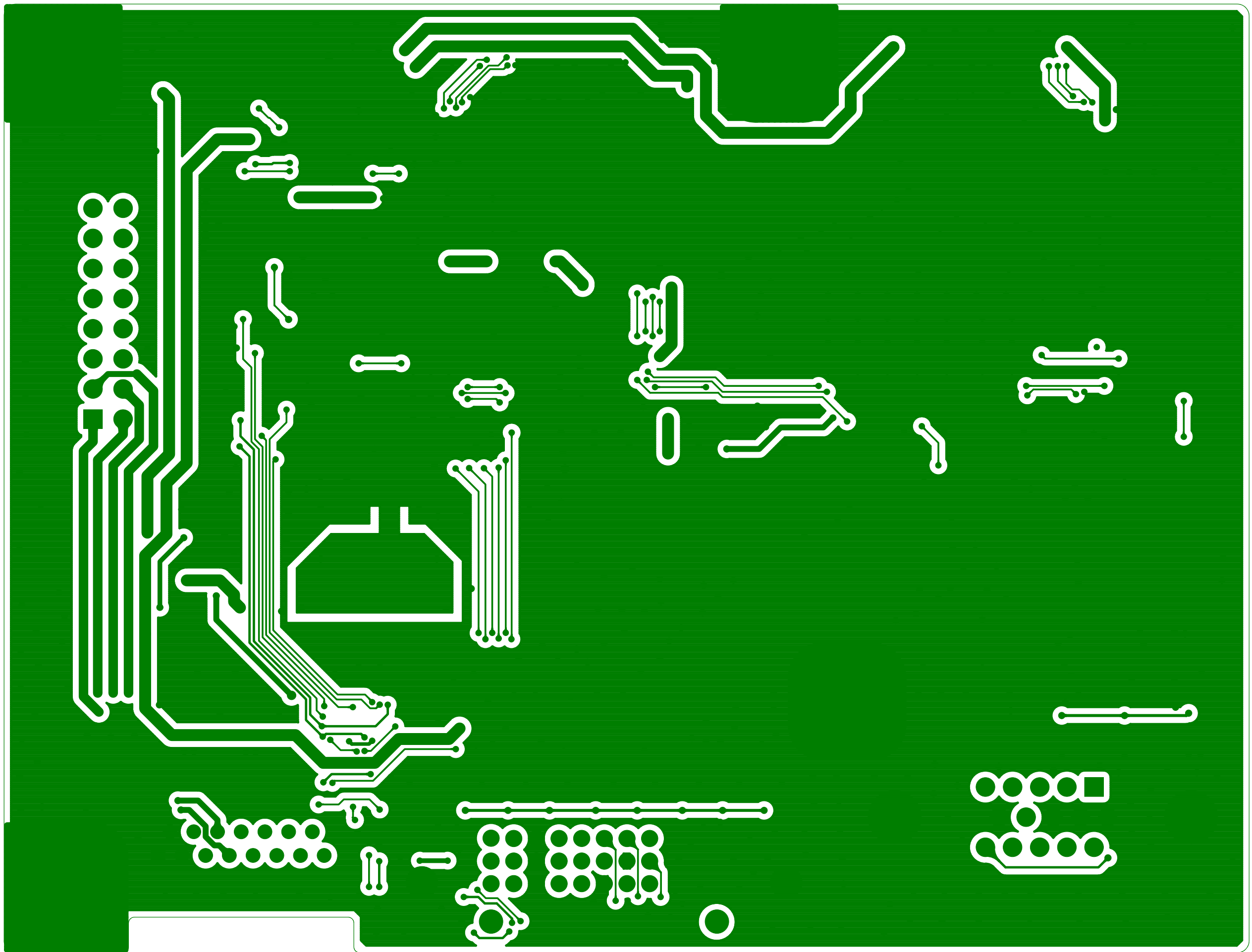




|                              |            |      |
|------------------------------|------------|------|
| <b>ViewSonic Corporation</b> |            |      |
| Model                        |            |      |
| Title                        | <b>I/F</b> |      |
| Date                         |            | Rev: |





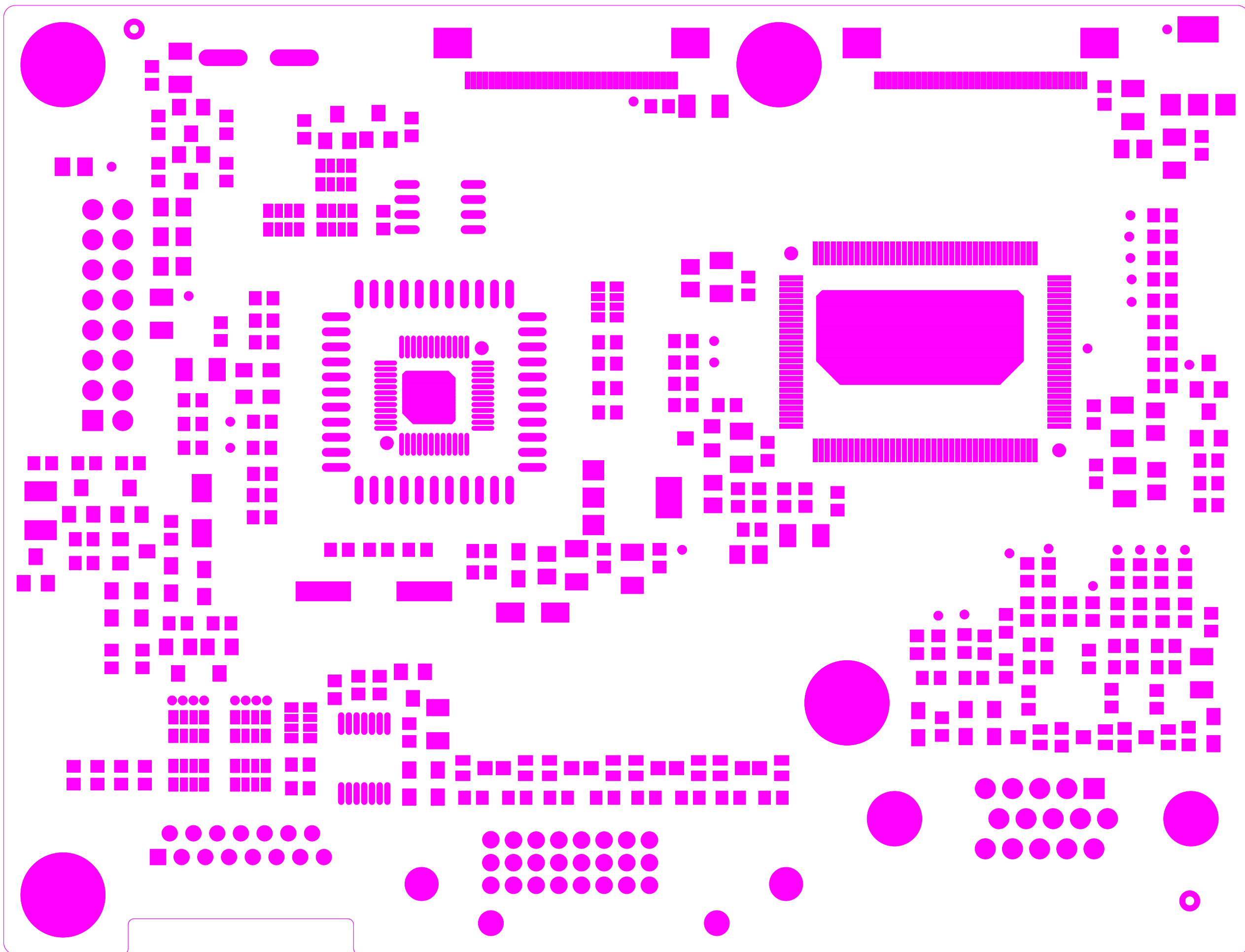


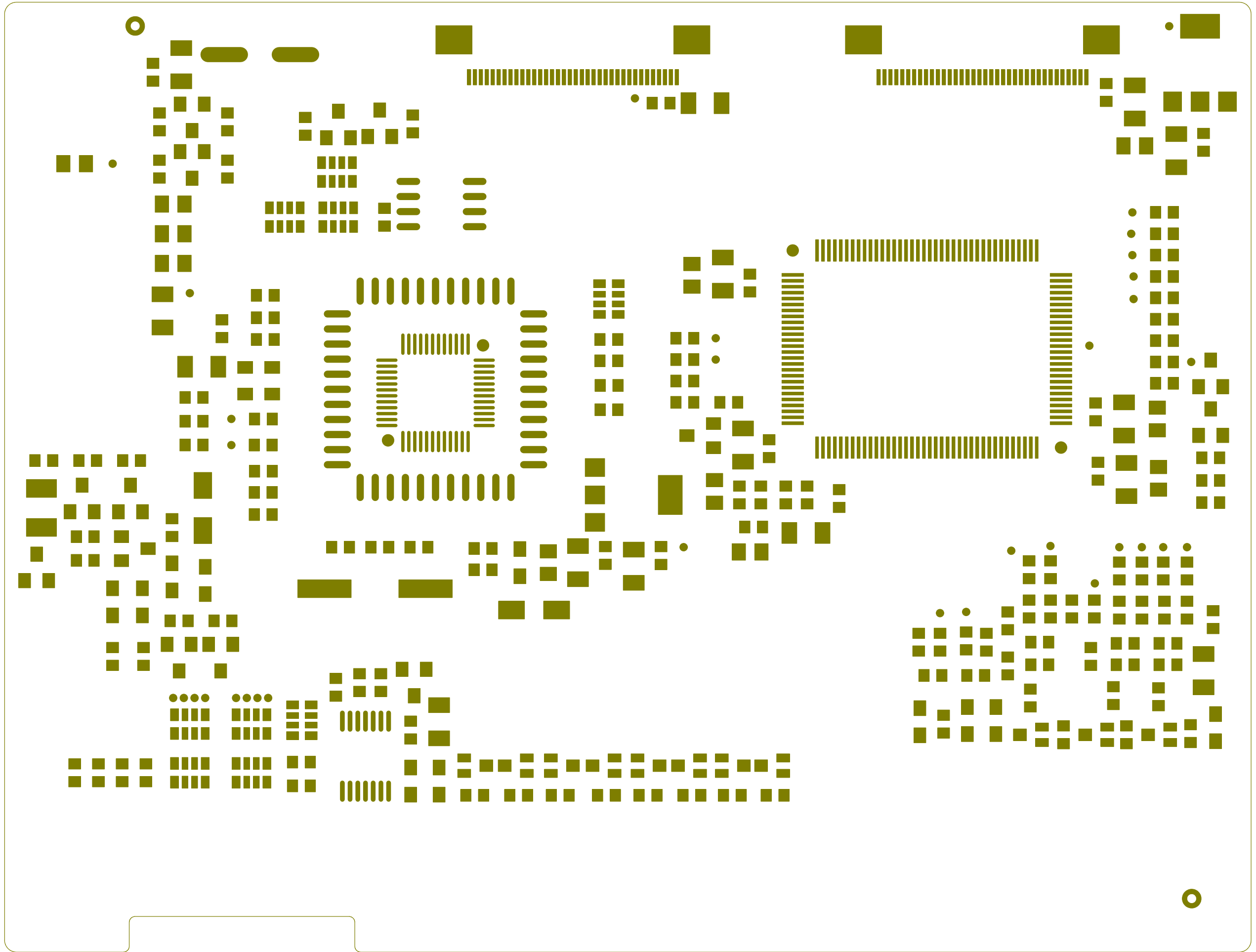
Label 3

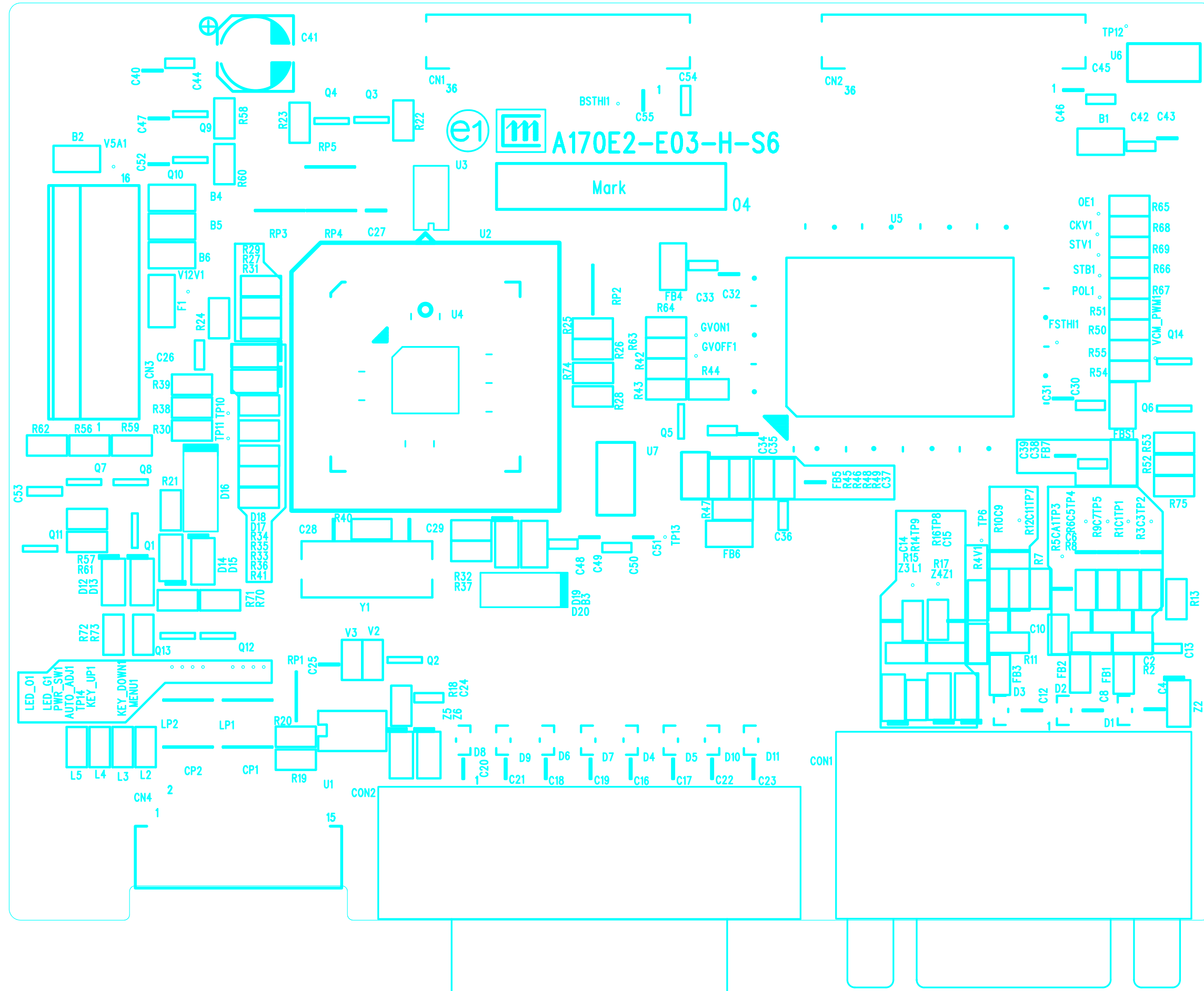


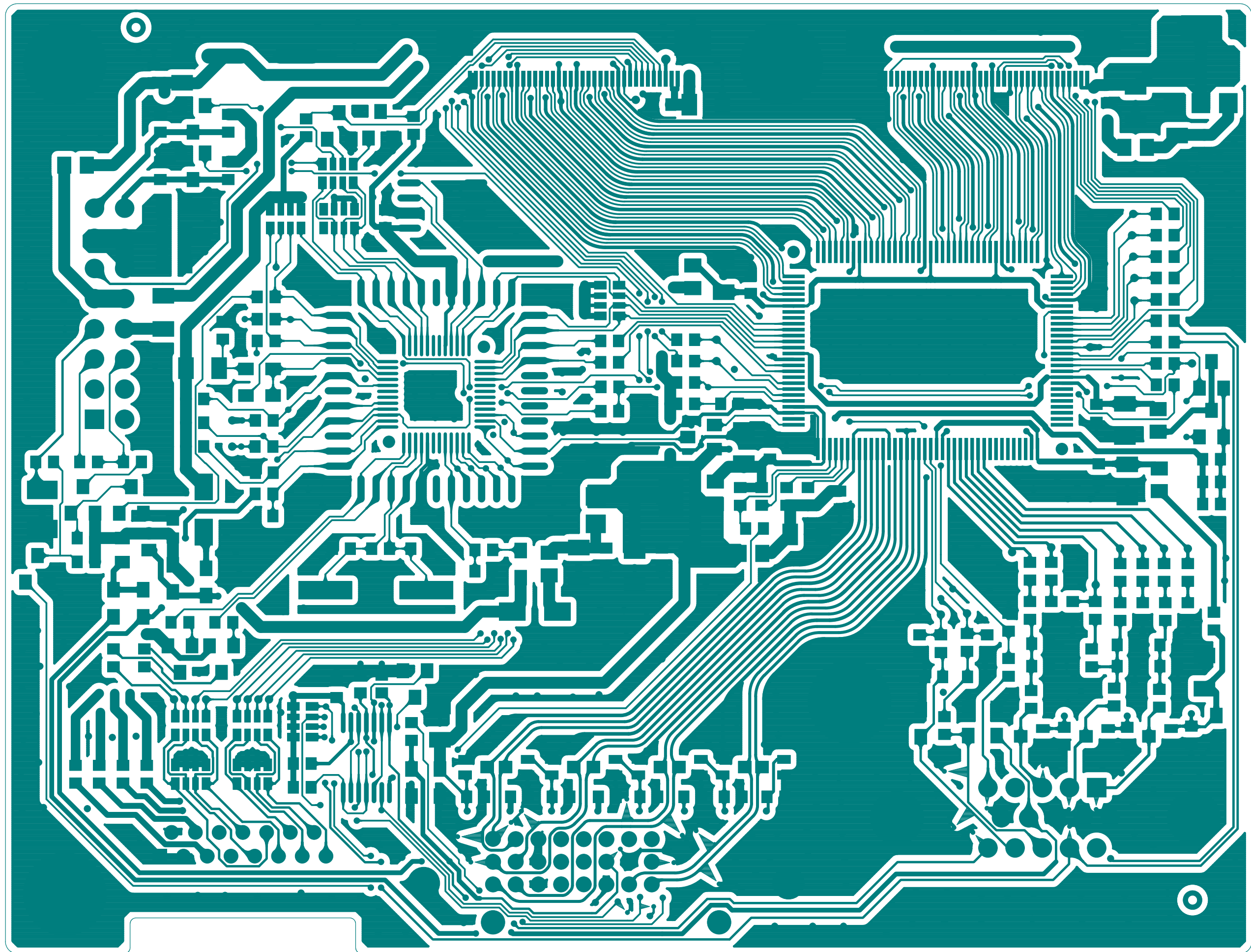


| SIZE | QTY | SYM | PLTD |
|------|-----|-----|------|
| 1    | 31  | +   | PLTD |
| 0.7  | 15  | ×   | PLTD |
| 3    | 2   | □   | PLTD |
| 0.9  | 24  | ◇   | PLTD |
| 1.93 | 4   | ⊗   | PLTD |
| 4.3  | 4   | ⊠   | PLTD |
| 0.25 | 258 | A   | PLTD |
| 0.3  | 378 | B   | PLTD |
| 0.4  | 29  | C   | PLTD |









## **\* 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> |
|----------------------------------------------------|------------------|-------------|-------------|------------|
| <b>1. Precautions and Safety Notices</b>           |                  |             |             |            |
| <b>2. Specification</b>                            |                  |             |             |            |
| <b>3. Front Panel Function Control Description</b> |                  |             |             |            |
| <b>4. Circuit Description</b>                      |                  |             |             |            |
| <b>5. Adjustment Procedure</b>                     |                  |             |             |            |
| <b>6. Troubleshooting Flow Chart</b>               |                  |             |             |            |
| <b>7. Recommended Spare Parts List</b>             |                  |             |             |            |
| <b>8. Exploded Diagram and Exploded Parts List</b> |                  |             |             |            |
| <b>9. Block Diagrams</b>                           |                  |             |             |            |
| <b>10. Schematic Diagrams</b>                      |                  |             |             |            |
| <b>11. PCB Layout Diagrams</b>                     |                  |             |             |            |

**B.** Are you satisfied with this Service Manual?

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

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

### **Reader's basic data:**

|                 |  |               |  |
|-----------------|--|---------------|--|
| <b>Name:</b>    |  | <b>Title:</b> |  |
| <b>Company:</b> |  |               |  |
| <b>Add:</b>     |  |               |  |
| <b>Tel:</b>     |  | <b>Fax:</b>   |  |
| <b>E-mail:</b>  |  |               |  |

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)