



# Hardware User Guide

## VAMP-WN

Part No: MAN000xxA

## Document History

| Version | Date       | Description   | Author |
|---------|------------|---------------|--------|
| A       | 2010.03.17 | First version | WM     |

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## FCC Statement

This device complies with part 15 FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "a" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

## Warnings, Cautions, and Notes as Used in this Publication



Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.



Caution notices are used where equipment might be damaged if care is not taken.



Notes merely call attention to information that is especially significant to understanding and operating the equipment.

## Important Safety Precautions

### Warning



Always completely disconnect the power cord from your unit prior to working with the hardware. Do not make connection while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the unit.

### Caution



Always ground yourself to remove any static charge before touching any internal components. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the unit.

## Safety and Warranty



- Please read these safety instructions carefully.
- Please keep this user's manual for later reference.
- Please disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning, use a damp cloth.
- For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
- Keep this equipment away from humidity.
- Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
- The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
- Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- All cautions and warnings on the equipment should be noted.
- If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
- Never pour any liquid into an opening. This could cause fire or electrical shock.
- We do not recommend using any ammonia or alcohol-based cleaners on the monitor screen or case. Some chemical cleaners have been reported to damage the screen and/or case of the monitor. The manufacturer will not be liable for damage resulting from the use of any ammonia or alcohol-based cleaner.
- Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
- If any of the following situations arises, get the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work well, or you cannot get it to work according to the user's manual.
- The equipment has been dropped and damaged.
- The equipment has obvious signs of breakage.
- Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4° F) or above 60° C (140° F), as this may damage the equipment.

## Unpacking

After unpacking the VAMP-WN, check to ensure the following items are included and in good condition. Do not attempt to apply power to the system if there is damage to any of its components.

- 1x VAMP-WN main system
- 1x VGA cable
- 1x AC to DC adapter
- 1x Power cable
- 1x DVI cable (optional)
- 1x Audio cable (optional)
- 1x Touch Driver CD (optional)
- Mounting screws (optional)

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# 1. Installing the Monitor

Procedures for setting up your VAMP-WN monitor are as follows:

## 1.1. Power & Signal Connections

### 1.1.1. Power

Switch off the power on both your monitor and your computer. The Power Switch is located in the center of the monitor.

### 1.1.2. Power Cable Connection

Connect the power cord to the AC outlet, and connect the power to the monitor through the AC/DC adapter.

### 1.1.3. VGA Signal Cable Connection

Plug one end of the 15-pin signal cable to the video signal connector at the rear of the PC system and the other end to the monitor. Secure the connectors with the screws on the cable connector at both ends.

## 1.2. Optional Connections

### 1.2.1. Compatible Cable Connection

The LCD monitor is designed to work with a variety of compatible video sources. Due to possible deviations between these video sources, you may have to make some adjustment to the monitor settings when switching between these sources. These adjustments are made from the OSD menu.

### 1.2.2. DVI Cable Connection

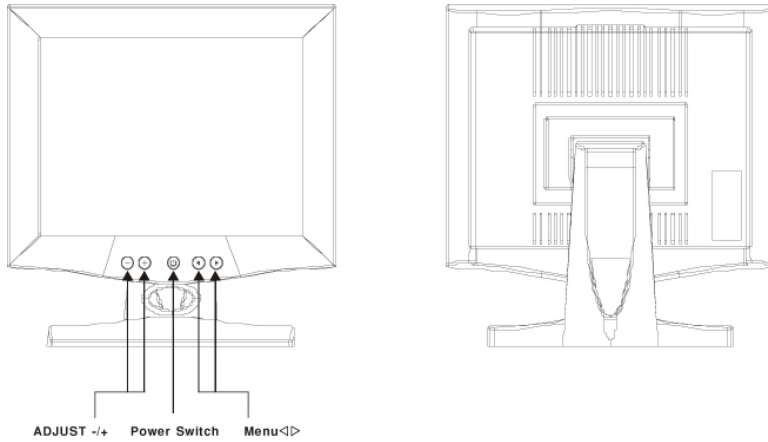
Plug one end of the DVI signal cable to the video signal connector at the rear of the PC system and the other end to the monitor. Secure the connectors with the screws on the cable connector at both ends.

## 2. Using Your VAMP-WN Monitor

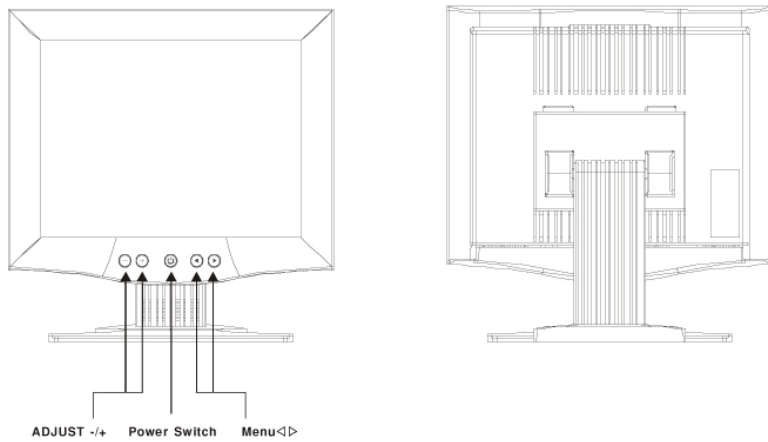
### 2.1. Monitor Illustrations

The LCD monitor controls are located on the lower front side of the panel. The open frame and chassis monitor controls are located on the higher rear side of the panel. They are shown in the figure below and described in the following paragraphs.

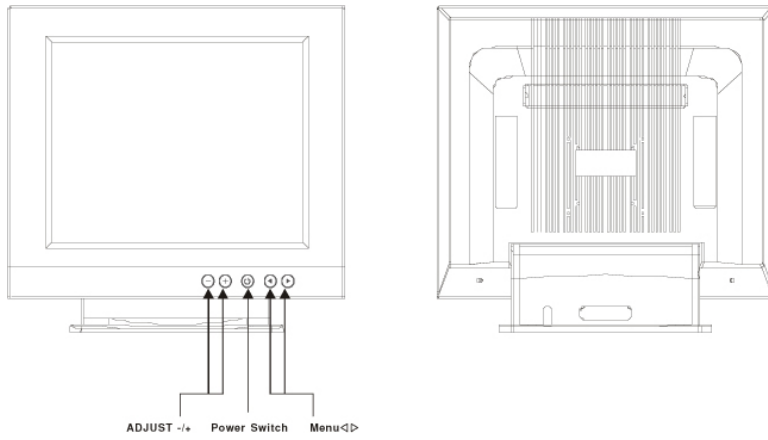
#### 2.1.1. Type I: LCD Monitor (15") – Stand I



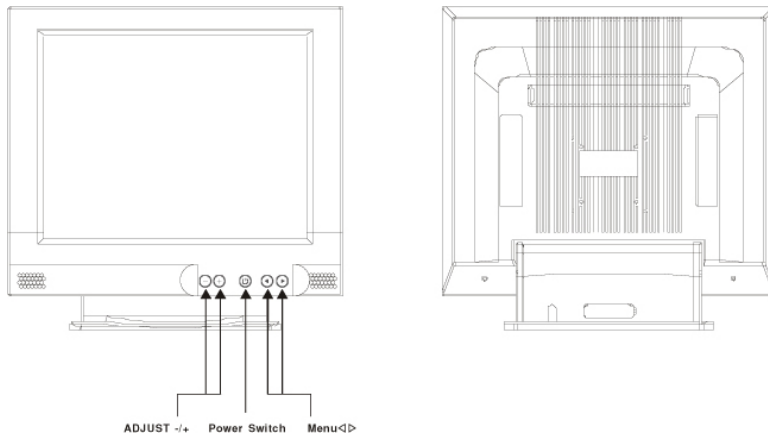
#### 2.1.2. Type I: LCD Monitor (15") – Stand II



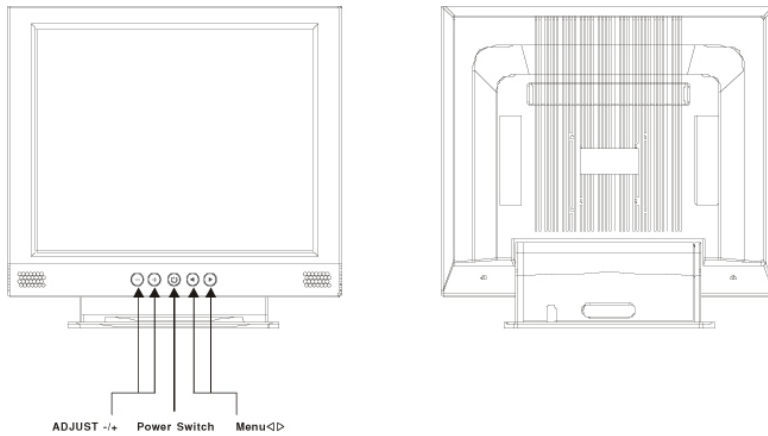
### 2.1.3. Type II: LCD Monitor (17")



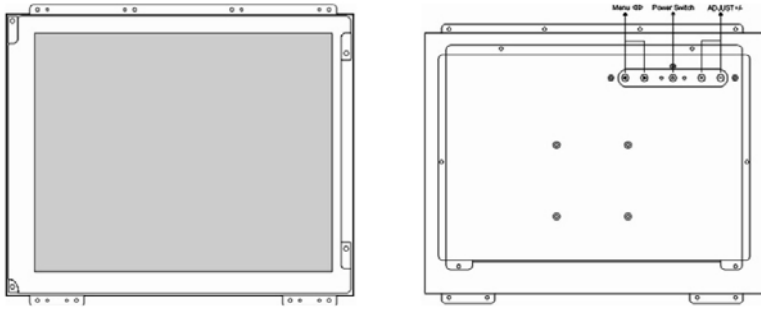
### 2.1.4. Type III: LCD Monitor (18")



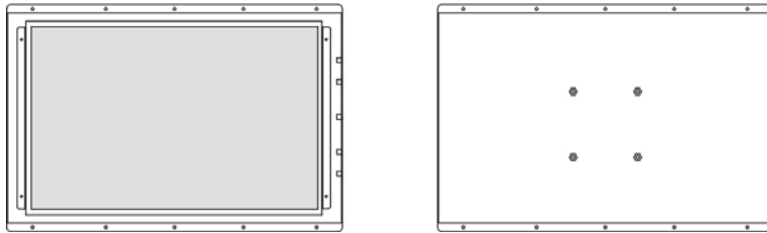
### 2.1.5. Type IV: LCD Monitor (19")



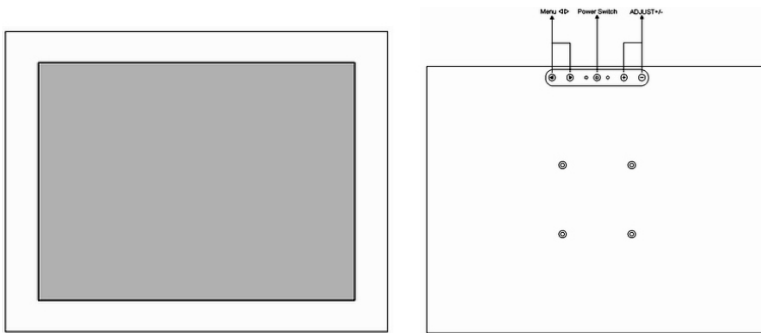
**2.1.6. Type V: Open Frame Monitor (15") – Stand I**



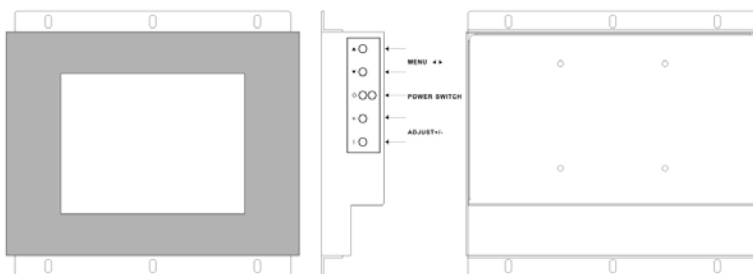
**2.1.7. Type V: Open Frame Monitor (15.4") – Stand II**



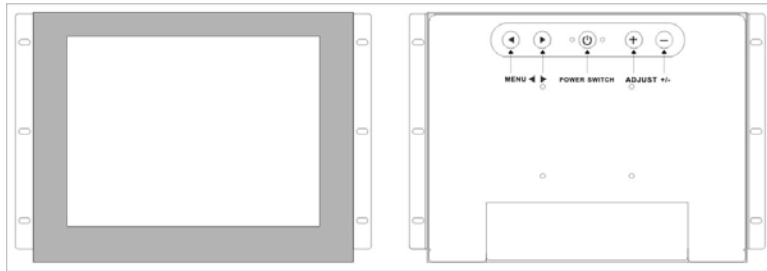
**2.1.8. Type VI: Chassis Monitor (10.4" to 19")**



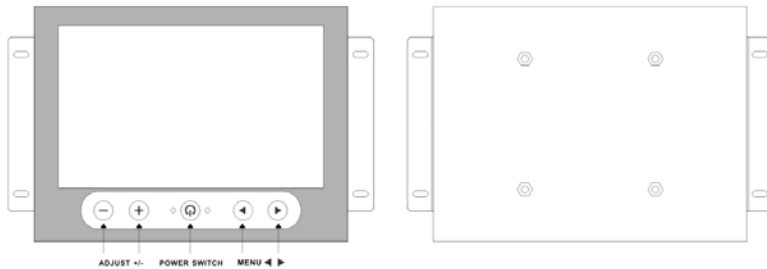
**2.1.9. Type VII: Rear Mount Monitor (6.4", 8.4") – Stand I**



### 2.1.10. Type VII: Rear Mount Monitor (10.4" to 19") – Stand II

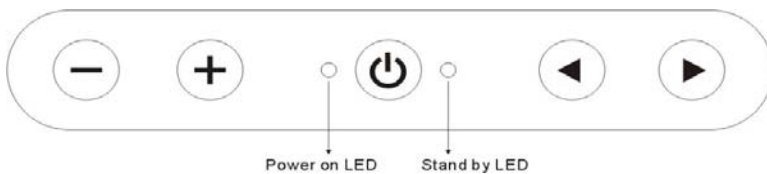


### 2.1.11. Type VII: Rear Mount Monitor (7") – Stand III

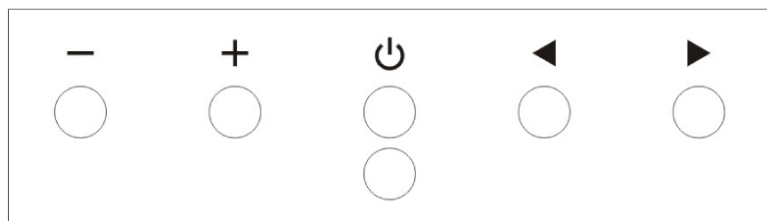


## 2.2. Control Key Definition

### 2.2.1. LCD Monitor, Open Frame, Chassis, Rear Mount Monitor Stand I and II



### 2.2.2. Rear Mount Monitor Stand I



### 2.2.3. Key Pad Hot Key Function

| Item | Description   |
|------|---|
|      | Call main OSD menu  |
|      | Press this key to trigger the function for automatic adjustment         |
|      | Power switch  |
|      | Press this key to increase the value of the volume adjustment           |
|      | Press this key to decrease the value of volume adjustment               |
|      | Press this compound key to trigger the function for source input switch |

### 2.3. Navigating the OSD Menu

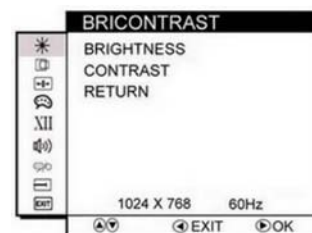
1. To display the main menu, press the MENU button (▶) to display the main menu on the screen.
2. To select the menu you want to adjust, press the +/- button to shift the item selections up or down until in desired position, then press the button (▶) again to enter the menu item.
3. To adjust the item setting, press the +/- button to adjust the value of setting. Once you adjust the value of setting, the value will be stored automatically.
4. To exit the OSD menu and return the regular screen viewing, select the "EXIT OSD" item or press the Exit Key (◀) directly. If there is no command respond for 30 seconds, OSD menu will be closed automatically.

### 2.4. OSD Menu on VGA Mode

#### 2.4.1. Bricontrast

Press "+" to increase or "-" to decrease the brightness or contrast

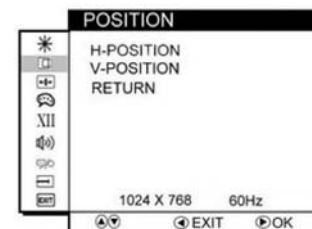
- BRIGHTNESS: Use to adjust the screen's brightness
- CONTRAST: Use to adjust the screen's contrast



#### 2.4.2. Position

You can adjust the screen's position by horizontal and vertical manually.

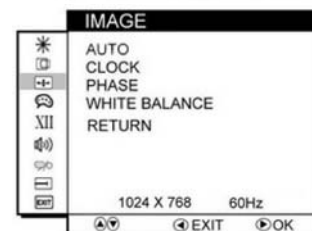
- H-POSITION: Use to adjust the image to the left or right on the screen
- V-POSITION: Use to adjust the image up or down on the screen



#### 2.4.3. Image

You can adjust the value of screen quality automatically.

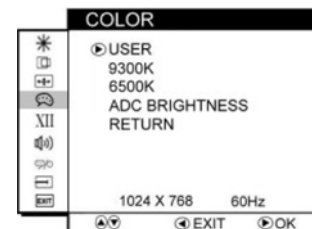
- AUTO: Use to choose the best settings for the current input signal
- CLOCK: Use to adjust the value of horizontal image
- PHASE: Use to adjust the phase control (Phase adjustment may be required to optimize the display quality)
- WHITE BALANCE: Use to set RGB signal voltage level



#### 2.4.4. Color

You can select the screen's color level of the white color field from the default color temperature settings. Also, you can fine-tune the color temperature by USER option if necessary.

- USER: Choose RED/GREEN/BLUE to set value of color temperature brightness to suit your own preference



- 9300: Use to set value of monitor for the CIE coordinate 9300 color temperature
- 6500K: Use to set value of monitor for the CIE coordinate 6500 color temperature
- ADC Brightness: Set value of monitor for ADC Brightness

### 2.4.5. Gamma

You can adjust the value of GAMMA; there are four default value groups for your choice. Select "RETURN" to return the main menu.

### 2.4.6. Audio (optional)

You can adjust the setting of speaker, including volume and mute.

- VOLUME ADJUST: Use to adjust the volume of speaker
- SPEAK ON/OFF: Use to make the speaker work or mute

### 2.4.7. Channel (optional)

You can switch the setting of signal input channel.

- ANALOG: Use to change the input signal to Analog mode
- DVI: Use to change the input signal to DVI mode
- CVBS: Use to change the input signal to Composite mode
- S-VIDEO: Use to change the input signal to S-Video mode

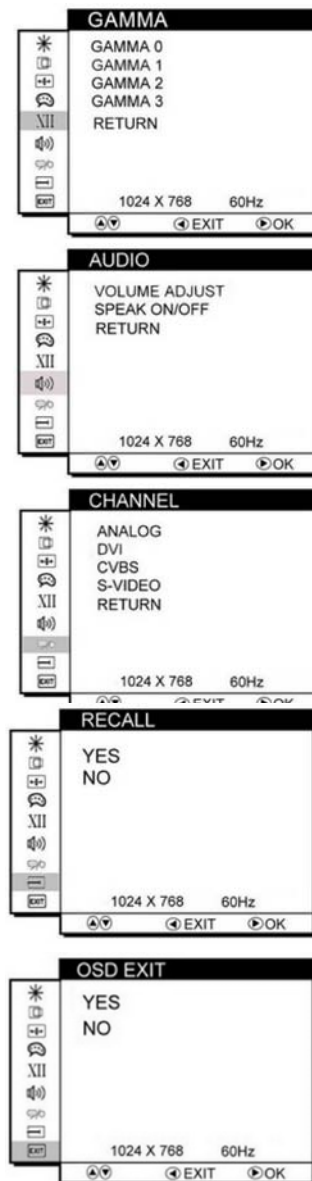
### 2.4.8. Recall










You can recall the factory default setting by selecting "YES". Select "NO" to return the main menu.

### 2.4.9. OSD Exit

You can exit the OSD menu by selecting "YES". Select "NO" to return the main menu.

### 2.4.10. Summary



|   |             |  |   |          |  |
|---|-------------|--|---|----------|--|
|  | Bricontrast | Brightness<br>Contrast   |  | Gamma    | Gamma 0<br>Gamma 1<br>Gamma 2<br>Gamma 3 |
|  | Position    | H-Position<br>V-Position                                       |  | Audio    | Volume Adjust<br>Speak On/Off            |
|  | Image       | Auto<br>Clock<br>Phase<br>White Balance                        |  | Channel  | Analog<br>DVI<br>CVBS<br>S-Video         |
|  | Color       | User<br>- (Red/Green/Blue)<br>9300K<br>6500K<br>ADC Brightness |  | Recall   | Yes<br>No                                |
|   |             |  |  | OSD Exit | Yes<br>No                                |

## 2.5. OSD Menu on AV (CVBS/S-Video) Mode (Option)

### 2.5.1. Bricontrast

Press "+" to increase or "-" to decrease the brightness or contrast

- BRIGHTNESS: Use to adjust the screen's brightness
- CONTRAST: Use to adjust the screen's contrast

### 2.5.2. Sharpness

Press "+" to increase or "-" to decrease the value of sharpness. This function allows the user to optimize the sharpness of the image.

### 2.5.3. Saturation

Press "+" to increase or "-" to decrease the value of saturation

### 2.5.4. Hue

Press "+" to increase or "-" to obtain the desired color settings. The Hue is defined as a phase shift of the sub-carrier with respect to the burst.

### 2.5.5. GAMMA

You can adjust the value of GAMMA; there are four default value groups for your choice. Select "RETURN" to return the main menu.

### 2.5.6. AUDIO (optional)

You can adjust the setting of speaker, including volume and mute.

- VOLUME ADJUST: Use to adjust the volume of speaker
- SPEAK ON/OFF: Use to make the speaker work or mute

### 2.5.7. Channel (optional)

You can switch the setting of signal input channel.

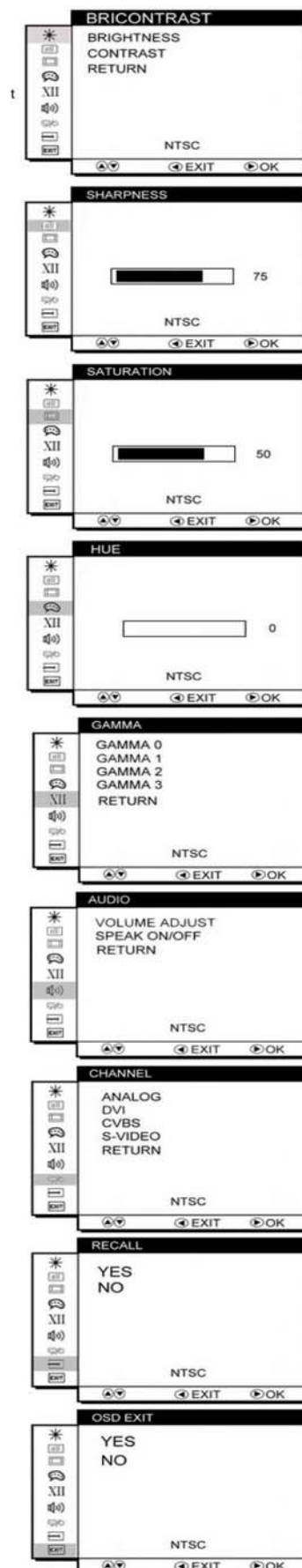
- ANALOG: Use to change the input signal to Analog mode
- DVI: Use to change the input signal to DVI mode
- CVBS: Use to change the input signal to Composite mode
- S-VIDEO: Use to change the input signal to S-Video mode

### 2.5.8. Recall

You can recall the factory default setting by selecting "YES". Select "NO" to return the main menu.

### 2.5.9. OSD Exit

You can exit the OSD menu by selecting "YES". Select "NO" to return the main menu.



### 2.5.10. Summary

|  |             |  |  |          |                                  |
|--|-------------|--|--|----------|----------------------------------|
|  | Bricontrast | Brightness<br>Contrast                   |  | Audio    | Volume Adjust<br>Speak On/Off    |
|  | Sharpness   |  |  | Channel  | Analog<br>DVI<br>CVBS<br>S-Video |
|  | Hue         |  |  | Recall   | Yes<br>No                        |
|  | Gamma       | Gamma 0<br>Gamma 1<br>Gamma 2<br>Gamma 3 |  | OSD Exit | Yes<br>No                        |

## 2.6. OSD Menu on DVI Mode (Option)

### 2.6.1. Bricontrast

Press "+" to increase or "-" to decrease the brightness or contrast

- BRIGHTNESS: Use to adjust the screen's brightness
- CONTRAST: Use to adjust the screen's contrast

### 2.6.2. Color

You can select the screen's color level of the white color field from the default color temperature settings. Also, you can fine-tune the color temperature by USER option if necessary.

- USER: Choose RED/GREEN/BLUE to set value of color temperature brightness to suit your own preference
- 9300: Use to set value of monitor for the CIE coordinate 9300 color temperature
- 6500K: Use to set value of monitor for the CIE coordinate 6500 color temperature
- ADC Brightness: Set value of monitor for ADC Brightness

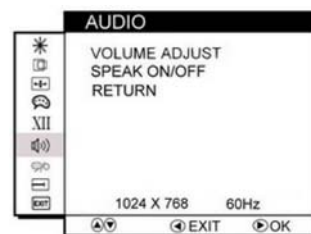
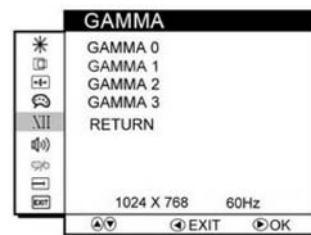
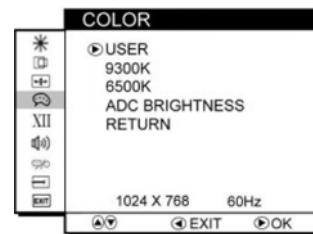
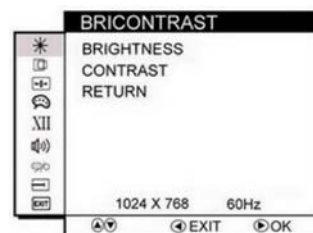
### 2.6.3. GAMMA

You can adjust the value of GAMMA; there are four default value groups for your choice. Select "RETURN" to return the main menu.

### 2.6.4. AUDIO (optional)

You can adjust the setting of speaker, including volume and mute.

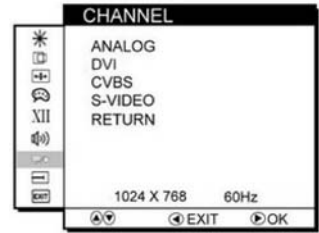
- VOLUME ADJUST: Use to adjust the volume of speaker
- SPEAK ON/OFF: Use to make the speaker work or mute



### 2.6.5. Channel (optional)

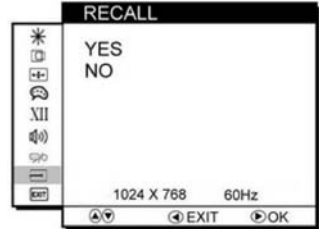
You can switch the setting of signal input channel.

- ANALOG: Use to change the input signal to Analog mode
- DVI: Use to change the input signal to DVI mode
- CVBS: Use to change the input signal to Composite mode
- S-VIDEO: Use to change the input signal to S-Video mode



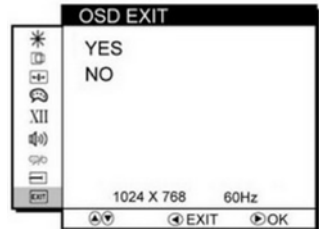
### 2.6.6. Recall

You can recall the factory default setting by selecting "YES". Select "NO" to return the main menu.










### 2.6.7. OSD Exit

You can exit the OSD menu by selecting "YES". Select "NO" to return the main menu.



### 2.6.8. Summary

|   |             |  |   |          |                                  |
|---|-------------|--|---|----------|----------------------------------|
|    | Bricontrast | Brightness<br>Contrast   |    | Channel  | Analog<br>DVI<br>CVBS<br>S-Video |
|  | Color       | User<br>- (Red/Green/Blue)<br>9300K<br>6500K<br>ADC Brightness |  | Recall   | Yes<br>No                        |
|  | Gamma       | Gamma 0<br>Gamma 1<br>Gamma 2<br>Gamma 3                       |  | OSD Exit | Yes<br>No                        |
|  | Audio       | Volume Adjust<br>Speak On/Off                                  |   |          |                                  |

### 3. Cleaning the LCD Monitor

1. Make sure the monitor is turned off.
2. Never spray or pour any liquid directly onto the screen or case.
3. Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles.
4. The display area is highly prone to scratching. Do not use ketone type material (e.g. Acetone), Ethyl alcohol, toluene, ethyl acid or Methyl chloride to clear the panel. It may permanently damage the panel and void the warranty.
5. If it is still not clean enough, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth, and wipe the screen. We do not recommend using any ammonia or alcohol-based cleaners on the monitor screen or case. Some chemical cleaners have been reported to damage the screen and/or case of the monitor. The manufacturer will not be liable for damage resulting from the use of any ammonia or alcohol-based cleaner.
6. Don't use water or oil directly on the monitor. If droplets are allowed to dry on the monitor permanent staining or discoloration may occur.

## 4. Trouble Shooting

If your monitor fails to operate correctly, consult the following chart for possible solution before calling for repairs:

| Condition  | Check Point  |
|--|--|
| 1. The picture does not appear                     | <ul style="list-style-type: none"> <li>• Check if the signal cable is firmly seated in the socket.</li> <li>• Check if the Power is ON at the computer</li> <li>• Check if the brightness control is at the appropriate position, not at the minimum.</li> </ul>   |
| 2. The screen is not synchronized                  | <ul style="list-style-type: none"> <li>• Check if the signal cable is firmly seated in the socket.</li> <li>• Check if the output level matches the input level of your computer.</li> <li>• Make sure the signal timings of the computer system are within the specification of the monitor.</li> <li>• If your computer was working with a CRT monitor, you should check the current signal timing and turn off your computer before you connect the VGA Cable to this monitor.</li> </ul> |
| 3. The position of the screen is not in the center | <ul style="list-style-type: none"> <li>• Adjust the H-position, and V-position, or Perform the Auto adjustment.</li> </ul>   |
| 4. The screen is too bright (too dark).            | <ul style="list-style-type: none"> <li>• Check if the brightness or contrast control is at the appropriate position, not at the Maximum (Minimum).</li> </ul>  |
| 5. The screen is shaking or waving                 | <ul style="list-style-type: none"> <li>• Press (the Auto - adjustment control) to adjust. Moving all objects, which emit a magnetic field such as motor or transformer, away from the monitor. Check if the specific voltage is applied.</li> <li>• Check if the signal timing of the computer system is within the specification of monitor.</li> </ul>   |

If you are unable to correct the fault by using this chart, stop using your monitor and contact your distributor or dealer for further assistance.

## 5. RMA Request & Return Form

|  |                          |                 |   |                              |  |  |
|--|--------------------------|-----------------|---|------------------------------|--|--|
| <b>DATE:</b>   | <b>RMA NUMBER:</b>       |                 |   |                              | <b>(FOR Computer Dynamics INTERNAL USE ONLY)</b> |  |
| <b>Instructions:</b> <ol style="list-style-type: none"> <li>Please complete this form to request an RMA (Return Material Authorization) number and return to:<br/> <b>E-mail: Victoria.Lowery@GE.com U.S. Phone: 1-864-672-4308 and 1-864-672-4338</b><br/> <b>FAX: 1-864-752-1537 International Phone: Country Code + 1(864) 672-4308</b></li> <li>This form will be sent back to you with an RMA number along with verification of the warranty status.</li> <li>You must include this completed form (which contains your RMA number) when you return the product(s).</li> </ol> <b>Please Note:</b> <ul style="list-style-type: none"> <li>ALL fields are required to process your RMA request. Any fields omitted or incorrectly completed could delay receipt of an RMA number or increased processing and debugging time after the product is received</li> <li>If the form and product(s) are returned without an RMA number, the product may be returned without processing</li> <li>Please refer to the Repair and Replacement Policy for all repair inquiries<br/> <a href="http://www.ge-ip.com/userfiles/file/GEFIP-ES_Repair_Replace_Policy_Oct08.pdf">http://www.ge-ip.com/userfiles/file/GEFIP-ES_Repair_Replace_Policy_Oct08.pdf</a></li> </ul> |                          |                 |   |                              |  |  |
| <b>Section A – Company Information</b>   |                          |                 |   |                              |  |  |
| Company Name:  |                          |                 |   |                              |  |  |
| Billing Address:   |                          |                 |   |                              |  |  |
| City, State, Zip Code:   |                          |                 |   |                              |  |  |
| Shipping Address (if different from above):  |                          |                 |   |                              |  |  |
| City, State, Zip Code:   |                          |                 |   |                              |  |  |
| Administrative Point of Contact (Name, Title):   |                          |                 |   |                              |  |  |
| Phone:   |                          | FAX:            |   | E-Mail:                      |  |  |
| Technical Point of Contact (Name, Title if different from above):  |                          |                 |   |                              |  |  |
| Phone:   |                          | FAX:            |   | E-Mail:                      |  |  |
| <b>Section B – Product Information</b>   |                          |                 |   |                              |  |  |
| Does your company require a PO Number to receive RMA products back in? <input type="checkbox"/> YES <input type="checkbox"/> NO  |                          |                 |   |                              |  |  |
| PO Number (Required For All Returns, Regardless of Warranty Status):   |                          |                 |   |                              |  |  |
| Is product being returned for Credit only? (Must Be Approved by CDI Prior To Return) <input type="checkbox"/> YES <input type="checkbox"/> NO  |                          |                 |   |                              |  |  |
| Do you require your product to remain at the same revision? <input type="checkbox"/> YES <input type="checkbox"/> NO   |                          |                 |   |                              |  |  |
| Is product Export Controlled or ITAR restricted? (Please Explain):   |                          |                 |   |                              |  |  |
| Please select one of the following Return Reasons and enter corresponding Code in the table below:   |                          |                 |   |                              |  |  |
| D - Product Damaged Upon Receipt   |                          |                 | P - Product Operationally Defective (See Section D) |                              |  |  |
| F - Product Fit, Form, or Function Not As Advertised   |                          |                 | M - Product Missing Label or Component              |                              |  |  |
| W - Wrong Product / Part Number / Revision Received  |                          |                 | S - Product Not Per Statement of Work               |                              |  |  |
| I - Product Damaged During Customer Installation / Operation   |                          |                 | O - Other (Please Specify) <input type="text"/>     |                              |  |  |
| U - Product Upgrade Only (Customer will be charged for all Upgrade Only returns, regardless of Warranty status)  |                          |                 |   |                              |  |  |
| <b>CDI Part/Model Number</b>   | <b>CDI Serial Number</b> | <b>Warranty</b> | <b>Return Code</b>                                  | <b>Fixed Cost (CDI Only)</b> |  |  |
|  | 1.                       | _____           | _____   |                              |  |  |
|  | 1.                       | _____           | _____   |                              |  |  |
|  | 1.                       | _____           | _____   |                              |  |  |
|  | 1.                       | _____           | _____   |                              |  |  |

### Section C – Shipping Information

#### Packaging and Shipping Instructions:

1. Please ensure products for this RMA Request are returned in one shipment with all required documentation. CDI is not responsible for the loss of product(s) as a result of multiple customer shipments using one RMA Number.
2. All RMA products should be shipped to:  
(Please DO NOT include CDI employee names on the outside of RMA packaging)
3. Product(s) must be returned in the condition in which they were received. Modifications or damage may void warranty.
4. Please follow proper ESD guidelines for packaging product returns. All products must be enclosed in protective ESD bags to prevent damage. Use original CDI packaging if possible.

**Computer Dynamics**  
**ATTN RMA # \_\_\_\_\_**  
**7640 Pelham Road**  
**Greenville, S.C. 29615**  
**United States**

If **Product Operationally Defective**, please complete **Section D** for each **Serial Number** being returned to help us more quickly troubleshoot the reported problem. **Please attach additional pages if needed.**

### Section D – Product Operationally Defective

Has Serial # previously been returned to CDI on an RMA?  YES  NO  Unknown

If YES, please provide RMA #:

Please explain reason for previous return:

Operating System & Other Software Components (If Applicable):

Was product functional upon arrival?  YES  NO

Will product boot properly?  YES  NO  N/A

Are multiple Serial Numbers of the same Part Number exhibiting similar problem(s)?  YES  NO

If YES to any of these, has CDI Technical Support been contacted to report problem?  YES  NO

If YES, please list Technical Support Case #:

Did problem occur during first installation?  YES  NO

Have there been any customer-performed modifications to product hardware or software?  YES  NO

If YES, please explain:

Have there been any changes to your system that could have resulted in problem?  YES  NO

If YES, please explain:

Has a system problem been resolved by substituting for a known working product?  YES  NO

Is the problem related to:  Hardware Functionality  Software Functionality  Unknown

Is the problem:  Intermittent  Constant  Unknown

Is the problem typically observed at: (Please Check All That Apply)

High Temperature  Low Temperature  Nominal Temperature  Temperature Transitions  Unknown

Briefly explain any installation, testing or troubleshooting procedures your company performed prior to product return (Environmental Stress Screening (ESS) testing, putting product into an identical or separate system, substituting cables or power supply, etc.):

Briefly explain any additional information that could be helpful to our technicians in testing, diagnosing or repeating the problem (Error messages received, LED status, etc. Please attach any photos, diagrams, test results, programs or code fragments that further demonstrate problem and return with this form):

A standard RMA Report with technician findings and repairs performed (if applicable) is provided for RMA returns. If you require more detailed information, please specify requirements below: (Detailed requests will be provided for products returned for quality defects only. Additional charges may apply, regardless of warranty status)

## 6. Appendix A

### 6.1. VGA Input Format

#### 6.1.1. 17"/18"/19" LCD SXGA/XGA Modes

| Input mode | Resolution  | Zoom to 1024x768 | Zoom to 1280x1024 |
|------------|-------------|------------------|-------------------|
| SXGA       | 1280x1024   | N/A              | 1:1               |
| XGA        | 1024x768    | 1:1              | Scale up          |
| SVGA       | 800x600     | Scale up         | Scale up          |
| VGA        | 640x480     | Scale up         | Scale up          |
| DOS (TEXT) | 640x400     | Scale up         | Scale up          |
| DOS (EGA)  | 640x350     | Scale up         | Scale up          |
| TEXT       | 720x400     | Scale up         | Scale up          |
| MAC        | 832x624     | N/A              | N/A               |
| NTSC       | 720x(240x2) | De-interlaced    | De-interlaced     |
| PAL        | 720x(288x2) | De-interlaced    | De-interlaced     |

#### 6.1.2. 13.3"/14.1"/15.4" LCD Modes

| Input mode | Resolution  | Zoom to 1280x1024 |
|------------|-------------|-------------------|
| WXGA       | 1280x800    | 1:1               |
| XGA        | 1024x768    | Scale up          |
| SVGA       | 800x600     | Scale up          |
| VGA        | 640x480     | Scale up          |
|            | 720x400     | Scale up          |
| DOS (TEXT) | 640x400     | Scale up          |
| DOS (EGA)  | 640x350     | Scale up          |
| NTSC       | 720x(240x2) | De-interlaced     |
| PAL        | 720x(288x2) | De-interlaced     |

\*De-interlaced means interlaced video signal fits to the panel resolution, and the starting lines on the panel are different to compensate the offset of even and odd fields.

#### 6.1.3. 15"/15.1" LCD Modes

| Input mode | Resolution  | Zoom to 1280x1024 |
|------------|-------------|-------------------|
| XGA        | 1024x768    | Scale up          |
| SVGA       | 800x600     | Scale up          |
| VGA        | 640x480     | Scale up          |
| DOS (TEXT) | 640x400     | Scale up          |
| DOS (EGA)  | 640x350     | Scale up          |
| TEXT       | 720x400     | Scale up          |
| MAC        | 832x624     | HQ scale up       |
| NTSC       | 720x(240x2) | De-interlaced     |
| PAL        | 720x(288x2) | De-interlaced     |

## 7. Appendix B

### 7.1. Separate RGB Video Signal (VGA) Input Timing

Input Timing Range: H: 30 to 80 KHz; V: 50 to 75 Hz

#### 7.1.1. 17"/18"/19" SXGA LCD Resolution Modes

| Mode    | Resolution | H-Freq.<br>(KHz) | V-Freq.<br>(Hz) |
|---------|------------|------------------|-----------------|
| Mode 1  | 640x350    | 31.5             | 70              |
| Mode 2  | 640x400    | 31.5             | 70              |
| Mode 3  | 640x480    | 31.5             | 60              |
| Mode 4  | 640x480    | 37.9             | 72              |
| Mode 5  | 640x480    | 37.5             | 75              |
| Mode 6  | 720x400    | 31.47            | 70              |
| Mode 7  | 800x600    | 35.1             | 56              |
| Mode 8  | 800x600    | 37.9             | 60              |
| Mode 9  | 800x600    | 48.1             | 72              |
| Mode 10 | 800x600    | 46.9             | 75              |
| Mode 11 | 1024x768   | 48.4             | 60              |
| Mode 12 | 1024x768   | 56.5             | 70              |
| Mode 13 | 1024x768   | 60.0             | 75              |
| Mode 14 | 1280x1024  | 64.0             | 60              |
| Mode 15 | 1280x1024  | 80.0             | 75              |

#### 7.1.2. 12.1"/10.4"/8.4" SVGA LCD Resolution Modes

| Mode    | Resolution | H-Freq.<br>(KHz) | V-Freq.<br>(Hz) |
|---------|------------|------------------|-----------------|
| Mode 1  | 640x350    | 31.5             | 70              |
| Mode 2  | 640x400    | 31.5             | 70              |
| Mode 3  | 640x480    | 31.5             | 60              |
| Mode 4  | 640x480    | 37.9             | 72              |
| Mode 5  | 640x480    | 37.5             | 75              |
| Mode 6  | 720x400    | 31.47            | 70              |
| Mode 7  | 800x600    | 35.1             | 56              |
| Mode 8  | 800x600    | 37.9             | 60              |
| Mode 9  | 800x600    | 48.1             | 72              |
| Mode 10 | 800x600    | 46.9             | 75              |

### 7.1.3. 15"/15.1"/12.1" XGA LCD Resolution Modes

| Mode    | Resolution | H-Freq. (KHz) | V-Freq. (Hz) |
|---------|------------|---------------|--------------|
| Mode 1  | 640x350    | 31.5          | 70           |
| Mode 2  | 640x400    | 31.5          | 70           |
| Mode 3  | 640x480    | 31.5          | 60           |
| Mode 4  | 640x480    | 37.9          | 72           |
| Mode 5  | 640x480    | 37.5          | 75           |
| Mode 6  | 720x400    | 31.47         | 70           |
| Mode 7  | 800x600    | 35.1          | 56           |
| Mode 8  | 800x600    | 37.9          | 60           |
| Mode 9  | 800x600    | 48.1          | 72           |
| Mode 10 | 800x600    | 46.9          | 75           |
| Mode 11 | 1024x768   | 48.4          | 60           |
| Mode 12 | 1024x768   | 56.5          | 70           |
| Mode 13 | 1024x768   | 60.0          | 75           |

### 7.1.4. 10.4"/8.4"/6.4" VGA LCD Resolution Modes

| Mode   | Resolution | H-Freq. (KHz) | V-Freq. (Hz) |
|--------|------------|---------------|--------------|
| Mode 1 | 640x350    | 31.5          | 70           |
| Mode 2 | 640x400    | 31.5          | 70           |
| Mode 3 | 640x480    | 31.5          | 60           |
| Mode 4 | 640x480    | 37.9          | 72           |
| Mode 5 | 640x480    | 37.5          | 75           |

### 7.1.5. 6.4" VGA LCD Resolution Modes

| Mode   | Resolution | H-Freq. (KHz) | V-Freq. (Hz) |
|--------|------------|---------------|--------------|
| Mode 1 | 640x480    | 31.5          | 60           |

### 7.1.6. 7" WVGA LCD Resolution Modes

| Mode   | Resolution | H-Freq. (KHz) | V-Freq. (Hz) |
|--------|------------|---------------|--------------|
| Mode 1 | 640x350    | 31.5          | 70           |
| Mode 2 | 640x400    | 31.5          | 70           |
| Mode 3 | 640x480    | 31.5          | 60           |
| Mode 4 | 640x480    | 37.9          | 72           |
| Mode 5 | 640x480    | 37.5          | 75           |
| Mode 6 | 800x480    | 31.5          | 60           |

Note: The maximum supporting resolution depends on panel specifications; this table is for your reference.

### 7.1.7. 17"/23" WXGA LCD Resolution Modes

| Mode    | Resolution | H-Freq. (KHz) | V-Freq. (Hz) |
|---------|------------|---------------|--------------|
| Mode 1  | 640x350    | 31.5          | 70           |
| Mode 2  | 640x400    | 31.5          | 70           |
| Mode 3  | 640x480    | 31.5          | 60           |
| Mode 4  | 640x480    | 37.9          | 72           |
| Mode 5  | 640x480    | 37.5          | 75           |
| Mode 6  | 720x400    | 31.47         | 70           |
| Mode 7  | 800x600    | 35.1          | 56           |
| Mode 8  | 800x600    | 37.9          | 60           |
| Mode 9  | 800x600    | 48.1          | 72           |
| Mode 10 | 800x600    | 46.9          | 75           |
| Mode 11 | 1024x768   | 48.4          | 60           |
| Mode 12 | 1024x768   | 56.5          | 70           |
| Mode 13 | 1024x768   | 60.0          | 75           |
| Mode 14 | 1280x768   | 48.4          | 60           |
| Mode 15 | 1280x768   | 56.5          | 70           |
| Mode 16 | 1280x768   | 60.0          | 75           |

### 7.1.8. 13.3"/14.1/15.4" WXGA LCD Resolution Modes

| Mode    | Resolution | H-Freq. (KHz) | V-Freq. (Hz) |
|---------|------------|---------------|--------------|
| Mode 1  | 640x480    | 31.5          | 60           |
| Mode 2  | 640x480    | 37.9          | 72           |
| Mode 3  | 640x480    | 37.5          | 75           |
| Mode 4  | 720x400    | 31.47         | 70           |
| Mode 5  | 800x600    | 35.1          | 56           |
| Mode 6  | 800x600    | 37.9          | 60           |
| Mode 7  | 800x600    | 48.1          | 72           |
| Mode 8  | 800x600    | 46.9          | 75           |
| Mode 9  | 1024x768   | 48.4          | 60           |
| Mode 10 | 1024x768   | 56.5          | 70           |
| Mode 11 | 1024x768   | 60.0          | 75           |
| Mode 12 | 1280x800   | 48.4          | 60           |

## 7.2. DVI Input Timing (optional)

Input Timing Range: H: 31.47 to 80 KHz; V: 60 Hz

| Mode   | Resolution | H-Freq. (KHz) | V-Freq. (Hz) |
|--------|------------|---------------|--------------|
| Mode 1 | 640x480    | 31.47         | 60           |
| Mode 2 | 800x600    | 37.87         | 72           |
| Mode 3 | 1024x768   | 48.36         | 75           |
| Mode 4 | 1280x800   | 64.0          | 70           |

## 8. Appendix C RS-232 Command Code (optional)

### 8.1. RS-232 Settings

Baud Rate – 9600, Data Bits – 8, Parity – None, Stop Bits -1

| No. | Function          | Length | Command | Index | Value  | Checksum(*1)   |
|-----|-------------------|--------|---------|-------|--|--|
| 1   | Power             | 0x05   | 0x40    | 0x00  | 0=Power On<br>1=Power Off                        | 0xBB=Power On<br>0xBA=Power Off                              |
| 2   | Auto              | 0x05   | 0x40    | 0x01  | 0=Auto   | 0xBA=Auto  |
| 3   | Recall            | 0x05   | 0x40    | 0x02  | 0=Recall   | 0xB9=Recall  |
| 4   | White Balance     | 0x05   | 0x40    | 0x03  | 0=White Balance                                  | 0xB8=White Balance   |
| 5   | Mail Input Source | 0x05   | 0x40    | 0x04  | 0=VGA<br>1=DVI<br>2=CVBS<br>3=S-Video            | 0xB7=VGA<br>0xB6=DVI<br>0xB5=CVBS<br>0xB4=S-Video            |
| 6   | Brightness        | 0x05   | 0x40    | 0x10  | 0x00 to 0x64                                     | 0xAB=00 to 0x47=100  |
| 7   | Contrast          | 0x05   | 0x40    | 0x11  | 0x00 to 0x64                                     | 0xAA=00 to 0x46=100  |
| 8   | Hue               | 0x05   | 0x40    | 0x12  | 0x00 to 0xFF                                     | 0xA9=00 to 0x56=100  |
| 9   | Saturation        | 0x05   | 0x40    | 0x13  | 0x00 to 0x64                                     | 0xA8=0 to 0x44=100   |
| 10  | Gamma             | 0x05   | 0x40    | 0x31  | 0=Gamma 0<br>1=Gamma 1<br>2=Gamma 2<br>3=Gamma 3 | 0x8A=Gamma 0<br>0x89=Gamma 1<br>0x88=Gamma 2<br>0x87=Gamma 3 |
| 11  | Color Temperature | 0x05   | 0x40    | 0x32  | 0=user<br>1=9300K<br>2=6500K                     | 0x89=User<br>0x88=9300K<br>0x87=6500K                        |
| 12  | Color-R           | 0x05   | 0x40    | 0x33  | 0x00 to 0x64                                     | 0x88=00 to 0x24=100  |
| 13  | Color-G           | 0x05   | 0x40    | 0x34  | 0x00 to 0x64                                     | 0x87=00 to 0x23=100  |
| 14  | Color-B           | 0x05   | 0x40    | 0x35  | 0x00 to 0x64                                     | 0x86=00 to 0x22=100  |
| 15  | Volume            | 0x05   | 0x40    | 0x50  | 0x00 to 0x1F                                     | 0x6B=00 to 0x4C=31   |
| 16  | Mute              | 0x05   | 0x40    | 0x54  | 0=Mute On<br>1=Mute Off                          | 0x67=Mute On<br>0x66=Mute Off                                |

| Reply Value |        |                     |
|-------------|--------|---------------------|
| ACK         | 3 C F1 | Transmission PASS   |
| NSP         | 3 D F2 | Transmission FAILED |

Format: Length, Command, index, Value, Checksum

Example: 0x05, 0x40, 0x00, 0x01, 0xb a=> Power Off system.

\*1: checksum is 2's complement of sum of length and all messages.

## 8.2. Using RS-232 Command Code to Check System Status

| Function          | Length | Command | Index | Checksum(*1)        | Length | Index | Value  | Checksum(*1)   |
|-------------------|--------|---------|-------|---------------------|--------|-------|--|--|
| Power             | 0x04   | 0x30    | 0x00  | 0xCC<br>1=Power Off | 0x004  | 0x00  | 0=Power On<br>1=Power off                        | 0xFC=Power On<br>0xFB=Power Off                              |
| Main Input Source | 0x04   | 0x30    | 0x04  | 0xC8                | 0x04   | 0x04  | 0=VGA<br>1=DVI<br>2=CVBS<br>3=S-Video            | 0xF8=VGA<br>0xF7=DVI<br>0xF6=CVBS<br>0xF5=S-Video            |
| Brightness        | 0x04   | 0x30    | 0x10  | 0xBC                | 0x04   | 0x10  | 0x00-0x64  | 0xEC=0<br>0x88=100   |
| Contrast          | 0x04   | 0x30    | 0x11  | 0xBB                | 0x04   | 0x11  | 0x00-0x64  | 0xEB=0<br>0x87=100   |
| Hue               | 0x04   | 0x30    | 0x12  | 0xBA                | 0x04   | 0x12  | 0x00-0xFF  | 0xEA=0<br>0x27=255   |
| Saturation        | 0x04   | 0x30    | 0x13  | 0xB9                | 0x04   | 0x13  | 0x00-0x64  | 0xE9=0<br>0x485=100  |
| Gamma             | 0x04   | 0x30    | 0x31  | 0x9B                | 0x04   | 0x31  | 0=Gamma 0<br>1=Gamma 1<br>2=Gamma 2<br>3=Gamma 3 | 0xCB=Gamma 0<br>0xCA=Gamma 1<br>0xC9=Gamma 2<br>0xC8=Gamma 3 |
| Color Temp        | 0x04   | 0x30    | 0x32  | 0x9A                | 0x04   | 0x32  | 0=user<br>1=9300K<br>2=6500K                     | 0xCA=User<br>0xC9=9300K<br>0xC8=6500K                        |
| Color-R           | 0x04   | 0x30    | 0x33  | 0x99                | 0x04   | 0x33  | 0x00-0x64  | 0xC9=0<br>0x65=100   |
| Color-G           | 0x04   | 0x30    | 0x34  | 0x98                | 0x04   | 0x34  | 0x00-0x64  | 0xC8=0<br>0x64=100   |
| Color-B           | 0x04   | 0x30    | 0x35  | 0x97                | 0x04   | 0x35  | 0x00-0x64  | 0xC7=0<br>0x63=100   |
| Volume            | 0x04   | 0x30    | 0x50  | 0x7C                | 0x04   | 0x50  | 0x00-0x1F  | 0xAC=0<br>0x8D=31  |
| Mute              | 0x04   | 0x30    | 0x54  | 0x78                | 0x04   | 0x54  | 0=Mute On<br>1=Mute Off                          | 0xA8=Mute On<br>0xA7=Mute Off                                |

| Reply Value |                      |                     |
|-------------|----------------------|---------------------|
| ACK         | Acknowledgement code | Transmission PASS   |
| NSP         | 3 D F2               | Transmission FAILED |

Format: Length, Command, Index, Checksum / Length, Index, Value, Checksum

Example: 0x04, 0x30, 0x00, 0xCC=> Check Power status

If Reply is 0x04, 0x00, 0x00, 0xFC=> System power on

\*1: checksum is 2's complement of sum of length and all messages.

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