

FCC/MELLON JUL 20 1998

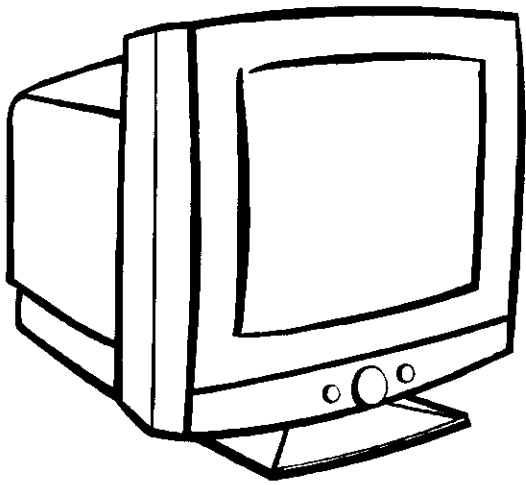
EXHIBIT 5

User's Manual

User's Manual

AOC

The *Spectrum* Series



Model No: 5Glr / 5Glr+
5GlrA / 5GlrA+

Owner's Manual

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Packing Lists

The following list contains all items included in the package:

1. Monitor
2. Owner's Manual
3. Power Cord (Refer to the "using the right power cord" statement)
4. Swivel Base
5. Audio Cable (For 5GlrA/5GlrA⁺ only)

- Plug & Play Driver for AOC Spectrum Series Monitors is available On
AOC Web Site: www.aocLtd.com

GENERAL DESCRIPTION

Before operating the monitor please read this manual thoroughly. This manual should be retained for future reference.

Power Saving Feature

This monitor meets the Power Management standards as set by the Video Electronics Standards Association (VESA) and/or the United States Environmental Protection Agency (EPA) and The Swedish Confederation Employees (NUTEK). This feature is designed to conserve electrical energy by reducing power consumption when there is no video input signal present. When there is no video input signal this monitor, following a time-out period, will automatically switch to an OFF mode. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature except the display is completely off. The display is restored by pressing a key on the keyboard, or clicking the mouse.

- The monitor has the power saving function following the VESA DPMS. If your PC system is Green PC, the monitor can act as Green Monitor. Otherwise it is just a normal monitor.
- The power saving states can be indicated by the light-emitting diode (LED) on the front panel:

Mode	Signal				Power	
	Cable	H-Sync	V-Sync	Video	Indicator	Consumption
On*	Attach	Yes	Yes	Activated	Green	≤ 100 W
Stand-by	Attach	No	Yes	Blanked	Amber	≤ 15 W
Suspend	Attach	Yes	No	Blanked	Amber	≤ 15 W
Off	Attach	No	No	Blanked	Amber	≤ 5 W

THIS MONITOR WILL APPEAR TO BE NON-FUNCTIONAL IF THERE IS NO VIDEO INPUT SIGNAL. IN ORDER FOR THIS MONITOR TO OPERATE PROPERLY, THERE MUST BE A VIDEO INPUT SIGNAL.

Plug & Play DDC1/2B Feature(Comply with Windows 95 Plug & Play)

This monitor is equipped with VESA DDC1/2B according to VESA DDC STANDARD. It will allow the monitor to inform the host system about its identity and, depending on the level of DDC used, communicate additional levels of display capabilities. The communication channel is defined in two levels, one DDC1 and one DDC2B.

The DDC1 is a un-bidirectional data channel from the Display to the Host, continuously transmitting EDID information. The DDC2B is a bidirectional data channel based on the I²C protocol. The host can request EDID information over the DDC2B channel.

FCC Class B Radio Frequency Interference Statement

WARNING: (FOR FCC CERTIFIED MODELS)

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.
3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. It is the responsibilities of the user to correct such interference.

Warning:

To prevent fire or shock hazard, do not expose the monitor to rain or moisture. Dangerously high voltages are present inside the monitor. Do not open the cabinet. Refer servicing to qualified personnel only.

Safety Precautions

- Do not use the monitor near water, for example near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
- Do not place the monitor on an unstable cart, stand or table. If the monitor falls, it could injure a person or cause serious damage to the appliance. Use only a cart or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-wire grounded plug, a plug with a third (grounding) pin. This plug will fit only into a grounded power outlet. This is a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- To protect the monitor during a lightening storm or when it is left unattended and unused for long periods of time, unplug it from the system unit. This will prevent damage to the monitor from lightening and power surges.
- Do not overload power outlet and extension cords. Overload can result in fire or electric shock.
- Never push any object into the slot in the monitor cabinet. It could touch dangerous voltage points or short out parts resulting in a fire or electric shock. Never spill liquid on the monitor.
- Do not attempt to service the monitor yourself; opening or removing covers can expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- To ensure satisfactory operation, use the monitor only with UL Listed computers which have appropriate configured receptacles marked between 100 - 240 VAC, Min. 1.5A.

TECHNICAL INFORMATION

SPECIFICATIONS	
CRT	38cm(15"), 90° deflection, 29mm neck. 0.28mm dot pitch non-glare screen.
Viewable Image Size	35cm (13.8"), diagonal
Display Color	Unlimited colors
• Analog input	
Input Signal	All timing that meet scanning frequency Specification
• Video	• Analog R, G, B 0.7Vpp positive/75 ohm
• Sync.	• Horizontal sync. : Positive/Negative • Vertical sync. : Positive/Negative
Synchronization	
• Horizontal	30KHz to 69KHz automatically
• Vertical	50Hz - 120Hz automatically
Resolution	1280 X 1024 Max.
Video bandwidth	100MHz
Factory Preset Timings :	9
User mode Timings :	8
Misconvergence	
• Center	0.3mm Max.
• Corner	0.4mm Max.
Power Source	Switching mode power supply AC 100-240V, 50Hz/60Hz full range
Operating	0°C to 40°C ambient
Humidity	10% to 85% relative, non-condensing
Weight	12.5Kgs(Net), 14.5Kgs(Gross)
Dimensions	
• Monitor	360(W) X 364(H) X 385(D)mm
• Carton	460(W) X 425(H) X 494(D)mm
Signal Cable	15 pin mini D-Sub

External Controls: Switch	<ul style="list-style-type: none"> • Power On/Off Switch • Shuttle Knob • Standby Power Switch • OSD Key (5Glr/5Glr+ only) or Audio Mute Key (5GlrA/5GlrA+only)
Functions (OSD)	<ul style="list-style-type: none"> • Contrast • H-Size • V-Size • Pincushion • H-Moire cancel • Zoom • 6500°K • Rotation • Recall • Volume (for 5GlrA / 5GlrA⁺ only) • Brightness • H-Center • V-Center • Trapezoid • V-Moire cancel • User color • 9300°K • Degaussing • Exit
Plug & Play	DDC1/2B (Designed for Microsoft Windows 95)
Power management	EPA , VESA , DPMS
Power consumption	100 Watts (Maximum)
Preset display area	260mm × 195mm
Speaker (5GlrA / 5GlrA ⁺ only)	
• Rate power	2W (side per channel) 0.6W(front per channel)
• Impedance	16Ω (side per channel) 32 Ω (front per channel)
Audio (5GlrA /5GlrA ⁺ only)	
• Audio output	0.7W (side per channel) 0.35W (front per channel)
• Frequency response	100Hz ~ 15KHz @ ± 3dB
• Distortion	< 3%
• Input sensitivity	0.9Vpp ~ 1.1Vpp
Regulations	UL, CSA, DHHS, FCC-B, TÜV / GS, CE TÜV/MPR-II, TCO'92 or TCO'95 (5Glr ⁺ /5GlrA ⁺ only)

FACTORY PRESET TIMING TABLE

Timing	VGA 640 X 480 60Hz	IBM 720 X 400 70Hz	VESA 640 X 480 75Hz	VESA 640 X 480 85Hz
Mode	1.	2.	3.	4.
Resolution	640 X 480	720 X 400	640 X 480	640 X 480
H-Polarity	Negative	Negative	Negative	Negative
V-Polarity	Negative	Positive	Negative	Negative
Hori. Freq.	31.47KHz	31.47KHz	37.5KHz	43.3KHz
Vert. Freq.	60Hz	70Hz	75Hz	85Hz

VESA EVGA 800 X 600 75Hz	VESA EVGA 800 X 600 85Hz	VESA EVGA 1024 X 768 75Hz	VESA EVGA 1024 X 768 85Hz	VESA EVGA 1280 X 1024 60Hz
5.	6.	7.	8.	9.
800 X 600	800 X 600	1024 X 768	1024 X 768	1280 X 1024
Positive	Positive	Positive	Positive	Positive
Positive	Positive	Positive	Positive	Positive
46.875KHz	53.67KHz	60.02KHz	68.6KHz	63.8KHz
75Hz	85Hz	75Hz	85Hz	60Hz

Notes

- Do not install the monitor in a location near heat sources such as radiators or airducts, or in a place subject to direct sunlight, or excessive dust or mechanical vibration or shock.
- Save the original shipping carton and packing material. They will come in handy if you ever have to ship your monitor.
- For maximum protection, repack your monitor as it was originally packed at the factory.
- To keep the monitor looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzene or abrasive cleaners, since these will damage the cabinet. As a safety precaution, always unplug the monitor before cleaning it.

OPERATION

The power switch is located at rear side base of the monitor (See Figure 4). Press the power switch to turn the monitor on or off. The other control knobs are located at the base of the monitor (See Figure 1). User could make a good appearance of the monitor to suit personal preference by press these controls.

- The power cord should be connected.
- Connect signal cable from monitor to PC D-type output jack.
- To turn the monitor on, press the POWER switch to ON position. The power indicator will light up.
- Your monitor features a unique quick switch system which provides a picture within seconds after the monitor is switched on. Unlike conventional instant picture system, there is absolutely no power consumption when the monitor is not in use.

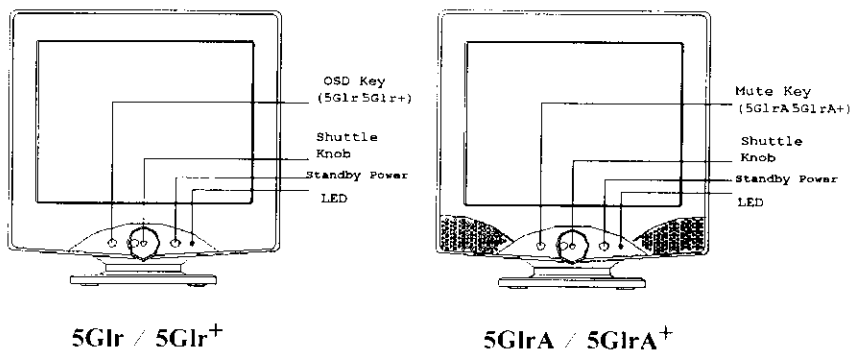


Figure 1 External Control Knob

Front Panel Control

- **Standby power:**
Press the key, monitor enter off mode. LED appear amber and flash.
Press the key again and keep 0.8s, monitor restore normal status.
- **Shuttle Knob :**
To Control functions of the monitor. Rotate to switch the function or adjust . Press to select a function or execute the function .
- **OSD key(5Glr/5Glr⁺ only) or Mute Key(5GlrA/5GlrA⁺ only)**
5Glr / 5Glr⁺: Press the OSD Key , active OSD window , or exit OSD window and save data .
5GlrA/5GlrA⁺: When Audio is normal, press the Audio mute key it will be mute . When Audio is mute, press the key , it will be normal.

How to Adjust a setting

1. Press the Shuttle Knob or OSD Key (5Glr/5Glr⁺ only) to show the OSD window. See figure 2.
2. Rotate the Shuttle Knob to select the desired function. See figure 2.
3. Press the shuttle Knob again to select the function that you want to adjust.
4. Rotate the shuttle Knob to change the adjustment of the selected function.
5. The OSD window will go out and the new setting has automatically been saved, if you press the OSD Key (5Glr / 5Glr⁺ only) or the EXIT symbol is selected or do not change any other setting after approx 10 seconds.
If you want to adjust other function, repeat steps 2~5.
6. When the OSD window active, it shows the Input signal timing. The "H" is for the horizontal frequency and "V" for the Vertical frequency.
7. If you do not change any other setting , the OSD window will go out after 10 seconds . The new setting has automatically been saved , if not you can select the EXIT to end adjustment.

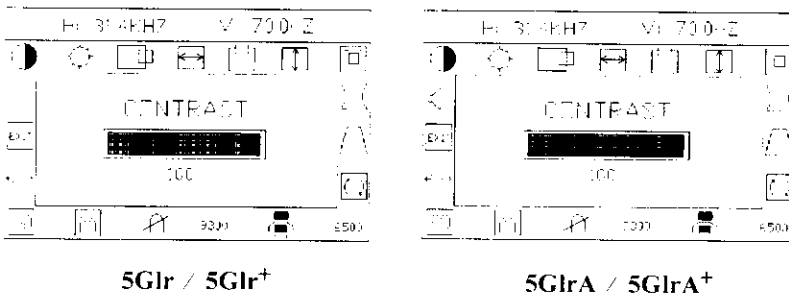



















Figure 2 The OSD Message

Adjust the picture

- A. CONTRAST**  :
Rotate the Shuttle Knob clockwise to increase Contrast and counter-clockwise to decrease.
- B. BRIGHTNESS**  :
Rotate the Shuttle Knob clockwise to increase Brightness and counter-clockwise to decrease.
- C. H-CENTER**  :
Rotate the Shuttle Knob clockwise to reposition display to the right and counter-clockwise to the left.
- D. H-SIZE**  :
Rotate the Shuttle Knob clockwise to enlarge horizontal size and counter-clockwise to reduce.

- E. V-CENTER**  :
- Rotate the Shuttle Knob clockwise to move the entire picture upward and counter-clockwise to downward.
- F. V-SIZE**  :
- Rotate the Shuttle Knob clockwise to enlarge vertical size and counter-clockwise to reduce.
- G. ZOOM**  :
- Rotate the Shuttle Knob clockwise to enlarge picture size and counter-clockwise to reduce.
- H. PINCUSHION**  :
- Rotate the Shuttle Knob clockwise or counter-clockwise for optimal pincushion or Barrel picture.
- I. TRAPEZOID**  :
- Rotate the Shuttle Knob clockwise or counter-clockwise for optimal square picture.
- J. ROTATION**  :
- Rotate the Shuttle Knob clockwise or counter-clockwise for optimal tilt screen picture.
- K. H-MOIRE CANCEL**  :
- Rotate the Shuttle Knob clockwise or counter-clockwise to change H-moire cancel function status.
- L. V-MOIRE CANCEL**  :
- Rotate the Shuttle Knob clockwise or counter-clockwise to change V-moire cancel function status.
- M. DEGAUSSING**  :
- Select this function and press the Shuttle Knob for manual degaussing.
- N. 9300°K/6500°K**
- The colour temperature for 9300°K is $x=0.281$, $y=0.311$ and 6500°K is $x=0.313$, $y=0.329$. It presents two different colour on the screen. You can select 9300°K or 6500°K by pressing the shuttle Knob.
- O. VOLUME (for 5GlrA/5GlrA⁺ only)**  :
- Rotate the Shuttle Knob clockwise or counter-clockwise to increase or decrease volume.
- P. USER COLOR (Red / Blue)**  :
- Rotate the Shuttle Knob clockwise or counter-clockwise to increase or decrease R/B gain and get the user's setting colour.
- Q. RECALL**  :
- It is used to recall the factory preset value among the 9 preset timing modes. Besides the 9 pre-set timing modes. It can't be recalled when it is defined as the user's modes.
- R. EXIT**  :
- Select the EXIT and press shuttle Knob to exit the OSD windows.

Using the Right Power Cord

The accessory Power Cord for the Northern American region is the wallet plug with NEMA 5-15 style and is UL Listed and CSA Labeled. The voltage rating for the Power Cord shall be 125 volts AC.

Supplied with Units Intended for Connection to Power outlet of Personal Computer: Please use a cord set consisting of a minimum No. 18 AWG, type SJT or SVT three conductors flexible cord. One end terminates with a grounding type attachment plug, rated 10A, 250V, CEE-22 male configuration. The other end terminates with a molded-on type connector body, rated 10A, 250V, having standard CEE-22 female configuration.

INSTALLING AND REMOVING THE SWIVEL BASE

To attach the swivel base to the monitor, do the following:

- Carefully turn the monitor on its side or upside down.(see figure 3)
- Locate the cavities at the bottom front of the monitor.
- Insert the pegs on the swivel base into these cavities. Push the swivel base forward until the swivel base locks in place.
- Turn the monitor right-side UP and begin to install the monitor.
- To remove the swivel base, hold the bottom of the swivel base, then push it out. User can easily lift off the swivel base from the monitor body.

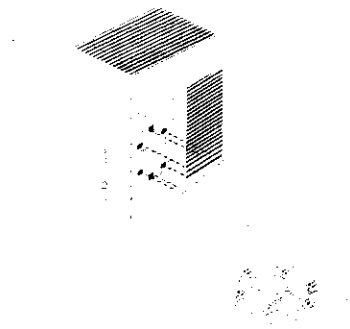


Figure 3 Installing and Removing the Swivel Base

EXTERNAL CONTROLS AND CONNECTORS

Connecting the Video Cable: the monitor comes with a built-in video cable. Plug the signal cable's 15-pin connector into the computer's video port and tighten the two screws on the cable connector. (see figure 4)

Connecting the Power Cord: Plug the power cord into the monitor's AC power jack. Then plug the power cord into a grounded AC outlet or UL-approved power strip or the power output socket on your PC.

Caution: *If the AC outlet is not grounded (only two holes), install the proper grounding adapter (not supplied).*

Connecting the Earphone Cable (5GlrA/5GlrA⁺ only): Plug earphone cable into earphone output jack.

Connecting the Audio Cable (5GlrA/5GlrA⁺ only): Plug audio cable between the computer multi-media (or sound) card's audio output and monitor's audio input.

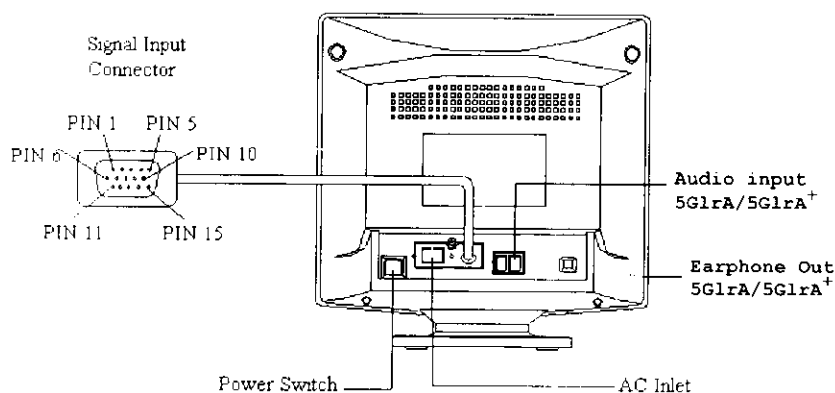


Figure 4 Connecting Cables

Video Cable Pin Assignments:

1. Red	5. Ground	9. NC	13. H-sync
2. Green	6. R-Ground	10. Ground	14. V- sync / * VCLK
3. Blue	7. G-Ground	11. Monitor Ground	15. DDC-Serial Clock
4. Ground	8. B-Ground	12. DDC-Serial Data	* FOR DDC

LIMITED THREE-YEAR WARRANTY

for AOC Color Monitors

Including those Sold within the European Countries as Specified

AOC International warrants this product to be free from defects in material and workmanship for a period of three (3) years after the original date of consumer purchase. During this period, AOC International will, at its option, either repair the defective product with new or rebuilt parts, or replace it with a new or rebuilt product at no charge except as *stated below. The parts or product that are replaced become the property of AOC International (USA) Ltd.

In the USA to obtain service under this limited warranty, call AOC International for the name of the Authorized Service Center in your area. Deliver the product freight pre-paid, along with the dated proof of purchase, to the AOC Authorized Service Center. If you cannot deliver the product in person:

- Pack it in its original shipping container (or equivalent)
- Put the RMA number on the address label
- Put the RMA number on the shipping carton
- Insure it (or assume the risk of loss / damage during shipment)
- Pay all shipping charges

AOC International is not responsible for damage to inbound product that was not properly packaged.

AOC International will pay the return shipment charges within one of the countries specified within this warranty statement. AOC International is not responsible for any costs associated with the transportation of product across international borders. This includes the international borders of the countries within this warranty statements.

In the United States contact your Dealer or AOC International Customer Service. RMA Department at the toll free number (800) 775-1262.

In Canada, Europe (this warranty is valid in the member countries of the European Community). Contact your Dealer, Reseller, Distributor or the organization where you obtained your monitor in case of problems during the warranty period in order to receive factory level approved service. In Europe all repairs will be done at AOC Authorized Service Centers similar to the ones in the USA.

* This limited warranty does not cover any losses or damages that occur as a result of:

- Shipping or improper installation or maintenance
- Misuse

- Neglect
- Any cause other than ordinary commercial or industrial application
- Adjustment by non-authorized source
- Repair, modification, or installation of options or parts by anyone other than an AOC Authorized Service Center
- Improper environment
- Excessive or inadequate heating or air conditioning or electrical power failures, surges, or other irregularities

This three-year limited warranty does not cover any of the product's firmware or hardware that you or any third party have modified or altered; you bear the sole responsibility and liability for any such modification or alteration.

ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT (INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE LIMITED IN DURATION TO A PERIOD OF THREE (3) YEARS FOR PARTS AND LABOR FROM THE ORIGINAL DATE OF CONSUMER PURCHASE. NO WARRANTIES (EITHER EXPRESSED OR IMPLIED) APPLY AFTER THIS PERIOD. IN THE UNITED STATES OF AMERICA, SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

AOC INTERNATIONAL'S OBLIGATIONS AND YOUR REMEDIES HEREUNDER ARE SOLELY AND EXCLUSIVELY AS STATED HERE. AOC INTERNATIONAL'S LIABILITY, WHETHER BASED ON CONTRACT, TORT, WARRANTY, STRICT LIABILITY, OR OTHER THEORY, SHALL NOT EXCEED THE PRICE OF THE INDIVIDUAL UNIT WHOSE DEFECT OR DAMAGE IS THE BASIS OF THE CLAIM. IN NO EVENT SHALL AOC INTERNATIONAL BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE OR FACILITIES OR EQUIPMENT OR OTHER INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGE. IN THE UNITED STATES OF AMERICA, SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. ALTHOUGH THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, YOU MAY HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

In the United States of America, this limited warranty is only valid for Products purchased in the Continental United States, Alaska, and Hawaii.

Outside the United States of America, this limited warranty is only valid for Products purchased in Canada and the member countries of the European Union.