

GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

PHOTOGRAMMETRY

MECHANICAL/ARCHITECTURAL CAD

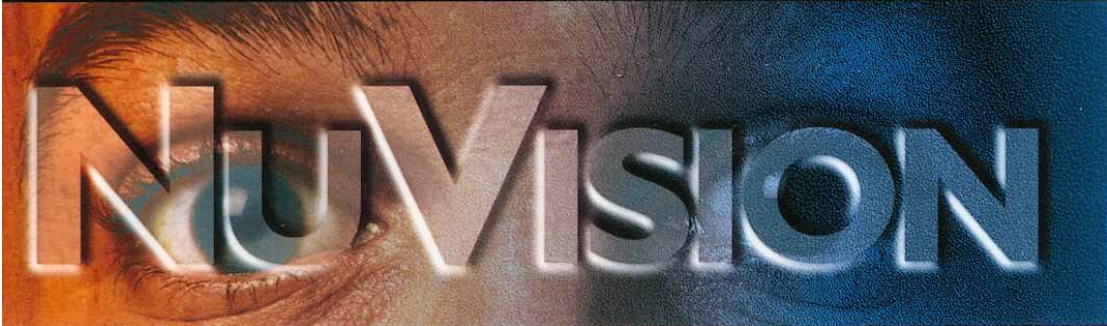
MEDICAL IMAGING

STEREOSCOPIC MICROSCOPY

MOLECULAR MODELING

3D ANIMATION

ROBOTICS



NUVISION 60GX
STEREOSCOPIC
WIRELESS GLASSES

NuVision
by MacNaughton, Inc.

NUVISION 60GX®

USER'S GUIDE



NuVision
by MacNaughton, Inc.

Printed in USA
Part # 061-0003-00 Rev B

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TRADEMARKS

NuVision 60GX is a registered trademark of MacNaughton, Inc. in the United States of America and other countries. Software included (if any) in this package is copyrighted by its manufacturer. COMPAQ, HP, SGI, SUN, Intergraph, StereoGraphics, CrystalEyes, SciTech, Display Doctor and all other trademarks are registered trademarks and are the property of their respective owners.

FCC WARNING

This equipment has been certified to comply with the limits for a Class A computing device, pursuant to Sub-part J of Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

INSTRUCTIONS TO USER

This equipment generates and uses radio frequency energy and, if not installed and used in accordance with this User's Guide, may cause interference to radio and television reception. It has been tested and found to comply with the limits for a class A computing device in accordance with the specifications in Sub-part J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. If this equipment does cause interference to radio or television reception, the user may try to correct the interference by one or more of the following measures:

- 1) Reorient the receiving antenna for the radio or television.
- 2) Relocate the equipment with respect to the receiver.
- 3) Plug the equipment into a different outlet so the equipment and receiver are on different branch circuits.
- 4) Fasten cables using mounting screws to ensure adequate EMI controls.

PRODUCT WARRANTY

NuVision 60GX Wireless LCD Glasses, IR Emitter, cables and adapters

MacNaughton, Inc. warrants that the products it manufactures and sells, of the types listed above, will be free from defects in materials and workmanship for a period of two (2) years from the date of shipment. If any such product proves defective during this warranty period, MacNaughton, Inc. will, at its option, either repair the defective product without charge for parts and labor, or provide a replacement in exchange for the defective product.

In order to obtain service under this warranty you, the customer, must notify MacNaughton, Inc. of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. You shall be responsible for packaging and shipping the defective product to the service center designated by MacNaughton, Inc., with shipping charges prepaid. MacNaughton, Inc. shall pay for the return of the product to the customer if the shipment is to a location within the country in which the MacNaughton, Inc. service center is located. The customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other location.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. MacNaughton, Inc. shall not be obligated to furnish service under this warranty:

- a) to repair damage resulting from attempts by personnel other than MacNaughton, Inc. representatives to install, repair or service the product;
- b) to repair damage resulting from improper use or connection to incompatible equipment; or
- c) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

What you must do.

You must inspect your NuVision 60GX Wireless Stereoscopic Glasses, IR Emitter, cables and adapters for damage before using them. If any of these items have been damaged in shipment, kindly notify the shipper immediately so action can be taken.

If, during the warranty period, you discover that your NuVision 60GX Wireless LCD Glasses, IR Emitter, cables and adapters are not as warranted you may be eligible for warranty service. To be eligible for warranty service, you must return the devices within 2 years of purchase accompanied by proof of purchase to:

**Customer Service Department
MacNaughton, Inc.
1815 NW 169th Place, #3060
Beaverton, OR 97006**

Before returning the devices for repair, you must obtain a Return Material Authorization (RMA) number by contacting our Customer Service Department at (503) 614-9000. Please pack the product(s) carefully, showing the RMA number on the outside of the box. If you do not obtain an RMA number, we will return the product without inspection or repair. Prepay and insure the package as we are not responsible for the product while en route to us. If you do not insure the product, you assume the risk of loss or damage in transit.

THE ABOVE WARRANTIES ARE GIVEN BY MACNAUGHTON, INC. WITH RESPECT TO THE LISTED PRODUCTS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. MACNAUGHTON, INC. AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. MACNAUGHTON, INC.'S RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE SOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR BREACH OF THIS WARRANTY. MACNAUGHTON, INC. AND ITS VENDORS WILL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER MACNAUGHTON, INC. OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

DECLARATION OF CONFORMITY

We:

MacNaughton, Inc.
1815 NW 169th Place, Suite 3060
Beaverton, Oregon 97006 USA

Declare under our sole responsibility that the:

NuVision 60GX Wireless LCD Glasses

to which this declaration relates are in conformity with the following standards:

EN 55022 (1998) Class A,
Information Technology Equipment Emission Standard

EN 55024 (1998)
Information Technology Equipment Immunity Standard
(60GX-NSR conforms to criteria C for ESD at video pass-through connector)

EN 60950: A11 : 1997

following the provisions of the following directives:

EMC Directive 89/336/EEC,
Amended by 93/68/EEC

Low Voltage Directive 73/23/EEC,
Amended by 93/68/EEC.

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CAUTIONS



Carefully read all the following warnings in this User's Guide before using the NuVision 60GX glasses.

Epilepsy and Seizures

If you have experienced symptoms linked to a seizure condition (e.g., having a seizure or a loss of awareness), consult your physician before using any type of computer software.

Stereoscopic viewing may cause temporary after-effects in your vision.

Your eyes adjust slightly to accommodate viewing through stereoscopic glasses. Wait a few moments after removing the NuVision 60GX glasses for your eyesight to return to normal before resuming your regular activities.

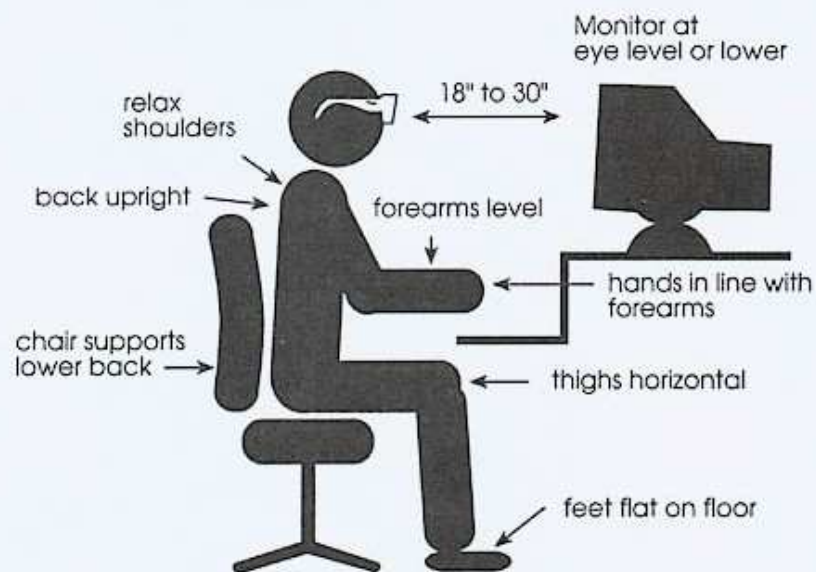
NuVision60GX glasses are not for use as safety glasses, or for use in an explosive atmosphere. Do not use NuVision 60GX glasses in circumstances where limiting your field of vision may be dangerous to you.

You may risk serious injury or death.

ERGONOMICS GUIDE

To reduce fatigue, personalize your working environment:

- ◆ Choose a chair that supports your back.
- ◆ Place your monitor at eye level or somewhat lower, about 18" to 30" away.
- ◆ Sit with your feet flat on the floor or on a footrest.
- ◆ Keep your hands in line with your forearms and keep your forearms parallel to the floor.
- ◆ Darken the room, or place the monitor perpendicular to the light source.
- ◆ Turn down the brightness on your monitor and increase the contrast.
- ◆ Keep the computer screen clean. Dust reduces 3D viewing accuracy.
- ◆ Note: NuVision 60GX glasses are designed to fit over your prescription glasses.



Chapter 2

GETTING STARTED

NuVision 60GX wireless glasses are a premium product designed specifically for the professional user. With lightweight construction and long battery life, these glasses are ideally suited for use in industrial and professional settings.



INSTALLING THE IR EMITTER

The NuVision 60GX is compatible with a wide variety of “Stereo Ready” and “Non-Stereo Ready” configurations. Here is a brief description of the two options as they apply to personal computers and workstations.

STEREO READY:

PCs and workstations are considered to be Stereo Ready if the graphics card or graphic subsystem provides a separate, powered, stereo frame sync connector. Almost all of today’s workstations are considered Stereo Ready. In the past, most graphics card manufacturers for personal computers were Non-Stereo Ready. However, MacNaughton, Inc. and a growing number of graphics card manufacturers have adopted a new VESA standard titled “Connector and Signal Standards for Stereoscopic Display Hardware.” Adoption of this standard allows a graphics card to be classified as Stereo Ready.

NON-STEREO READY:

This does not mean that a computer or workstation cannot display stereo imagery, it typically implies that stereo is only available through the video connection for the monitor. This means the video signal has to be processed through additional electronics to insert a frame sync signal for the left and right eye image.



CAUTION: To avoid damage to the equipment, turn off the computer before connecting the NuVision cables. Do not turn the computer on until the cables are properly connected.

INSTALLATION FOR WORKSTATIONS

1. Examine the back of the workstation for a 3-pin mini DIN equipment port as shown at right. (Some workstations have a glasses icon beside the port.)
2. Plug the IR emitter cable directly into the port. (If the workstation does not have a 3-pin mini DIN port, see instructions below.)



IF THERE IS NO 3-PIN MINI DIN PORT ON YOUR WORKSTATION...

Turn to the configuration chart listed below for a chart of connector/cable configurations for your workstation.

Silicon Graphics Workstations _____	14-15
Sun Workstations _____	16
HP / COMPAQ / DEC Workstations _____	17
Intergraph Workstations _____	18
IBM Workstations _____	19

1. In the table, look up the correct chassis and graphics subsystem for your workstation model (if appropriate) and determine the correct equipment port for your workstation.
2. Find the appropriate cable in the NuVision 60GX package.
3. Connect the 3-pin end of the cable to the IR emitter cable.
4. Connect the other end of the cable to the equipment port on your workstation.

Place the IR emitter on the desk or monitor with the IR end facing the user (the end with the smoked plastic "nose"). This allows the NuVision 60GX wireless glasses to pick up the IR signal. The IR emitter has an adjustable tilt base, so you can point it directly at the user. The NuVision 60GX is now ready to operate.

INSTALLATION FOR STEREO READY PCs

1. Examine the back of the PC for a 3-pin mini DIN equipment port (see page 20 for options), as shown here, located on the graphics card.
2. Plug the IR emitter cable directly into the port. (If the PC does not have a 3-pin mini DIN port, see instructions below.)



INSTALLATION FOR NON-STEREO READY PCs (If ordered as a 60GX-NSR)


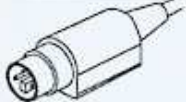

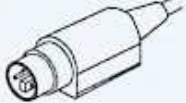

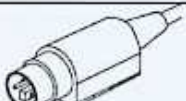

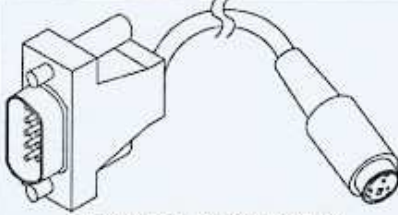


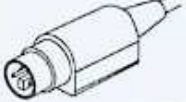

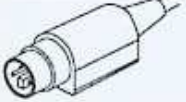

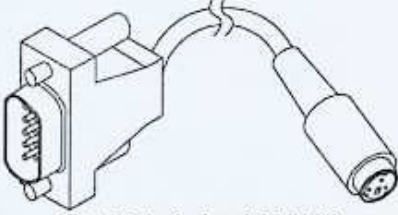

Note: Static discharge to the pass-through video connector may cause stereoscopic software to freeze. Restart the software to restore proper operation.

1. Locate the Video Adapter Cable. On one end of the cable is a control box. On the other end is an HD15, a 15 pin video pass-through connector.
2. With your CPU and monitor turned off, unplug your monitor cable from the video output port, as shown here, located on the graphics card. Plug the male end of the HD15 pass-through into the port. Connect your monitor cable to the female end of the HD15 connector.
3. Restart your computer and monitor. If the light on the video adapter cable control box is lit, power is flowing through the system to run the 60GX IR emitter. If the power light is not lit, then the graphic card is not providing DC power per the VESA standard. Contact your sales representative for an optional power supply.
4. Connect the IR emitter cable to the control box. Set the control box switch to "Picture over Picture" or "Field Sequential," depending on the type of stereo your software and system support. Make sure the Vertical Refresh rate is less than 70 Hz.



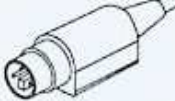

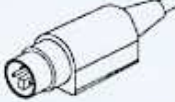

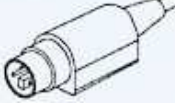

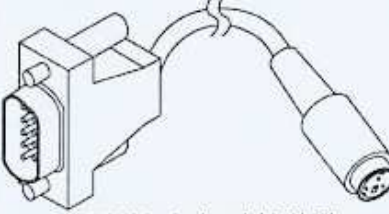
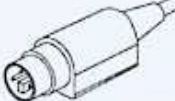


Place the IR emitter on the desk or monitor with the IR end facing the user (the end with the red plastic "nose"). This allows the NuVision 60GX wireless glasses to pick up the IR signal. The IR emitter has an adjustable tilt base, so you can point it directly at the user. The NuVision 60GX or 60GX-NSR is now ready to operate.






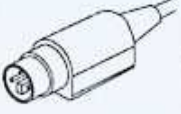


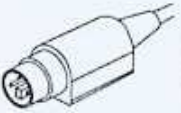
SILICON GRAPHICS WORKSTATIONS

Chassis	Graphics Subsys.	Equipment Port	Connector Cable	IR Emitter Cable
Personal Iris	Elan	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	
Indigo	XS XS24 XZ Elan	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	
Indigo 2	EZ Extreme EL	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	
Indigo 2	Impact	 DB9 (F)	 DB9 (M) to 3 pin mini DIN (F)	
Indy	None	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	
O2 320 540	None	 3-pin mini DIN (F)	NONE: If equipped with the flat panel adapter option, plug emitter cable directly into the equipment port.	
Octane Onyx2	Impact SI/SE SSI/SSE MX1 MXE	 DB9 (F)	 DB9 (M) to 3 pin mini DIN (F)	







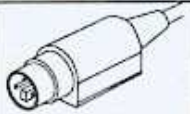
SILICON GRAHICS WORKSTATIONS CONT.

Chassis	Graphics Subsys.	Equipment Port	Connector Cable	IR Emitter Cable
				
Octane Octane2 Fuel	VPro 6,8,10,12	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	
Zx10	Wildcat 4110 5110	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	
Onyx	V12	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	
Onyx Onyx2	DG5 InfiniteR	 DB9 (F)	 DB9 (M) to 3 pin mini DIN (F)	



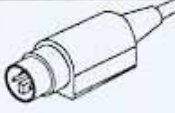


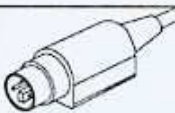

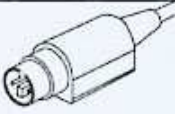
SUN WORKSTATIONS

Chassis	Graphics Subsys.	Equipment Port	Connector Cable	IR Emitter Cable
Ultra 1 2 10 30 60 80 450 Sun Blade 100 150 1000 2000	Creator 3D: Series 2 Elite 3D Expert 3D, Lite XVR 500 1000 1200 4000	 7 pin mini DIN (F)	 7 pin mini DIN (M) to 3 pin mini DIN (F)	
Sparq 20	ZX	 3.5mm stereo Jack (F)	 3.5mm stereo Jack (M) to 3 pin mini DIN (F)	
Ultra 1 Ultra 2	Creator 3D: Series 1	 3.5mm stereo Jack (F)	 3.5mm stereo Jack (M) to 3 pin mini DIN (F)	



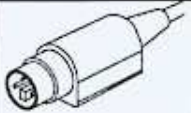

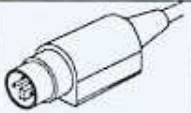
HP / COMPAQ / DEC WORKSTATIONS

Chassis	Graphics Subsys.	Equipment Port	Connector Cable	IR Emitter Cable
ANY	fx4+ fx6+ Fx5 Pro fx10 Pro Fire GL-UX Wildcat 6110 Nvidia 900 XGL	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	
Alpha Station DS/ES	Power Storm: 4D 40T 4D 50T 4D 60T 350	 5-pin mini DIN (F)	 5-pin mini DIN (M) to 3 pin mini DIN (F)	
EVO	Fire GL 2/4 Wildcat 5110 6110 Nvidia 550 XGL 750 XGL 900 XGL	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	





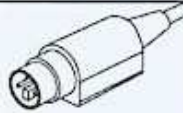
INTERGRAPH WORKSTATIONS

Chassis	Graphics Subsys.	Equipment Port	Connector Cable	IR Emitter Cable
Image Station Z	None	 5-pin mini DIN (F)	 5-pin mini DIN (M) to 3 pin mini DIN (F)	
Any	Intense3D Wildcat 3510 3600 4000 RealiZm RealiZm II	 5-pin mini DIN (F)	 5-pin mini DIN (M) to 3 pin mini DIN (F)	
ImageStation: 2000 2002 SSK ZII ZIII	Wildcat: 4105 4110 5110 RealiZm II 3D	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	


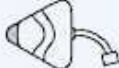
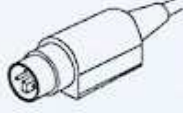
IBM WORKSTATIONS

Chassis	Graphics Subsys.	Equipment Port	Connector Cable	IR Emitter Cable 
RS6000	GXT 1000 3000P 4000P 4500P 6000P 6500P	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	
Intelli-Station	Wildcat 7110 Nvidia 980 XGL	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port	

STEREO READY PCs

Chassis	Equipment Port	Connector Cable	IR Emitter Cable
PC w/ VESA std. Graphics card.	 3-pin mini DIN (F)	NONE: Plug emitter cable directly into equipment port.	
PC's with 3D Labs Intense 3D Series graphics card	 5-pin mini DIN (F)	 5-pin mini DIN (M) to 3 pin mini DIN (F)	

NON-STEREO READY PCs

Chassis	Equipment Port	Connector Cable	IR Emitter Cable
Tower/ Desktop	 15 pin Video Output (F)	HD15 video pass-through connector with control box.	 

Chapter 3

OPERATING THE SYSTEM

Once you have connected the cables for the IR emitter and positioned the emitter so the glasses can pick up the IR signal, the NuVision 60GX is ready to operate. You can now run your 3D software and view the monitor through the wireless glasses.

This section describes some additional operating instructions for effective use of your NuVision 60GX.

OPERATING THE IR EMITTER

The IR emitter has an LED in the center of the red “nose” of the device. When the LED is lit the emitter is sending out a sync signal.

SIGNAL AREA: The IR emitter sends out a signal that covers an area of 140° horizontal, 60° vertical, and a distance of 12 feet. The emitter has an adjustable tilt base so the “viewing cone” can be aimed where needed. If the glasses are moved outside the transmitter signal area, the lenses will stop shuttering and automatically go into clear mode. The image on the screen will no longer appear in 3D through the glasses.

THE EYE REVERSAL SWITCH: This switch, located on the back of the IR emitter, reverses the order in which the lenses are shuttered. For instance, if the left lens closes first, flipping the Eye Reversal Switch will make the right lens close first.

Since some software starts with the right eye view and others with the left eye view, the lens shutters may not be synchronized properly with the software. This is called “pseudoscopic 3D” and creates the following effects:

- The image may be entirely unreadable.
- The image may be in reverse stereo, i.e., objects appear to retreat from the screen rather than advance.
- The view may give you a headache or the sensation of eye strain.
- It just “doesn’t look right.”

To correct these problems, flip the eye reversal switch.

USING THE WIRELESS GLASSES

The NuVision 60GX wireless glasses work with both the NuVision 60GX IR emitter and Stereographics' CrystalEyes2 IR emitter. The number of glasses you can use with these emitters is limited only by the number you can fit within the viewing area (IR signal range = 140° horizontal, 60° vertical, 12 feet from the emitter).

The glasses are designed to fit over prescription glasses.

The LED inside the left temple piece is a power indicator. If the LED is lit, the glasses are on and using the batteries. To shut off the glasses, close the ear stems.



CAUTION: If the glasses are moved outside the IR signal range, the lenses will go clear but the batteries will still be running. To conserve battery life, close the ear stems of the glasses when they are not in use.

MAINTENANCE

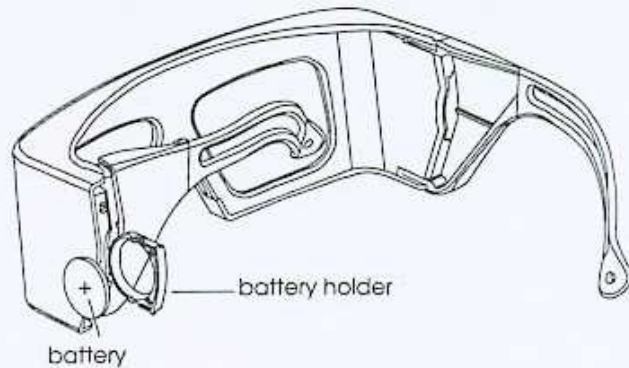
NuVision 60GX stereoscopic glasses represent the state-of-the-art in high-speed optical switching technology. As with any optical device, proper care ensures years of trouble-free operation.

- Don't leave the glasses unprotected in a briefcase or drawer. Store the glasses in the drawstring bag they were shipped in.
- Protect the glasses from dust and moisture.
- Avoid stressing, stretching, or bending the glasses frames and ear stems.
- Be careful not to scratch the lenses. Use a cleaning system designed for optical plastic lenses only.
- Do not immerse the glasses in any liquid.
- Do not drop or sit on the glasses. Use care when placing them on any surface.
- To clean the lenses use a cleaner formulated for plastic optical lenses.

REPLACING THE BATTERIES

NuVision 60GX glasses are designed to provide 500 hours of battery life. When the batteries need to be replaced, follow the procedure below:

1. Always replace **both** batteries at the same time. Use two new 3V lithium/manganese dioxide batteries only, such as:
 - Eveready E-CR 2032
 - Maxell CR2032
2. Fold the temple stem in and pull the battery holder out. Lay the holder flat.
3. Place the battery in the holder with the "+" side facing up. Insert the battery holder back into the glasses with the "+" side facing out.
4. Close the temple.
5. Repeat with the other temple with the "+" facing out.
6. Dispose of the batteries properly in accordance with local recommendations for Lithium batteries.



CAUTION: There is a danger of explosion if Lithium/Manganese Dioxide batteries are incorrectly installed.

CAUTION: Using the wrong battery size or type, forcing the batteries or battery holder, or inserting them incorrectly can cause damage to the glasses.

Chapter 4

TROUBLE SHOOTING

WHAT CAUSES FLICKER?

Flicker is observed when the image on the screen appears to flash or pulse. The two largest factors in whether LCD glasses flicker are the ambient light in the room and the vertical refresh rate of the video card. The vertical refresh rate is the number of times in a second that the screen is redrawn from top to bottom. Because some monitors can't handle high vertical refresh rates, video card manufacturers generally ship their product with the vertical refresh rates set low to accommodate a wider variety of monitors.

With the NuVision 60GX glasses, the range of vertical refresh rates provide varying degrees of comfort. In dim light, a vertical refresh rate of 70 Hz may be comfortable for some people, but in harsh light (e.g. fluorescent lighting) 70 Hz could produce flicker, which eventually causes eye strain. Vertical refresh rates of 100 Hz or higher are generally comfortable for most people and do not cause noticeable flicker.

NOTE: Some people are more sensitive to flicker than others. If you find this is true for you, follow the instructions below to increase your monitor's vertical refresh rate. If you do not notice any flicker or if it does not cause you discomfort, it is better not to change the default settings for the vertical refresh rates.

HOW DO I ELIMINATE FLICKER?

- Reduce the ambient lighting, especially direct or reflected fluorescent light.
- Turn up the contrast and turn down the brightness on your monitor.
- Choose a higher vertical refresh rate.

HOW DO I INCREASE THE VERTICAL REFRESH RATE ON MY PC?

For Super VGA monitors, use the utility that came with your video card to set the vertical refresh rate for each of the Super VGA resolutions. (If you no longer have that utility, check with the vendor that sold you the video card, or try looking on the video card manufacturer's Web site or BBS, etc.)

If your video card and your monitor both support 120 Hz, use this refresh rate, as it will give you the smoothest action and will virtually eliminate flicker.

- Set the vertical refresh rate at 120 Hz. or as high as your monitor and video card can handle for each resolution. Note that optimum performance is in the range of 100–120 Hz.
- Vertical refresh rates above 120 Hz. have little effect on the flicker and may reduce the image quality.



CAUTION: Setting a vertical refresh rate higher than your monitor can handle can cause permanent damage to your monitor. Be sure to read your monitor's specifications before setting the vertical refresh rate.

THE GLASSES DO NOT APPEAR TO BE SWITCHING.

If the lenses are not gray when a 3D image is on the screen, check that:

- the IR emitter is properly connected to computer and the emitter LED is lit. The emitter LED will light only if there is power to the emitter and the software is producing a valid sync signal.
- the batteries in the glasses are not run down or installed incorrectly. The LED inside the left temple piece will indicate when the glasses power is on.
- a stereoscopic image is displayed on the screen (when viewed without the glasses, this will look like a double image).
- the glasses are within the signal range of the IR emitter (140° horizontal, 60° vertical, up to 12 feet from the emitter).
- your software supports stereoscopic images.
- the glasses have not been broken, dropped, or disassembled.
- the stereo viewing feature of the graphic card has been enabled.
- the graphic card drivers are the most current available from the card manufacturer.

HOW DO I MINIMIZE GHOSTING ON THE SCREEN?

This “double image” is variously called “ghosting,” “leakage,” or “cross-talk” and is due to the time it takes for the screen to erase the previous image before the next image is displayed.

To reduce this effect, try decreasing the brightness and increasing the contrast on the monitor. Keep adjusting these two controls until the image is comfortable for viewing.

I CAN'T USE ANY OF THE HIGHER RESOLUTIONS.

Make sure:

- your monitor and your video card both support higher resolutions. Check the documentation they came with, or consult the manufacturers. This information may be available to you via the manufactures' web sites.
- your software supports higher resolutions.

WHAT DO I DO IF MY PROBLEM IS NOT COVERED IN THIS CHAPTER?

If you still have questions, call us, fax us or send an email. When contacting Customer Service, please supply the following information:

- product name (60GX)
- lot or batch number. This is on a label inside the glasses.
- a description of the problem.
- type of computer and graphics card or sub system you are using
- your name, company's name, address and phone number

It is suggested you be sitting at your computer when calling tech support.

If the problem can not be fixed over the phone, you may need to get an RMA number (return authorization number), and send your NuVision 60GX in for repair.

CUSTOMER SERVICE

For problems with NuVision 60GX Stereoscopic Wireless Glasses, contact MacNaughton, Inc.'s Customer Service Department:

PHONE: 1-503-614-9000

HOURS: Monday through Friday
8 am to 5 pm PST

FAX: 1-503-614-9100

EMAIL: support@nuvision3d.com

WEB: www.nuvision3d.com

NuVision 60GX® Battery Replacement


NuVision 60GX glasses are designed to provide 600 hours of battery life. When the batteries need to be replaced, follow the procedure below:

Always replace *both* batteries at the same time. Use two new 3V lithium/manganese dioxide batteries only, such as Eveready E-CR 2032 or Maxell CR2032

Fold the temple stem in and pull the battery holder out. Lay the holder flat and lift off the old battery.

Place the replacement battery in the holder with the "+" side facing up. Insert the battery holder back into the glasses with the "+" side facing out.

Close the temple. Repeat with the other temple with the "+" facing out.

 **CAUTION:** Using the wrong size or type of battery, forcing the batteries or battery holder, or inserting the batteries incorrectly can cause damage to the glasses.

CAUTION: There is a danger of explosion if Lithium/Manganese Dioxide batteries are incorrectly installed.

CAUTION: Dispose of the batteries properly in accordance with local recommendations for Lithium batteries.

NuVision 60GX® Batterieersatz

Die NuVision-60GX-Brille bietet eine Batteriebenserwartung von 600 Stunden. Wenn Die Batterien ersetzt werden müssen, führen Sie die folgenden Schritte durch:

Ersetzen Sie immer *beide* Batterien gleichzeitig. Benutzen Sie nur zwei neue 3 Volt Litium-Mangandioxyd-Batterien, wie z.B. Eveready E-CR 2032 oder Maxell CR2032.

Falten Sie den Brillenbügel aus, und ziehen Sie den Batteriehalter heraus. Legen Sie den Halter flach hin und heben Sie die alte Batterie heraus.

Legen Sie die Ersatzbatterie so in den Halter, daß die "+"-Seite nach oben zeigt. Schieben Sie den Halter wieder in die Brille mit der "+"-Seite nach außen.

Falten Sie den Bügel zurück. Wiederholen Sie mit dem anderen Bügel mit dem "+" nach außen.

WARNUNG: Batterien falschen Typs oder falscher Größe, das Forcieren der Batterien oder des Halters oder falsches Einlegen der Batterien kann die Brille beschädigen.



WARNUNG: Falsch installierte Litium-Mangandioxyd-Batterien können explodieren.

WARNUNG: Batterien müssen entsprechend den örtlich gültigen Empfehlungen für

NuVision 60GX®

Remplacement des piles

Les lunettes NuVision 60GX ont été conçues pour permettre une durée de vie des batteries de 600 heures. Lorsque les batteries doivent être remplacées, suivez la procédure ci-dessous :

Remplacez toujours les *deux* piles en même temps. Utilisez exclusivement deux piles neuves de 3 V au lithium/dioxyde de manganèse, comme par exemple Eveready E-CR 2032 ou Maxell CR2032.

Repliez la branche et sortez le porte-pile. Mettez le à plat et retirez la pile usée.

Mettez la pile neuve dans le support avec le signe « + » sur le dessus. Remettez le porte-pile dans les lunettes avec le signe « + » vers l'extérieur. Refermez la branche.

Faites la même chose avec l'autre branche, avec le signe « + » vers l'extérieur.

ATTENTION : Les lunettes risquent d'être endommagées si on utilise des piles de taille ou type inadapté, si on enfonce de force les piles ou le porte-pile, ou si on ne met pas correctement les piles.

ATTENTION : Il existe un risque d'explosion si les piles au lithium/dioxyde de manganèse ne sont pas bien mises en place.

ATTENTION : Éliminer les piles

NuVision 60GX®

Reemplazo de las pilas

Los anteojos NuVision 60GX han sido diseñados para que las pilas tengan 600 horas de vida útil. Cuando sea necesario cambiar las pilas, siga el procedimiento que se indica a continuación:

Cambie siempre *las dos* pilas al mismo tiempo. Use solamente dos pilas nuevas de dióxido de litio/manganeso de 3V, tales como Eveready E-CR 2032 o Maxell CR2032.

Pliegue hacia adentro el vástago de la sien y extraiga el portapilas. Colóquelo sobre una superficie plana y quite la pila agotada.

Coloque la pila nueva en el portapilas con el lado “+” hacia arriba. Inserte el portapilas en los anteojos con el lado “+” hacia afuera.

Cierre la sien. Repita el procedimiento en la otra sien con el símbolo “+” hacia afuera.

PRECAUCIÓN: Usar el tamaño o tipo equivocado de pila, forzar las pilas o el portapilas o insertar las pilas incorrectamente puede dañar los anteojos.

PRECAUCIÓN: Hay peligro de explosión si las pilas de dióxido de litio/manganeso se instalan incorrectamente.

PRECAUCIÓN: Despeche las pilas