



Operation Manual for Conversion Kit Systems 040-0143-01 Rev. A

- **Read this manual before use.**
- **Keep this manual with the machine at all times.**



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Table of Contents

Preface	3	Diagnostics: Monitor Test Screens	14
Safety.....	3	Diagnostics: Speakers Menu.....	15
Warnings	4	Chapter 4 — Software Restoration	16
Environmental Conditions	4	Chapter 5 — Maintenance & Repair.....	17
FCC Notices (United States).....	4	Light Gun Service.....	17
Chapter 1 — Introduction.....	5	Routine Maintenance.....	17
Game Features	5	Light Gun Replacement.....	17
Hardware Features	5	Gun Internal Parts Replacement.....	18
Chapter 2 — Playing a Game.....	6	Computer Replacement	19
Chapter 3 — Operator Menu and Game		Checking the Game Dongle.....	19
Setup	7	Setting the Computer BIOS (CMOS).....	20
Navigating the Operator Menu.....	7	Chapter 6 — Troubleshooting.....	23
Game Settings Menu	8	Video Troubleshooting	23
Coin Settings Menu.....	9	Audio Troubleshooting.....	24
Collections Menu	10	Control Troubleshooting.....	25
Statistics Menu	11	Miscellaneous Troubleshooting.....	26
Diagnostics: Controls Menu.....	12	Chapter 7 — Diagrams and Schematics	27
Diagnostics: Gun Calibration Menu.....	13	Technical Support	30

List of Figures

Figure 1. Game Settings Menu.....	8	Figure 8. Diagnostics: Speakers Screen.....	15
Figure 2. Coin Settings Menu	9	Figure 9. Gun Internal Parts.....	18
Figure 3. Collections Menu	10	Figure 10. USB Game Dongle.....	19
Figure 4. Statistics Menu.....	11	Figure 11. Computer Rear Panel Diagram.....	27
Figure 5. Diagnostics: Controls Menu	12	Figure 12. JAMMA Pins Supported by	
Figure 6. Gun Calibration Screens	13	America's Army	28
Figure 7. Monitor Test Start Screen.....	14	Figure 13. USB2GUN PCB Wiring Diagram...	29

Preface

Safety

Please read this page before preparing your arcade cabinet for game play.

The following safety instructions apply to all game operators and service personnel. Specific warnings and cautions will be included throughout this manual.

Use the following safety guidelines to help protect the system from potential damage and to ensure your personal safety:

- Make sure that the switch on the back of the computer is set to match the AC power in use at your location:
 - 115 volts / 60Hz in most of North and South America and some Far Eastern countries such as Japan, South Korea and Taiwan
 - 230 volts / 50Hz in most of Europe, the Middle East and the Far East
- To help prevent electric shock, plug the system into a properly grounded power source. These cables are equipped with 3-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.
- To help protect your system from sudden increases and decreases in electrical power, use a surge suppressor, line conditioner or Uninterruptible Power Supply (UPS).
- Be sure nothing rests on the system's cables and that the cables are not located where they can be stepped on or tripped over.
- Keep your system far away from radiators and other heat sources.
- Do not block cooling vents.

Precautions for Game Operation

- To avoid injury and accidents, people who fall under the following categories should not play the game:
 - Those who need assistance when walking.
 - Those who have high blood pressure or a heart problem.
 - Those who have experienced muscle convulsions or loss of consciousness when playing a video game or similar activities.
 - Those who have trouble in the neck or spinal cord.
 - Intoxicated persons.
 - Pregnant women.
 - Persons susceptible to motion sickness.
 - Persons who do not abide by the warning labels on the game.
- A player who has never been adversely affected by light stimulus might experience dizziness or headache when playing the game. Small children can be especially susceptible to these conditions. Caution guardians of small children to keep watch over their children during play.
- Instruct those who feel sick during play to see a doctor.
- To avoid injury from falling objects, and electric shock due to spilled drinks, instruct players not to place heavy items, food, or drinks on the product.
- To avoid electric shock or short circuit, do not allow customers to put hands and fingers or extraneous matter in the openings of the product.
- To avoid risk of injury from falling, immediately stop customers from leaning against or climbing on the product.

Warnings



To avoid electrical shock, unplug the cabinet before performing installation or service procedures.

If the power cord is damaged, it must be replaced by the equivalent power cord available from GLOBAL VR or your distributor.



GLOBAL VR® assumes no liability for any damages or injuries incurred while setting up or servicing the cabinet. Only qualified service personnel should perform installation or service procedures!

Environmental Conditions

Cabinet is intended for indoor use only. Be sure to keep the cabinet dry and maintain operating temperatures of 59°—86°F (15°—30°C).

FCC Notices (United States)

Electromagnetic Interference (EMI) is any signal or emission radiated in free space or conducted along power or signal leads, that endangers the functioning of radio navigation or other safety service, or that seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include, but are not limited to, AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pager, and Personal Communication Services (PCS). These licensed services, along with unintentional radiators such as digital devices (including computer systems) contribute to the electromagnetic environment.

Electromagnetic Compatibility (EMC) is the ability of items of electronic equipment to function properly together in the electronic environment. While this computer system has been designed and determined to be compliant with regulatory agency limits for EMI, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio communications services, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Relocate the cabinet relative to the receiver.
- Plug the game into a different outlet so that the computer and the receiver are on different branch circuits.

If necessary, consult a Regulatory EMC representative of GLOBAL VR® or an experienced radio/television technician for additional suggestions. You may find the [FCC Interference Handbook](#), to be helpful. It is available from the U.S. Government Print Office, Washington, DC 20402.

This device has been tested and complies 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. If not installed and used in accordance with the instruction manual, it may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Operation is subject to the following conditions:

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

Chapter 1 — Introduction

Game Features

Experience the real United States Army...the challenges, the training, even the Drill Sergeants. Players can challenge themselves in this exciting new game that depends as much on teamwork as it does on skill, speed, and judgment. Those who embody the qualities of a real Soldier can join the America's Army leaderboard.

- Green Label non-violent target shooter
- Simultaneous two-player action
- Dynamic difficulty system makes it fun for 1st timers and challenging for return players
- Leaderboards set the stage for competition
- Hidden bonuses scattered throughout the game
- Complete range of operator options

8 Game Levels

Sniper Course, Shoot House, Shotgun Training, Mover Target, Pistol Range, Point Man, Grenade Course, and Indoor Shooting Range

Hardware Features

- Pentium[®] Dual-Core Processor
- Supports CGA, EGA, or VGA Monitor
- NVIDIA[®] Graphics
- Supports Dollar Bill Validator
- 1 Gigabyte RAM

Chapter 2 — Playing a Game

After you coin up, a menu appears to let you select from the eight training exercises. The menu also displays the current difficulty level of each exercise.

Shoot at the exercise you wish to play. Instructions will appear onscreen.

Each exercise is based on actual military training, but with an arcade flavor. Scores are based on target identification, speed, and accuracy. Be sure to listen to the Drill Instructors at the beginning of the exercise, as they will tell you what to shoot at. At the end of an exercise the Drill Instructor will tell you how you did and give you your score.

If you do well and pass exercises, the difficulty will increase to ensure that you are challenged.

If you fail a level, the difficulty will reduce when you play it again, so you have a better chance to pass.

Once you complete a level with a PASS, that level will be locked to move you toward completing the remaining levels.

This game supports two player simultaneous play, but if you really want to score big, you must work together as a team. This means that both players must score a PASS for the exercise. (No hogging all the targets!)

Do well enough and you will get to enter your initials on the leaderboard (high score) screen. There is a leaderboard for each exercise, and one for the overall score leaders. Are you good enough?

To enter your initials, shoot at each letter, and then shoot at DONE when finished. If you make a mistake, shoot the backspace key in the lower right corner of the screen.



Chapter 3 — Operator Menu and Game Setup

This chapter describes how to use the Game Operator menu to set up the game, diagnose problems, and view gameplay and earnings statistics.

Navigating the Operator Menu

You can use the Operator buttons or player controls in the Operator Menu, as described below:

Button	Function
Player 1 & 2 START buttons or Operator UP & DOWN buttons	Move up or down through a menu list to highlight an item, or change the value for a selected item.
Gun pointed at screen or Operator TEST button	Enter a submenu or select a highlighted item. Toggles the setting for items with only two options (such as Enable or Disable).
Gun pointed off-screen or Operator BACK button	Go back to Main Menu list, or automatically highlight Resume Game.

For example, the following steps explain how to change the Game Volume using the player controls.

1. Press the Operator **TEST** button to open the Operator Menu.
2. **Game Settings** is highlighted when you open the Menu, so shoot at the screen to enter this submenu.
3. Press the **Player 2 START** button to move down to **Game Volume**.
4. Shoot at the screen to select the item.
5. Press the **Player 1 and Player 2 START** buttons to change the volume setting.
6. When you reach the desired setting, shoot at the screen to accept the setting.
7. Shoot off the screen to exit from the submenu. (Or use the **Player 1 and Player 2 START** buttons to select another item to change.)
8. Shoot off the screen again to highlight **Resume Game** from the Main Menu list. (Or use the **START** buttons to highlight another submenu if you wish to change more settings.)
9. Shoot at the screen to select Resume Game, and once more to confirm. The game will return to the Attract Mode.

Note: Pressing the **SERVICE** button on the Operator Button Panel during Attract Mode adds a Service Credit that you can use for testing game play. You can disable or enable this feature from the Coin Settings menu.

Game Settings Menu

This menu lets you set up audio volume, enable free play, or reset settings and high scores.

The lower left corner of each menu screen displays the software Build and I/O Board numbers. These numbers may be useful to Customer Service for troubleshooting any problems that may occur. The GLOBAL VR website URL and Customer Service phone number are also displayed for Operator convenience.

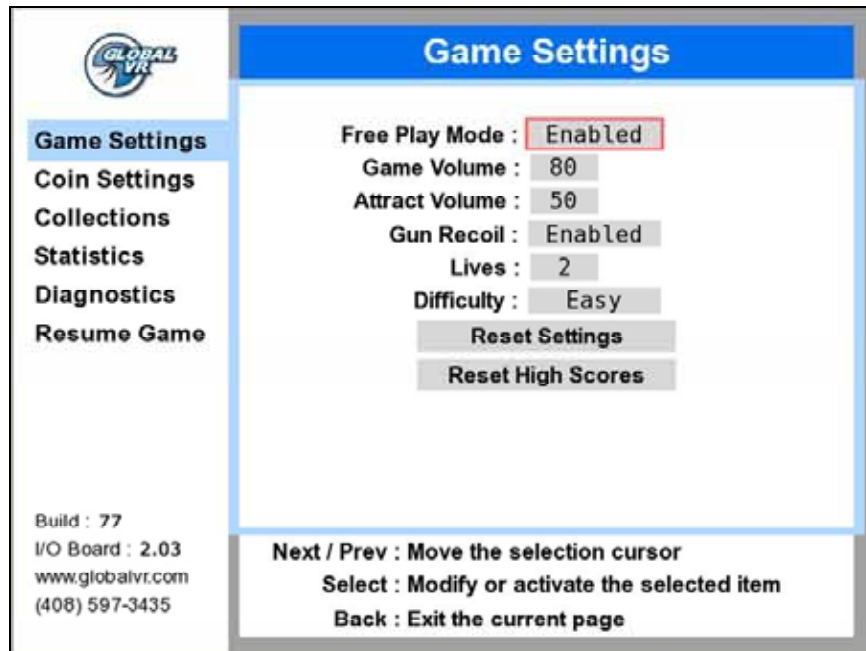


Figure 1. Game Settings Menu

Menu Item	Description
Free Play Mode	Turn Free Play on (Enabled) or off (Disabled).
Game Volume	Sets Game volume level. (Same as using the VOLUME UP/DOWN buttons during a game.)
Attract Volume	Sets Attract Mode volume level. (Same as using the VOLUME UP/DOWN buttons during Attract Mode.)
Gun Recoil	Not used on conversion kit systems.
Lives	Sets the number of lives per credit. (This is the number of levels a player can fail before having to insert more coins to continue.)
Difficulty	Sets the initial Difficulty for each level when a player first coins up. The software adjusts the difficulty level from this point based on player skill.
Reset Settings	Restores all Game Settings to factory defaults.
Reset High Scores	Clears all High Scores saved by the software.

Coin Settings Menu

This screen controls all pricing for the cabinet. It allows you to set the prices to play and continue a game, use credits or money, and set the coin value for the coin mechs. This is also where you set how long a player has to continue a game.

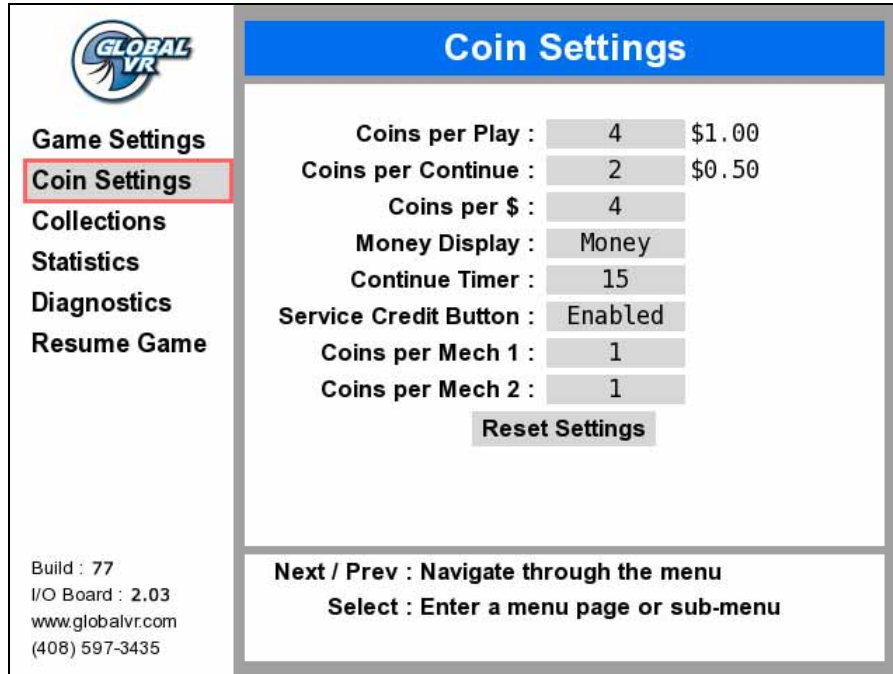


Figure 2. Coin Settings Menu

Menu Item	Description
Coins per Play	Sets the number of coins required to start a game. The text next to the field displays the dollar amount.
Coins per Continue	Sets the number of coins required to continue a game. The text next to the field displays the dollar amount.
Coins per \$	Sets the number of coins for the primary monetary unit. The symbol displayed will change for international currency.
Money Display	Sets Money Display to Money or Credits.
Continue Timer	Sets the length of time, in seconds, a player has to continue a game.
Service Credit Button	Enables or Disables the Service Credit Button. If Enabled, Service Credits can be added during Attract Mode by pressing the Service button on the Operator Button Panel.
Coins per Mech 1	Displays the current coin count for Mech 1 (typically used for the coin mechs).
Coins per Mech 2	Displays the current coin count for Mech 1 (typically used for the optional bill validator).
Reset Settings	Resets all Coin Settings to factory defaults.

Collections Menu

This menu displays current (since last reset) and lifetime collections data.

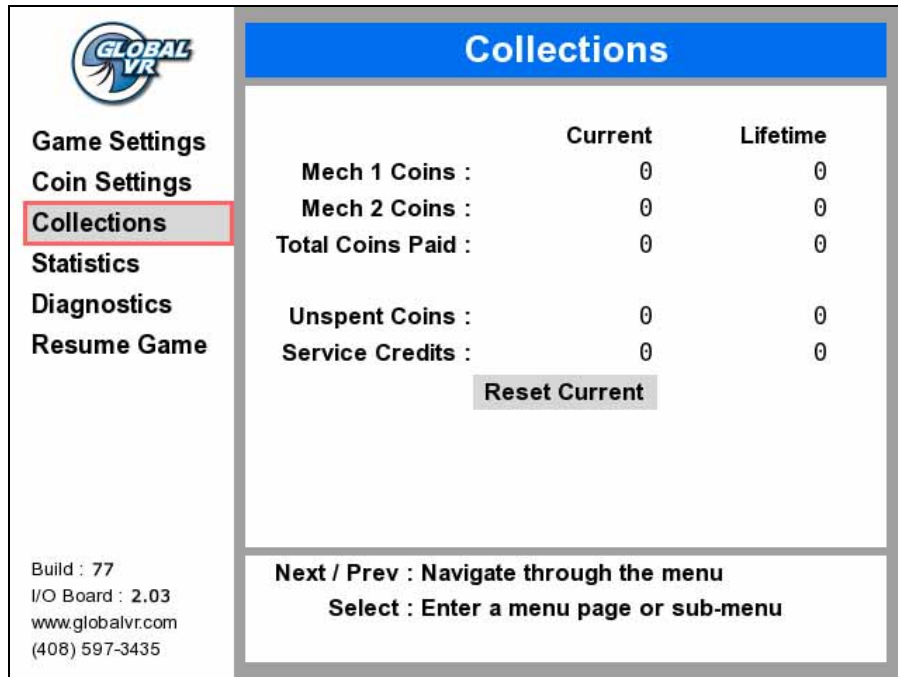


Figure 3. Collections Menu

Menu Item	Description
Mech 1 Coins	Displays Current and Lifetime coin count for Mech 1 (typically used for the coin mechs).
Mech 2 Coins	Displays Current and Lifetime coin count for Mech 2 (typically used for the optional bill validator).
Total Coins Paid	Displays Current and Lifetime coin count total for Mech 1 and Mech 2.
Unspent Coins	Displays Current and Lifetime Unspent Coins.
Service Credits	Displays Current and Lifetime Service Credits.
Reset Current	Resets Current coin count values. Does not affect Lifetime values.

Statistics Menu

This screen displays game play statistics for the cabinet.

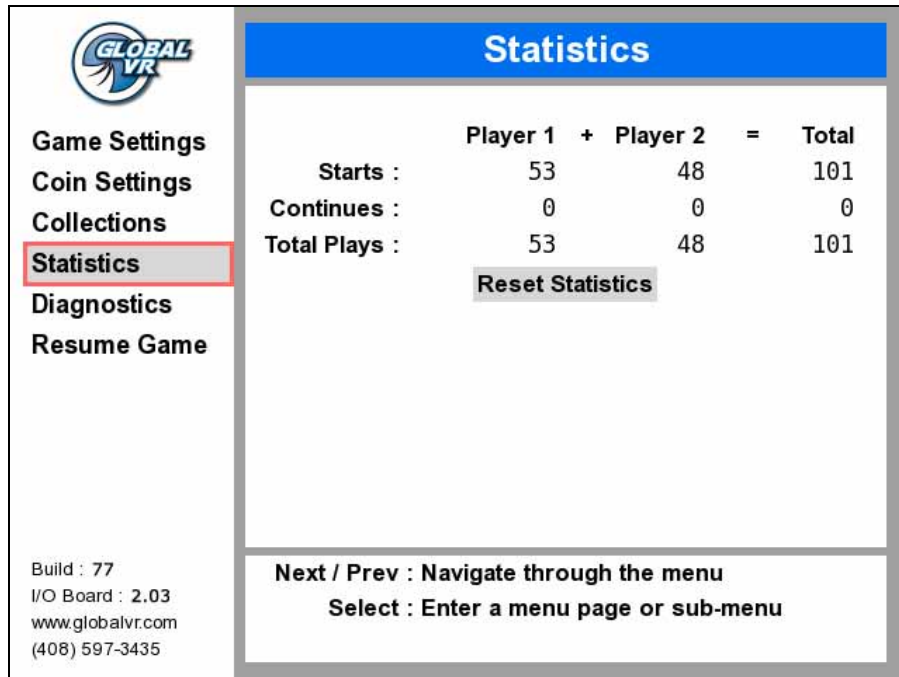


Figure 4. Statistics Menu

Menu Item	Description
Starts	Displays number of games started by Player 1 and Player 2, and the total for both.
Continues	Displays number of games continued by Player 1 and Player 2, and the total for both.
Total Plays	Displays total games for Player 1 and Player 2, and the grand total for both.
Reset Statistics	Resets Player 1 and Player 2 statistics to zero (0). Does not affect Total column.

Diagnostics: Controls Menu

This menu lets you test each Player Control, the Coin Mechs, and the Operator Buttons.

When you activate a control or coin mech, the circle next to the device name will highlight until you release the button.

Hold any button for two (2) seconds to exit to the main menu.

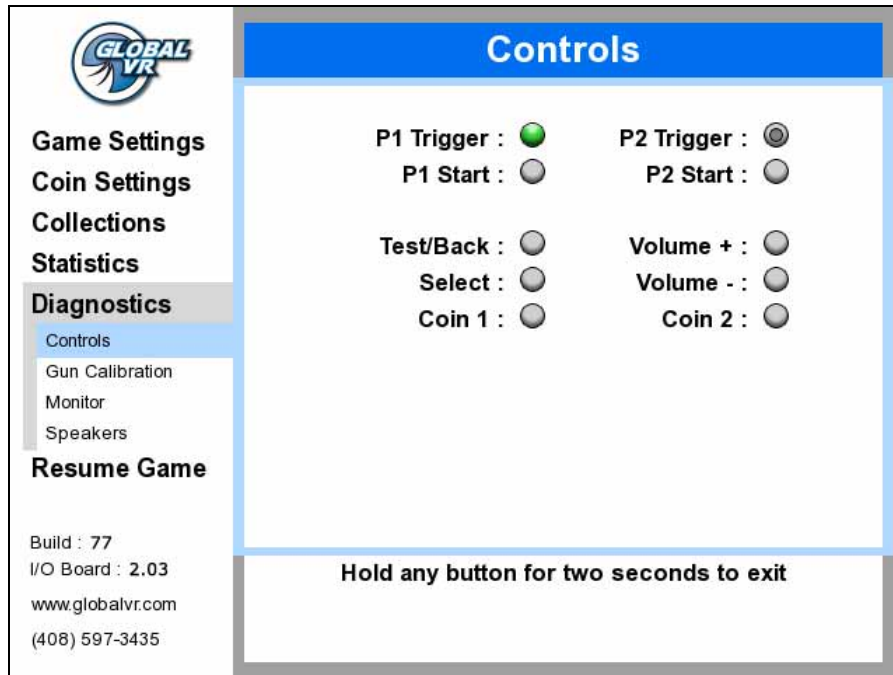


Figure 5. Diagnostics: Controls Menu

Diagnostics: Gun Calibration Menu

Use this menu to calibrate the guns so they aim properly. Calibrate the guns every month to ensure optimal performance. Also be sure to calibrate the guns any time you service or replace a gun or install software.

1. When you enter the menu, the first screen shown below will appear. Note that it displays the current coordinates for the Player 1 (P1) and Player 2 (P2) guns (or the coordinates where the gun last left the screen).
2. Pull the trigger for the gun you wish to calibrate, and the second screen will appear, prompting you to aim at the upper left target and pull the trigger.
3. For the most accurate results, gently place the barrel of the gun against the display shield glass, aligned with the target, and pull the trigger.
4. Repeat step 2 for the center and lower right targets to complete calibration.

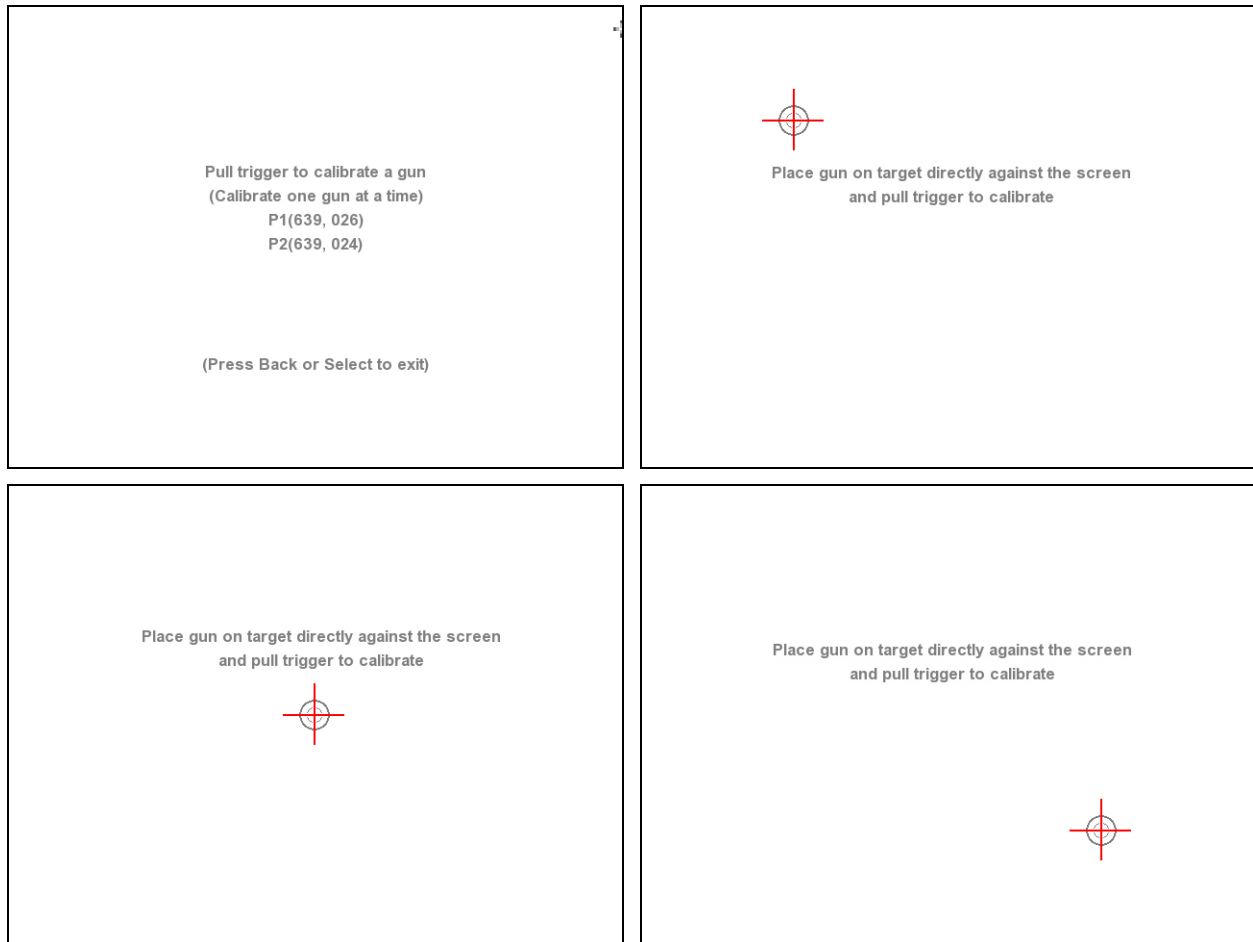


Figure 6. Gun Calibration Screens

Diagnostics: Monitor Test Screens

Once you press **SELECT** or shoot at the screen, the first in a series of monitor test screens will appear. Press **SELECT** or shoot at the screen to cycle through the screens to check the color, brightness, and geometry of the monitor.

Use the monitor remote control board, mounted inside the coin door, to adjust the monitor.

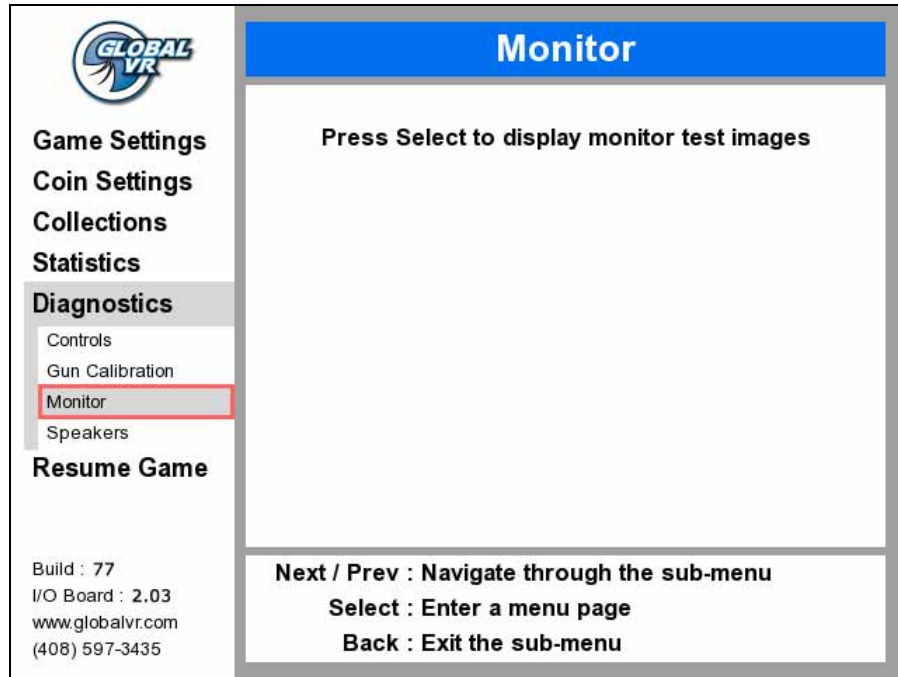


Figure 7. Monitor Test Start Screen

Diagnostics: Speakers Menu

This screen plays sound to test the speakers and subwoofer. The onscreen graphic indicates the speaker being tested.

When you enter this screen, the left speaker will play, as shown in the picture below. Press the SELECT button on the operator button panel or shoot at the screen to test the next speaker. If any sound comes from the wrong speaker, or any speaker does not play, check the wiring to the speakers, PCB, and computer.

Refer to *Audio Troubleshooting* on page 24 for help with audio problems.

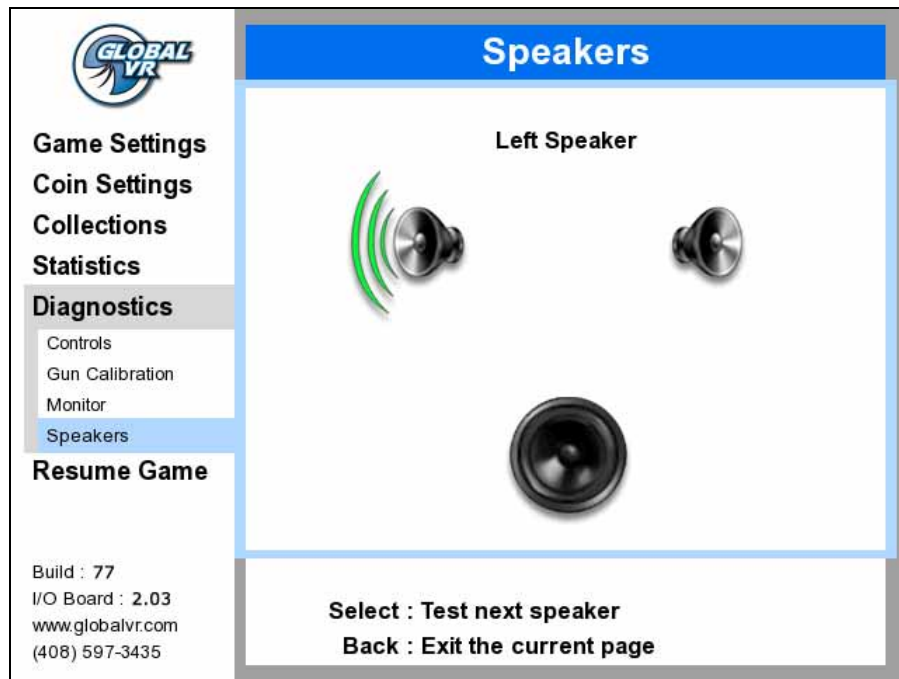


Figure 8. *Diagnostics: Speakers Screen*

Chapter 4 — Software Restoration



The operating system and game software are provided on a single DVD labeled *System & Game Install Disk*. **Total installation time is about 7 minutes.**

Important: When you use the System & Game Install Disk, you will erase all game settings, statistics, and collections data stored in the game software. It is advisable to contact Technical Support before using the Disk to resolve a problem.

Perform the following steps to restore software:

1. Insert the disk in the DVD-ROM Drive and power cycle the game. When the game reboots the computer will automatically read the disk and begin copying files and configuring the hard drive.
2. If you have a VGA monitor, you will see a prompt telling you when to remove the disk and power cycle the cabinet.

If you have a CGA or EGA monitor, you will not be able to read the onscreen text. Wait 7 minutes for the installation to complete, and then remove the disk and power cycle the cabinet.

3. The game will boot and the Attract Movie will start. Play a game to verify proper operation.
4. Open the Operator Menus and set the sound volume levels, pricing, and other Operator settings.
5. Select **Diagnostics**→**Gun Calibration** and follow the onscreen instructions to calibrate the guns.

Chapter 5 — Maintenance & Repair



CAUTION: GLOBAL VR assumes no liability for any damage or injuries incurred while servicing the cabinet. Only qualified service personnel should perform service and installation of cabinet hardware.

To prevent electrostatic discharge (ESD) damage, handle PCBs by the edges only and use a grounding wrist strap or similar precaution.

Please read the service instructions before working on the cabinet.



Always turn the cabinet OFF and disconnect the AC power cord before performing any repair work.

Light Gun Service

Refer to Figure 9 for a picture of the internal components of the gun.

Routine Maintenance

To keep light guns in optimal operating condition, inspect the guns weekly.

- Make sure the lens is clean and free of debris and scratches.
- Check the trigger action; make sure the trigger is free and springs back properly.
- Make sure the cable is in good condition.
- Calibrate the guns about once per month.

Light Gun Replacement

Perform the following steps to replace a light gun:

1. Turn off the cabinet and disconnect the AC power cord.
2. Disconnect the gun harness connector from the USB2GUN PCB.
3. Remove the screws from the cable ties that secure the harness to the cabinet.
4. Remove the three (3) nuts that secure the gun mount to the cabinet.
5. Remove the gun assembly from the front of the cabinet and carefully pull the harness through the hole.
6. Reverse these steps to install the new gun.
7. Calibrate the new gun from **Diagnostics: Gun Calibration** in the Operator Menu.

Gun Internal Parts Replacement

The procedure below describes how to disassemble the gun and replace internal components.

1. Remove the gun as described in the previous subsection, and take it to a workbench.
2. Remove the seven (7) screws from the gun case and carefully separate the halves.
3. To replace the lens, remove it from the housing and insert the new lens.
4. To replace the Gun PCB, remove the three (3) screws that secure it in place. Disconnect the harness connector and carefully lift the PCB and sensor assembly from the housing. Reverse these steps to install the new PCB
5. To replace the Trigger Micro Switch, remove the two screws that secure it to the housing. Remove the two wires and connect them to the same connectors on the new switch. Secure the new switch in the housing with the two screws.
6. To replace the trigger spring, lift out the old spring and place the new spring on the pin in the housing, as shown in the figure below.
7. When you close the gun, make sure the trigger and spring are in place, with the trigger pressing against the spring, as shown in the figure below.
8. Reinstall the seven (7) screws. The two longer screws go in the outside at the base of the grip, as shown in the figure below.

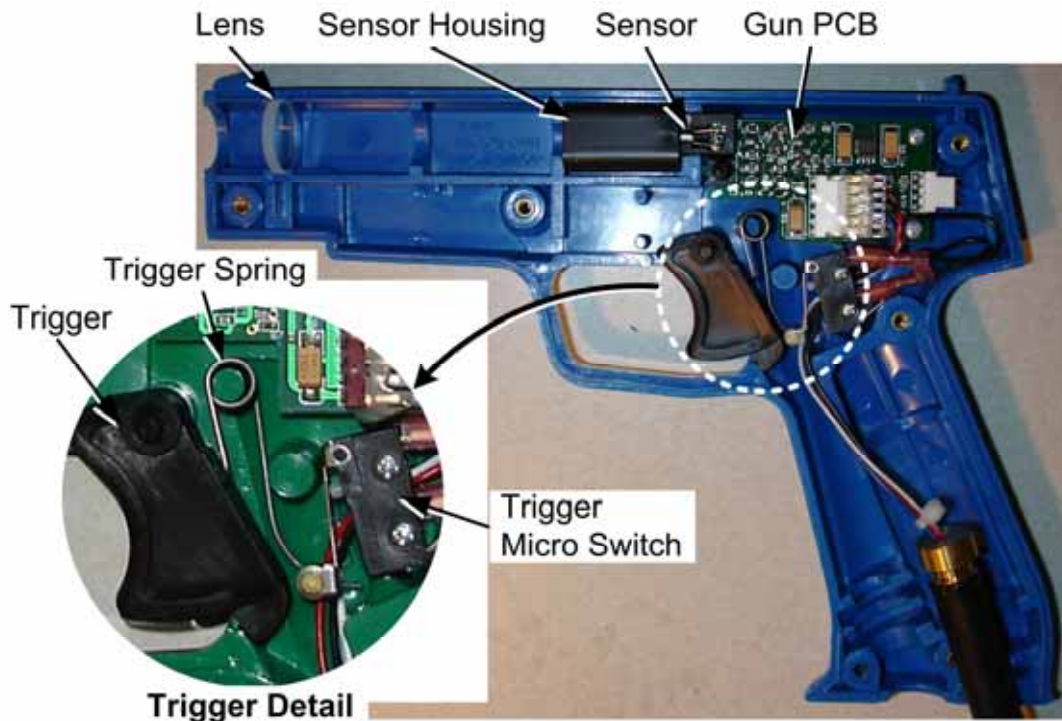


Figure 9. Gun Internal Parts

Computer Replacement



CAUTION: The computer is serviced as one unit. **YOU WILL VOID YOUR WARRANTY** if you open the computer without direct authorization from the GLOBAL VR® Technical Support staff.

Perform the following steps to remove the computer from the cabinet:

1. Disconnect all of the cables from the computer.
2. **Remove the Game Dongle and keep it with your cabinet.** Do not ship the game dongle with the computer.
3. Unbuckle the strap that secures the computer in place and carefully remove the computer.
4. Reverse these steps to replace the computer. Make sure that the computer air vents are not blocked. There is an air vent under the bottom front panel of the computer that is easily blocked by padding or debris.

When shipping the computer, always use plenty of padding and protection. GLOBAL VR® recommends shipping the computer in a box with three inches of foam padding on all sides.



CAUTION: Shipping the computer without enough padding can **VOID THE WARRANTY** if the computer is visibly damaged from shipping.

Checking the Game Dongle

The cabinet uses a Game Dongle to activate the game software. If the dongle is missing, the game will not run. When a USB Game Dongle is installed and working properly, a **red** LED will illuminate inside the dongle. If the software does not recognize the Game Dongle, make sure the Dongle is connected properly, and then power cycle the cabinet.

If the dongle comes out while the game is running, a NO DONGLE screen will appear the next time a **START** button is pressed. Re-install the dongle; there is no need to reboot the game.

Note: The dongle supplied with the cabinet is specific to the game and software version. Future software upgrades may require a new dongle.

Important: Some of your cabinet information is stored in the dongle, so if you replace your computer, remove the dongle and **keep the Game Dongle with the cabinet.**



Figure 10. USB Game Dongle

Setting the Computer BIOS (CMOS)

This procedure applies to the MSI K9NGM3 Motherboard. If your system uses a different motherboard, check the America's Army page on the service website (service.globalvr.com) for the BIOS settings.

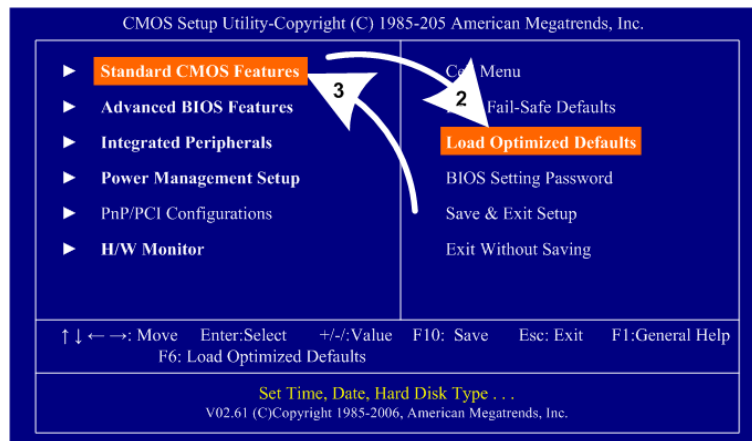
If you are comfortable using the CMOS Setup Utility, press the **DEL** key during boot to run the Utility, select **Load Optimized Defaults** from the Main Menu, and then change the settings shown in the table below. For more help, refer to the detailed instructions that follow.

Menu	Submenu (if applicable)	Item	Setting
Standard CMOS Features		Floppy Drive A	Not Installed
Advanced BIOS Features	Boot Sequence	1st Boot Device	CD/DVD
		2nd Boot Device	HDD
Power Management Setup		Restore on AC Power Loss	On
PC Health Status		CPU Smart FAN Target	Disabled

Important: Your screens may not look exactly like the screens shown below, and some settings shown on the screens pictures may be different from your system.

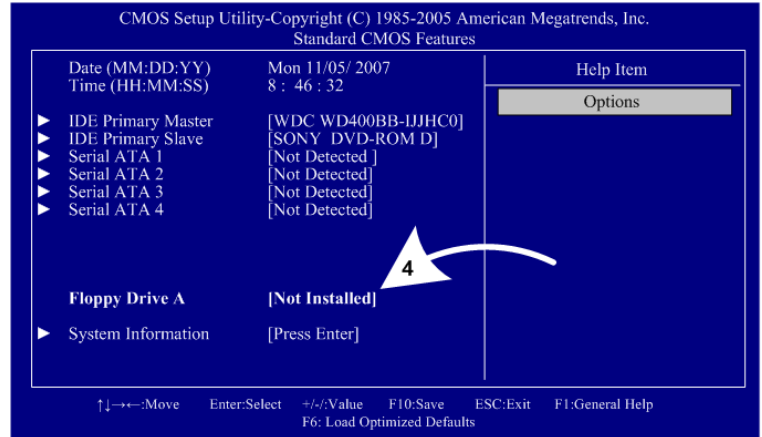
Do not change any settings that are not specifically described in this document.

1. Press the **DEL** key during boot. The CMOS Setup Utility Main Menu will appear:
2. Use the Arrow keys (↑↓→←) to select **Load Optimized Defaults**, and press **Enter**.
When prompted to confirm the change, Make sure **Ok** is selected and press **Enter**.
3. Use the Arrow keys to highlight **Standard CMOS Features**, and then press **Enter**.



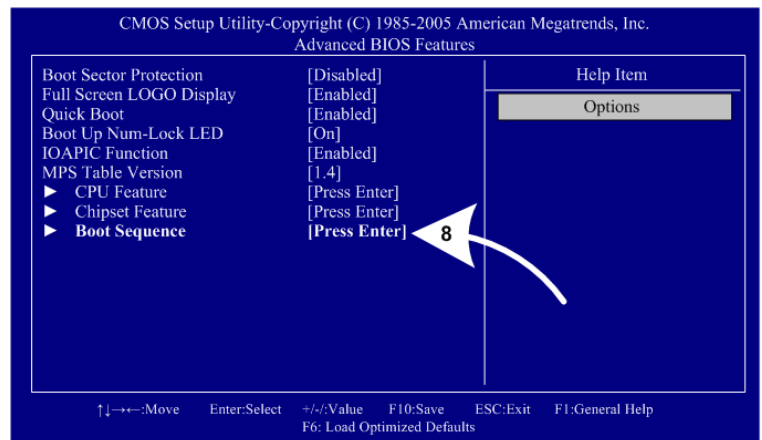
A screen similar to the following will appear:

4. Use the Arrow keys to highlight the setting for **Floppy Drive A** and press **Enter**.
5. Use the Arrow keys to change the setting to **Not Installed** and press **Enter**.
6. Press **ESC** to go back to the Main Menu.



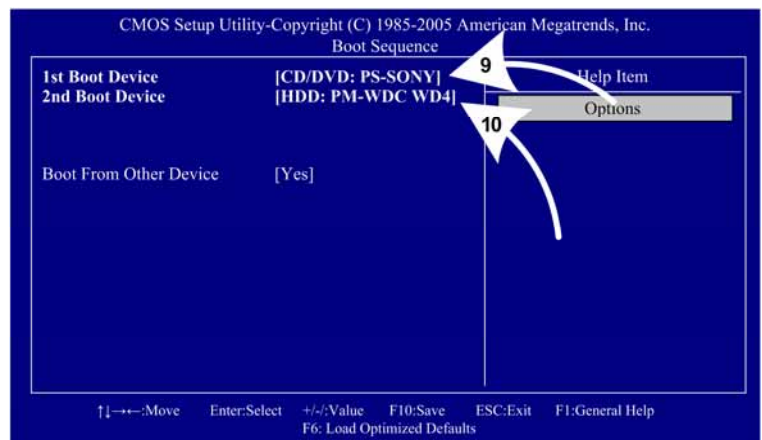
7. Now use the Arrow keys to highlight **Advanced BIOS Features** and press **Enter**. A screen similar to the following will appear:

8. Use the Arrow keys to highlight the setting for **Boot Sequence** and press **Enter**.



The boot Sequence screen will appear.

9. Use the Arrow keys to select **1st Boot Device** and press **Enter**. Use the Arrow keys to select the item starting with **CD/DVD** and press **Enter**.
10. Change the setting for **2nd Boot Device** to the item starting with **HDD** the same way.
11. Press **ESC** twice to go back to the Main Menu.

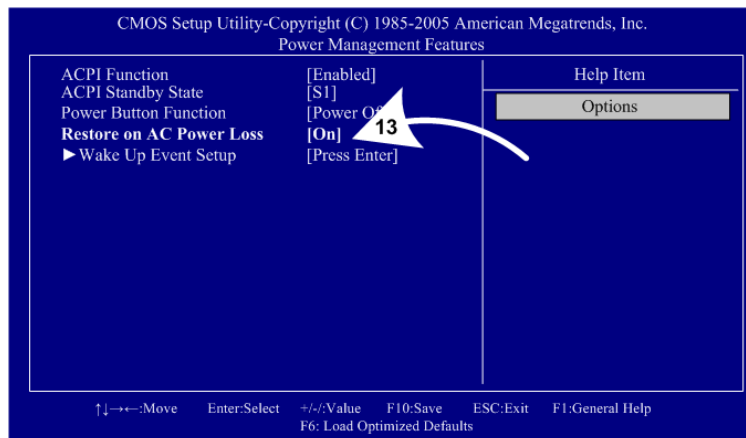


12. Now use the Arrow keys to highlight **Power Management Setup** and press **Enter**. A screen similar to the following will appear:

13. Use the Arrow keys to highlight the setting for **Restore on AC Power Loss** and press **Enter**.

14. Use the Arrow keys to change the setting to **On** and press **Enter**.

15. Press **ESC** to go back to the Main Menu.

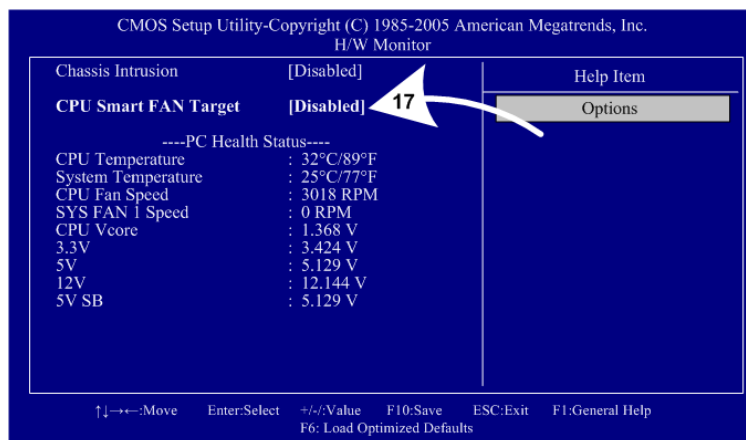


16. Now use the Arrow keys to highlight **H/W Monitor** and press **Enter**. A screen similar to the following will appear:

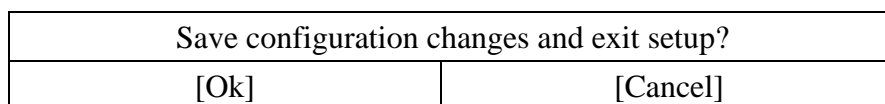
17. Make sure that **CPU Smart FAN Target** is set to **Disabled**. If it is not, use the Arrow keys to highlight it and press **Enter**.

18. Use the Arrow keys to change the setting to **Disabled** and press **Enter**.

19. Press **ESC** to go back to the Main Menu.



20. Now that all settings are correct, press **F10**. The following prompt will appear:



21. Make sure **OK** is selected (use the Arrow keys to select, if necessary), and press **Enter** to save the settings and exit.

Chapter 6 — Troubleshooting

Video Troubleshooting

Problem	Cause	Possible Solution
No picture on monitor	Power problem	Check the AC power connection to the monitor. You can verify that the monitor has power by looking for a small glow in the neck of the CRT.
	Loose or faulty video cable	Verify that the video cable is firmly connected from the monitor to the video card on the computer. While the monitor is powered ON, disconnect the video cable. You should see a message on-screen saying <i>No Signal</i> if the monitor is working. Check the video cable and make sure it is not pinched or frayed.
	Loose or faulty video card	When the computer boots up, it performs a PC self-diagnostic test. If you hear 3 beeps from the computer, this indicates a problem with the video card. If the video card is faulty, contact Technical Support.
	Faulty monitor chassis PCB	Verify that the fuses on the monitor chassis PCB are good and that all connections are secure.
Picture color is poor	Color needs adjustment	Use the monitor remote control board to adjust the red, green, and blue color settings.
Picture geometry is misaligned	Geometry needs adjustment	Use the monitor remote control board to adjust the picture height and width and other geometry.
No video and no audio (Note: The game takes about a minute and a half to boot.)	No power to computer	Verify the computer is ON by the green LED on the front of the computer. Verify the line voltage switch on the back of the computer is set to the correct voltage for your area: 115V or 230V. Make sure the AC power cord is firmly connected to the computer and the power strip. Turn off the power strip, wait 20 seconds, and then turn it back on to reboot the computer.
	Corrupted software	Reload the software from the CDs. If you continue to have problems, you may have a faulty hard drive.
	Faulty hard drive	If you continue to have problems after you reload the software, you may have a faulty hard drive. Contact Technical Support.
Poor picture	Monitor connected to wrong port	The monitor must be connected to the VGA Video port on the video card, not to the video port in the computer motherboard. Make sure that the monitor video cable is connected to the VGA Video port located below the audio connectors.
	Settings need adjustment	Use the monitor remote control board to adjust the monitor.
Two images on monitor	CGA monitor is running in VGA mode	Check the jumpers on the USB2GUN PCB and set them for CGA mode
Video looks blurry or too bright and washed out	Video terminator not installed	For CGA and EGA monitors, install the video terminator to the VGA Video Out port on the USB2GUN PCB.

Audio Troubleshooting

Problem	Cause	Possible Solution
No audio	Volume set too low	Enter the Operator Menu and adjust Audio Settings to raise the volume. Verify that the Master Volume is set high enough.
	Faulty wiring	Turn off the game. Verify that all the audio wires are firmly connected to the speakers and usb2gun PCB. Verify that each wire is connected to the correct port. Verify that no wires are frayed or improperly shorting to ground.
	Blown speakers	Remove the grills and inspect each speaker for visible damage. Run the Sound Test from System Test in the Operator Menu to verify each speaker is working.
	Faulty audio amp on usb2gun PCB	To verify audio is working at the computer, connect stereo headphones to the computer audio port. You can test the PCB by connecting it in another cabinet.
No Audio and No Coin Counter	No power to usb2gun PCB	Check the +5/+12 VDC connection to the PCB
Poor sound from one or more speakers	Blown speakers	Remove the grills and inspect each speaker for visible damage. Select Diagnostics: Speakers from the Operator Menu to verify each speaker is working.
	Reversed wires	A weak or low muffled sound is a sign of reversed speaker wires. Check for reversed wires on each speaker.
	Faulty audio amp on usb2gun PCB	To verify audio is working at the computer, connect stereo headphones to each computer audio port. You can also test the PCB by connecting it in another cabinet.
	Faulty wiring	Verify that all the wires are firmly connected to each speaker and the usb2gun PCB. Verify that no wires are frayed or improperly shorting to ground.
Audio hum	Faulty power supply	A constant low hum in the speakers can be caused by a faulty power supply, either the external DC power supply or the power supply inside the system computer.
	Conventional Light bulbs in coin mechs.	Use LEDs rather than bulbs for the coin lamps.

Control Troubleshooting

Problem	Cause	Possible Solution
Buttons and Guns do not work	Faulty wiring	Disconnect the cabinet from AC power. Verify that all wires are firmly connected to each button and the usb2gun PCB. Verify that no wires are frayed or improperly shorting to ground.
	Faulty usb2gun PCB	Make sure that all connections to the PCB are secure. Test with known good PCB.
	Faulty USB cable	Replace USB cable. Try a different computer USB port.
One or both guns do not work	Faulty wiring	Disconnect the cabinet from AC power. Verify that all wires are firmly connected from the gun to the usb2gun PCB. Verify that no wires are frayed or improperly shorting to ground.
	Faulty USB cable	Replace USB cable. Try a different computer USB port.
	Bad trigger switch	Replace trigger switch.
	Faulty usb2gun PCB	Make sure that all connections to the PCB are secure. Test with known good PCB.
Guns do not aim properly	Guns out of calibration	Calibrate guns from Operator Menu.
Erratic gun performance or gunfire does not register	Monitor dirty or poorly adjusted	Clean the glass display shield and monitor. Adjust monitor so picture is sharp with good contrast and color.
	Dirty or damaged lens	Clean or replace the lens in the gun barrel.
	Damaged cables	Inspect the gun cables and replace if necessary.

Miscellaneous Troubleshooting

Problem	Cause	Possible Solution
No power	Power strip not plugged in or turned off	Make sure the power indicator light on the power strip is on. If it is off, make sure the connections to the AC power plate terminals are secure and the power strip ON/OFF switch is ON.
	Cabinet not connected or turned off	Make sure the AC power cord is firmly connected to the power plate and an active AC outlet, and the cabinet ON/OFF switch is ON.
	Power Jumpers in Wrong Position	Set the Power Jumpers on the USB2GUN PCB for either JAMMA or J2 power, depending on which is providing the +5 and +12 VDC power to the PCB (see Error! Reference source not found. on page Error! Bookmark not defined.). Note: Most conversion cabinets will use JAMMA power.
Game dongle not found by system computer	Game dongle not connected	Connect the game dongle. Power the cabinet off and then on.
	Faulty game dongle or wrong dongle version	Make sure the dongle is connected properly. (USB dongles illuminate when recognized by the computer. Parallel dongles do not.) Contact Tech Support if you need to order a new dongle.
	Faulty USB or parallel port	If you try a different game dongle and reboot the game, but the dongle still is not recognized, contact Tech Support.
Cabinet gets very warm	Faulty ventilation fan	Verify that the exhaust fan is working. It is located under the vents at the top of the cabinet. Replace the fan if it is worn or spinning slowly.
	Cabinet ventilation holes are blocked	Make sure you have proper clearance between the cabinet rear and the wall. Make sure the vent holes are clear of dust and debris and that air can flow freely.
Marquee lamp does not light or is intermittent	Faulty florescent tube	Check the florescent tube for darkened or cracked ends. Replace the florescent tube if it looks worn.
	Faulty florescent fixture	Verify the florescent tube pins make a good connection with the lamp fixture. Check the ballast for proper operation. Replace fixture if faulty.
Wrong number of credits given when money is inserted	Incorrect setting	Adjust settings from the Operator Menu.
	Faulty wiring	Disconnect cabinet power cord. Check all coin mech wiring. Verify no wires are frayed or shorting to ground.
	Faulty coin mech	Verify the coin mech is not jammed. Make sure the coin mech is properly aligned and latched to the coin door. Repair or replace if faulty.
Game will not accept coins	Faulty coin mech	Verify the coin mech is not jammed and is properly aligned and latched to the coin door.
	Faulty ground wire	Check the ground wire to the coin door.
Optional DBA not working	Incorrect dipswitch setting	Set dipswitches for Long Pulse or Gaming (not Short Pulse or Vending).

Chapter 7 – Diagrams and Schematics

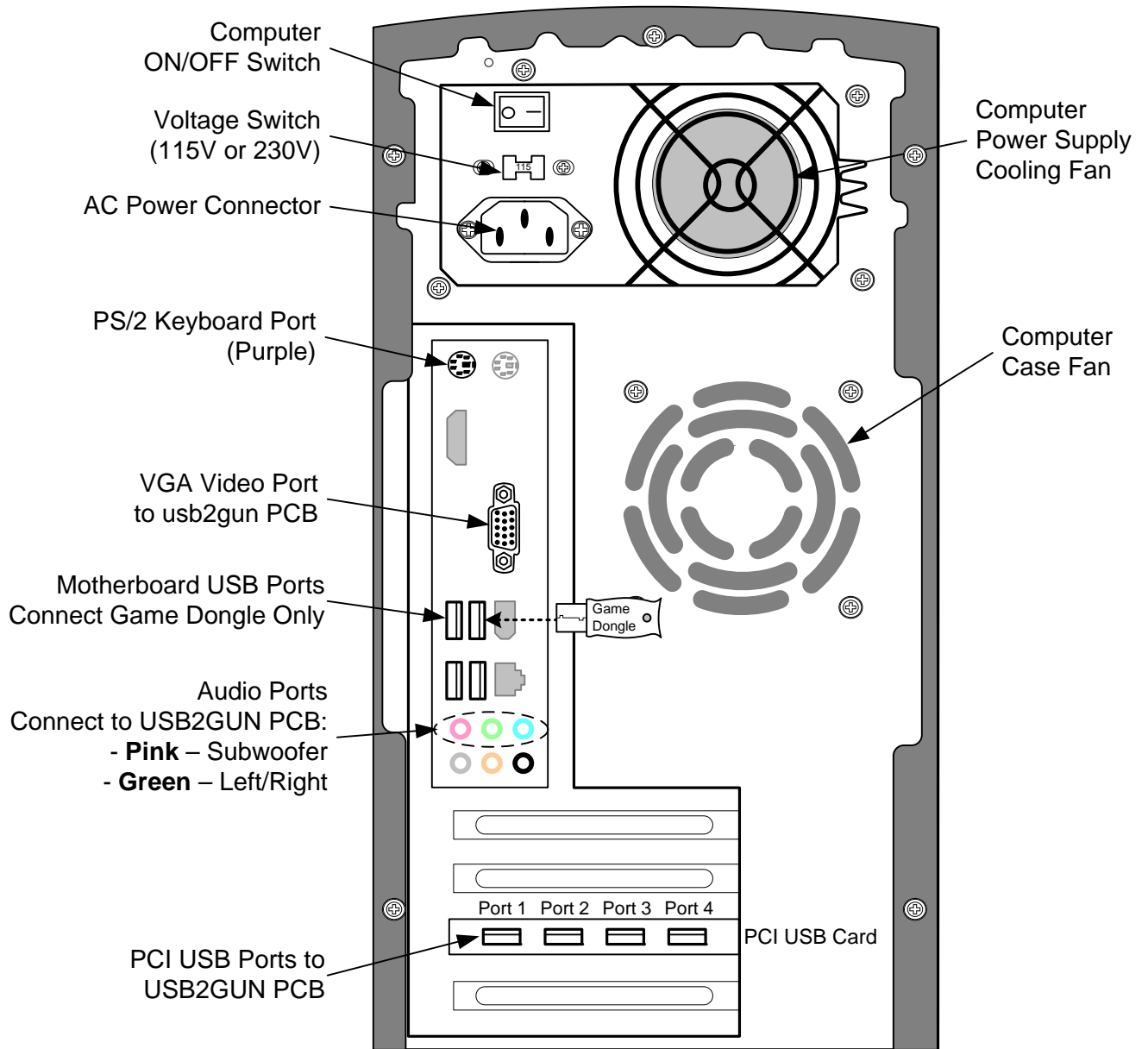


Figure 11. Computer Rear Panel Diagram

JAMMA Connector

SOLDER SIDE		COMPONENT SIDE	
GND	A	GND	1
GND	B	GND	2
+5V	C	+5V	3
+5V	D	+5V	4
-5V	E	-5V	5
+12V	F	+12V	6
Key	H	Key	7
Not Used	J	Coin Counter 1	8
Not Used	K	Not Used	9
L Speaker -	L	L Speaker +	10
R Speaker -	M	R Speaker +	11
Video Green	N	Video Red	12
Video Sync	P	Video Blue	13
Service	R	Video GND	14
Not Used	S	Test	15
Coin 2	T	Coin 1	16
Player 2 Start	U	Player 1 Start	17
Not Used	V	Not Used	18
Not Used	W	Not Used	19
Not Used	X	Not Used	20
Not Used	Y	Not Used	21
Not Used	Z	Not Used	22
Not Used	Aa	Not Used	23
Not Used	Ab	Not Used	24
Not Used	Ac	Not Used	25
Not Used	Ad	Not Used	26
GND	Ae	GND	27
GND	Af	GND	28

Figure 12. JAMMA Pins Supported by America's Army

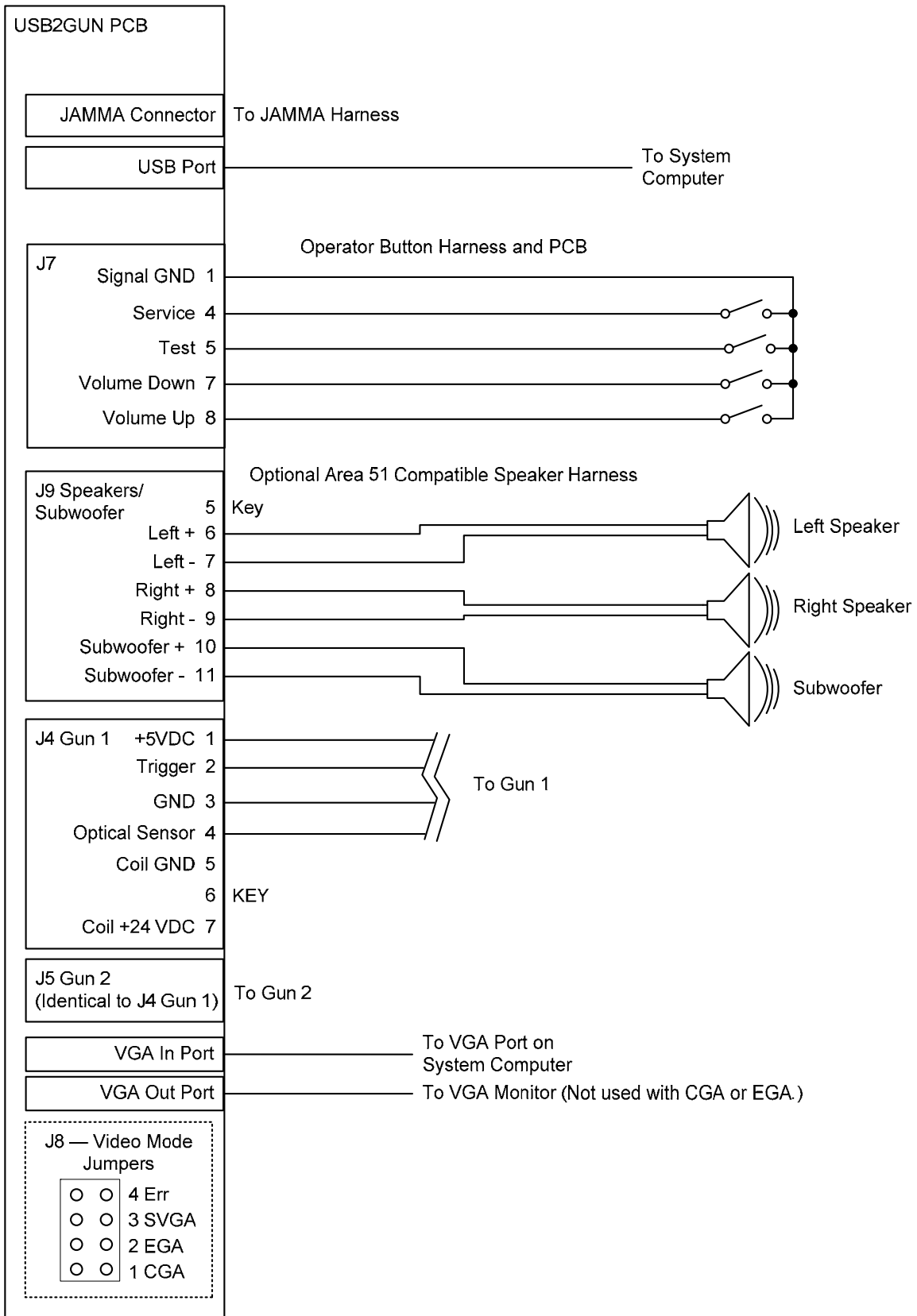


Figure 13. USB2GUN PCB Wiring Diagram

Technical Support

Service & Parts

Hours: 7:00AM–5:00PM Pacific Time, Monday–Friday

Phone: 408.597.3435

Fax: 408.597.3437

E-mail: techsupport@globalvr.com

Website: <http://service.globalvr.com>

Extended Service Hours: Monday–Friday 5pm—Midnight
Saturday & Sunday 7:00am—Midnight Pacific Time

Free telephone, e-mail, and online support are provided for systems during the warranty period. GLOBAL VR® Technical Support can help you troubleshoot problems and diagnose defective parts. We can also answer questions about the operation of your game.

When you contact Technical Support, please provide the information listed below to assist the Technical Support representative in solving your problem quickly. For your convenience, space is provided to write important numbers.

- Cabinet Serial Number: _____
- Build Number (from Operator Menu): _____
- I/O Board Number (from Operator Menu): _____
- Your mailing address and telephone number.
- A summary of the question or a detailed description of the problem with your cabinet.

The additional information listed below, as applicable, may assist Technical Support in solving your problem quickly.

- Specific error message
- Any changes made to the system
- Date of latest software install or upgrade
- For game-play issues, the game mode and number of players

To comment on this manual, please e-mail: techpubs@globalvr.com