

ultracade™

Kit Installation Manual





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ULTRACADE™

KIT INSTALLATION MANUAL

VERSION 3.0

- Read this booklet before use.
- Keep this booklet with machine at all times.

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ULTRACADE KIT™

TABLE OF CONTENTS

1. GETTING STARTED	5	4.3	EGA / CGA Monitor Dongle	8
1.1 Introduction	5	4.4	Video Pass Through Cable	8
1.2 Kit Package Inventory	5	4.5	Mounting the Graphite	8
1.3 Recommended Tools and Supplies	5	5. POWER SETUP	9	
2. CABINET PREPARATION	6	5.1 AC Adapter Cord	9	
2.1 Warnings	6	5.2 Graphite Power	9	
2.2 PCB Removal	6	5.3 Monitor Power	9	
2.3 Wiring Removal	6	5.4 Marquee Light Power	9	
2.4 Joystick / Button Removal	6	5.5 Power On Test	9	
2.5 Artwork Removal	6	6. WIRING INSTALLATION	9	
2.6 Determining Your Monitor Type	6	6.1 JAMMA Harness	9	
2.7 Cleaning / Painting	6	6.2 Control Panel Wiring	9	
3. CONTROL PANEL	7	6.2.1 Buttons 5 and 6	10	
3.1 Control Panel Layout	7	6.2.2 Exit Button	10	
3.2 Control Panel Overlay	7	6.3 Video Wiring	11	
3.3 Joystick Installation	7	6.4 Speaker Wiring	11	
3.4 Button Installation	7	6.5 Coin Door Wiring	11	
3.5 Exit Button Installation	7	7. ARTWORK	11	
4. GRAPHITE INSTALLATION	8	7.1 Side Art	11	
4.1 Bracket Installation	8	7.2 Marquee	11	
4.2 USBlinx Cable Harness	8	8. FINAL CONFIGURATION	12	
		8.1 Operator Setup Menu	12	

ULTRACADE KIT™

TABLE OF CONTENTS

8.2	Accounting Information12
8.3	Credits / Coins12
8.4	Cabinet Configuration12
8.5	Volume12
8.6	Wiring Test12
8.7	Common Monitor Problems12

1. GETTING STARTED

1.1 INTRODUCTION

This manual is intended for game operators and service technicians and describes how to install and test your ULTRACADE kit. This manual contains information on the conversion of your existing cabinet into a functional ULTRACADE cabinet.

HyperWare, Inc. assumes no liability for any damages incurred while installing ULTRACADE. As such, only qualified service personnel should perform this installation.

1.2 KIT PACKAGE INVENTORY

Open the shipping package for your ULTRACADE kit and inspect it for damage. Next, check the kit inventory for missing components. Refer to Table 1-1 and Figure 1-1.

Description	Qty.	Part #
1 Ultracade Artwork Tube Kit	1	-
Control Panel Overlay	1	885-0004-01
Rightside Ultracade	1	885-0003-01
Leftside Ultracade	1	885-0002-01
Marquee Ultracade	1	885-0001-01
2 Bracket, Tower	1	850-0108-01
2 Bracket, Shelf	2	850-0109-01
3 Joystick, Ultracade Kit	2	255-0001-01
4 Power Cord	1	240-0001-01
4 AC Adapter Cord	1	115-0019-01A
5 Screw kit	1	-
Nut, Kep, 10/24 Hex Joystick	8	102-0002-01
Bolt, Carriage 10/24 x 1.5in	8	103-0001-01
Washers Flat	8	101-0002-01
Screw 6/32 with star washer	6	100-0001-01
6 Button kit	1	-
Blue Push Buttons	12	250-0003-01
Player 1 Start Button	1	250-0001-01
Player 2 Start Button	1	250-0002-01
Exit Button	1	250-0004-01
7 Manual, Ultracade Kit Installation	1	865-0002-01
7 Manual, Ultracade Operation	1	865-0001-01
8 Cable, Video Pass Through	1	115-0016-01
8 Dongle, EGA Medium Res.	1	245-0002-01
8 Dongle, CGA Low Res.	1	245-0001-01
9 Cable, Jamma+ Harness	1	115-0006-01
10 CD, Ultracade OS	1	855-0001-01
10 CD, Game Pack, Base Install	1	930-0020-01
11 Graphite, Ultracade System	1	980-0002-01
Graphite System	1	-
USBlinx	1	-
USBlinx Cover	1	-
USBlinx Cable Harness	1	-

TABLE 1-1 KIT INVENTORY

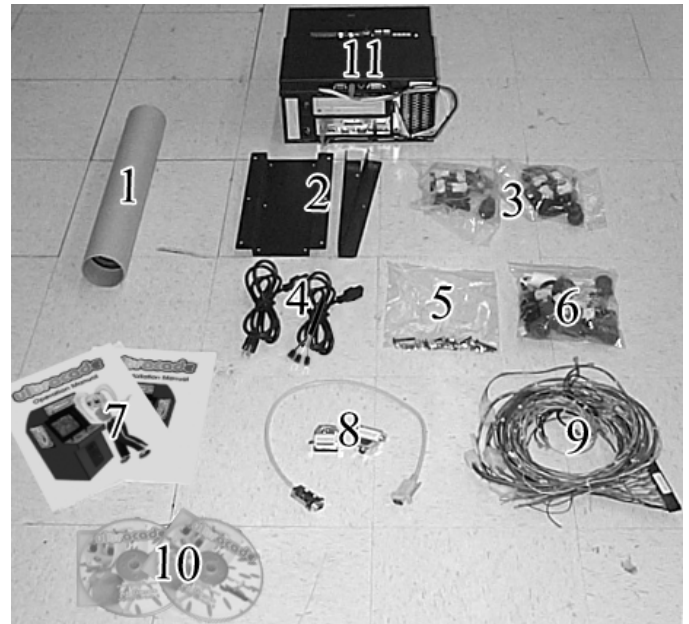


FIG. 1-1 KIT INVENTORY

If you suspect that any part of your kit is missing please contact HyperWare technical support at 408-895-0315.

Note: The Graphite, USBlinx, USBlinx cover, and USBlinx cable harness come pre-assembled. The OS and Gamepack CD come pre-installed.

1.3 RECOMMENDED TOOLS AND SUPPLIES

The following tools and supplies are recommended to complete the conversion of your existing cabinet into an ULTRACADE:

- Phillips and flat-head screwdrivers
- Wire cutters and strippers
- Pliers
- Nylon button wrench
- Power drill
- Tie wraps
- Wood or sheet metal screws
- Standardized socket set
- Razor blade
- Squeegee
- Electrical tape or heat shrink tubing
- Wire nuts
- Vacuum cleaner or air compressor
- Glass cleaner
- C-Clamps
- Rubber mallet or hammer
- Grease pencil
- Multimeter
- Assorted female spade connectors
- Crimpers
- Safety glasses
- Painting Supplies
 - Paint brush, roller, or power sprayer
 - Black semi-gloss paint and primer
 - Sand paper or electric sander
 - Putty knife and wood putty
 - Masking tape

2. CABINET PREPARATION

2.1 WARNINGS

When working on the cabinet always be sure that it is unplugged from the wall. Also, remember that even though your monitor is powered off it can still carry a high electrical charge which can result in severe injury or death. ULTRACADE kits should always be installed by a qualified technician.

2.2 PCB REMOVAL

If the cabinet you have chosen for your ULTRACADE still contains a PCB, it is suggested that the PCB be removed along with any cage or mounts that may also be inside the cabinet. If space allows, you may choose to leave the PCB in the cabinet.

2.3 WIRING REMOVAL

Your ULTRACADE kit is JAMMA compatible. If the cabinet you are installing the kit into is already a JAMMA cabinet, you may choose to leave the wiring intact. Some minor modifications may still be needed to take full benefit of all the options available to you with ULTRACADE.

If using the existing wiring is not possible then remove all the old wiring from the control panel, test switches, coin door, speakers, and PCB power. **Do not remove any wires which supply power to your monitor or marquee light.** The video signal wires can be cut if you wish to splice into them or fully removed if you intend to wire a new molex connector for your monitor (your new ULTRACADE kit does not come with a molex connector for your monitor). If your monitor is VGA (15 pin connector) then nothing will need to be done to it.

2.4 JOYSTICK / BUTTON REMOVAL

Remove any joysticks and buttons from the control panel in preparation for the installation of the new control panel overlay.

2.5 ARTWORK REMOVAL

Remove the side art from the old cabinet. Sand down or remove the old control panel overlay. Remove any stickers from the monitor glass and bezel. Remove the marquee. If the old marquee has been silk-screened onto the plexiglass, you will need a new piece of plexiglass for your ULTRACADE marquee. Clean any glue residue left behind from old stickers.

2.6 DETERMINING YOUR MONITOR TYPE

It is important to know for the proper working order of your ULTRACADE what type of monitor is in your cabinet. ULTRACADE supports CGA (standard resolution/ 16.50 KHz), EGA (medium resolution / 25.00 KHz) or VGA (high resolution / 31.55 KHz) monitors. If you do not know what type of monitor you have then you will need to determine this. The easiest way is to check the monitor manual. In the event you no longer have your monitor manual, you will need to record the picture tube serial number and model and contact the manufacturer. When working on your monitor be sure to closely follow all warnings and precautions that come with it.

Note: ULTRACADE does not support vector monitors or any monitor that requires a color inverter.

2.6 CLEANING / PAINTING

You may also want to clean and/or paint your cabinet before installing your ULTRACADE kit. Any dust should be either vacuumed or blown out of the cabinet with an air compressor. If you decide to paint, any dents, chips, or other damage should be filled in with wood putty and sanded smooth. A black semi-gloss paint is recommended for painting an ULTRACADE kit cabinet.

3. CONTROL PANEL

3.1 CONTROL PANEL LAYOUT

ULTRACADE is optimally designed for an upright cabinet with two joysticks, six buttons for each joystick, and two start buttons. ULTRACADE will also support a single joystick configuration with six buttons and two start buttons. Additionally, ULTRACADE has cocktail support built in.

ULTRACADE kits also come with an exit button. This button is used by the player to exit a game and return to the main game selection screen. **If this button is not installed players will not be able to exit the game and select another!**

Note: When ULTRACADE is set to single or cocktail mode a two player simultaneous game will only start a single player game. Games which did not originally support a cocktail cabinet will not run in ULTRACADE cocktail mode.

If your control panel does not have the correct holes for the joysticks and/or buttons, then you will need to drill more button and/or joystick holes. Figure 3-1 illustrates the suggested layout for the ULTRACADE cabinet and a pull out sheet has been enclosed at the back of this manual which can be used as a template. Buttons will require a 1.13" diameter hole. Joysticks will require a 1 1/4" diameter hole for the stick and a 13/64" diameter hole for each mounting bolt. The exit button requires a 1.13" diameter hole for the button and 1/8" diameter holes for the button stabilization studs. Also, take into account whether you are drilling into wood, plexiglass, or metal and choose your drill bit accordingly.

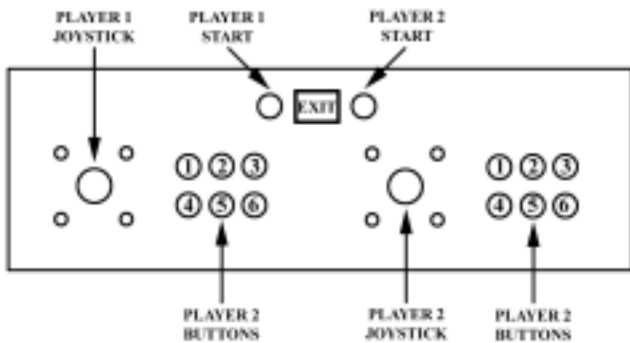


FIG. 3-1 CONTROL PANEL LAYOUT

3.2 CONTROL PANEL OVERLAY

Once the desired control panel layout has been achieved, the new overlay can be installed. The old overlay should be removed and the control panel should be cleaned. Use an X-acto knife or razor blade to cut the new overlay to the correct size. When applying the overlay carefully line it up and then use a squeegee or straight edge to remove any bubbles. Once the new overlay is on, you will need to carefully cut out holes for the joysticks and buttons.

3.3 JOYSTICK INSTALLATION

Your ULTRACADE kit comes with two 8-way joysticks. Joystick nuts and bolts are also supplied in the kit. When tightening the

joystick down use a 3/8" deep socket. The actuator on the joystick can be flipped for eight-way (the thick end) or four-way (the thin end) play. ULTRACADE is designed for use with eight-way joysticks. Games that originally used four-way joysticks will automatically have the four-way joystick simulated by the ULTRACADE software. Refer to Figure 3-2 when installing.

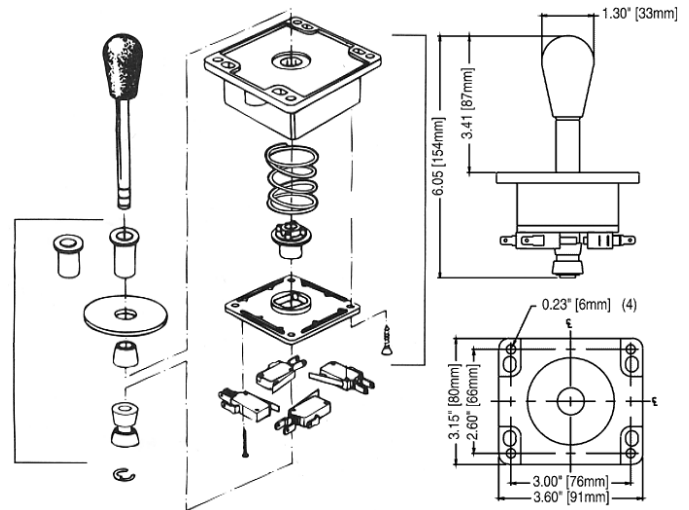


FIG. 3-2 JOYSTICK INSTALLATION

3.4 BUTTON INSTALLATION

Your ULTRACADE kit comes with 12 blue buttons, a player one start button, and a player two start button. Refer to Figure 3-3 when installing.

Note: Your control panel can be no thicker than .79" to install the button.

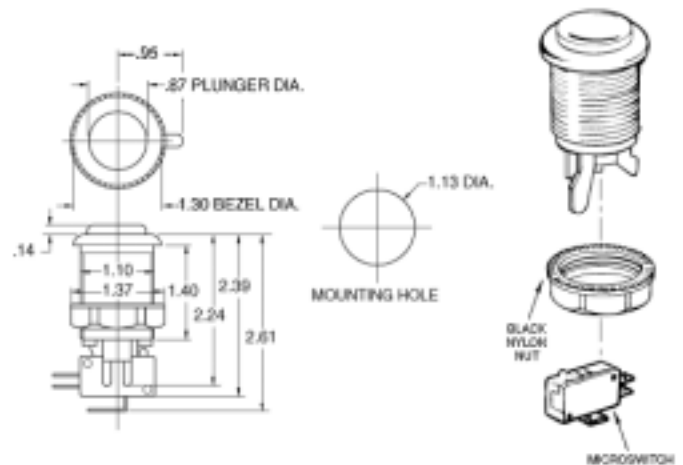


FIG. 3-3 BUTTON INSTALLATION

3.5 EXIT BUTTON INSTALLATION

Your ULTRACADE kit comes with a lighted exit button. Refer to Figure 3-4 when installing.

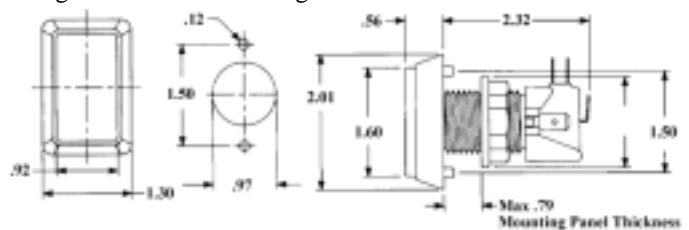


FIG. 3-4 EXIT BUTTON

4. GRAPHITE INSTALLATION

4.1 BRACKET INSTALLATION

When installing the Graphite in your cabinet you have a choice between a shelf (horizontal) or tower (vertical) mounting. See Figure 4-1 for examples. When choosing, look at the space available in your cabinet and determine the best location for the Graphite (you will need access to the CD-ROM and floppy drives). Once you have determined what orientation you will use, install the corresponding bracket(s) using the six 6/32" screws provided. Refer to Figure 4-1 if you have any problems attaching the brackets to your Graphite.

Note: You will need to leave at least a 2" clearance between the cabinet and the mounted Graphite to ensure proper air intake for cooling.

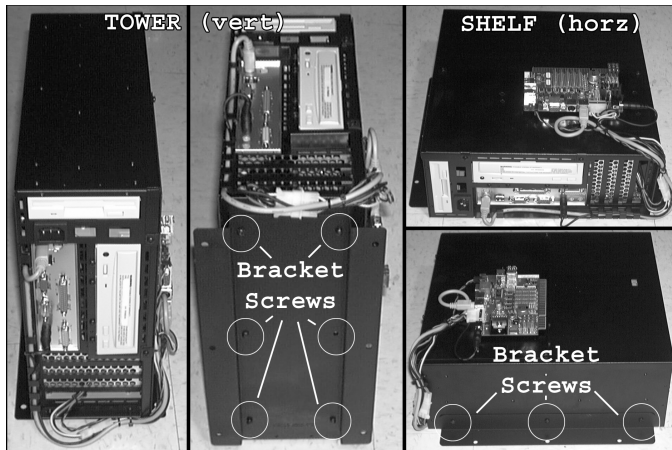


FIG. 4-1 BRACKET INSTALLATION

4.2 USBLINX CABLE HARNESS

The USBlinx cable harness comes pre-assembled to the Graphite. It contains four cables:

- PS2 keyboard cable
- Audio cable
- 4-pin female molex power cable
- 2-pin female watchdog timer cable

The USBlinx cable harness should never be removed unless specifically instructed to by a HyperWare technical support representative.

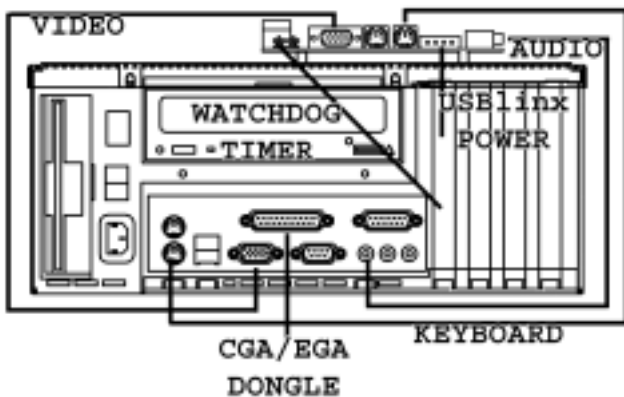


FIG. 4-2 USBLINX CABLES

4.3 CGA / EGA MONITOR DONGLE

If you have a CGA or EGA monitor then will need to plug the appropriate monitor dongle into the Graphite. If you have a VGA monitor you will not need either dongle.

Both dongles are 25-pin male connectors and are clearly labeled. Plug the appropriate dongle for your monitor into the pink parallel port on the Graphite. When plugging in, refer to Figure 4-2 for the correct location. Use a small flat tipped screwdriver to tighten the screws to insure that the dongle does not come loose.

4.4 VIDEO PASS THROUGH CABLE

If you have a CGA or EGA monitor then the video pass through cable will need to be attached. Plug one end of the cable into the USBlinx and the other into the Graphite video port. This cable has a 15-pin male connector on each end and will pass the video signal coming from the Graphite to the USBlinx. The USBlinx will then amplify the red, green, and blue signals to the monitor, making the picture brighter. Refer to Figure 4-2 when attaching the cable.

If you have a VGA monitor then the video pass through cable does not need to be attached. If the VGA cable is not long enough you may need to mount the Graphite in a different location or purchase a VGA extension cable from a local computer or electronics store.

4.5 MOUNTING THE GRAPHITE

When the Graphite is ready, place it inside the cabinet in the chosen spot and securely mount it down with six screws. Take into account whether you are mounting into wood, plastic, or sheet metal and use the appropriate screws. No mounting screws are provided. When finished, the Graphite should look something like Figure 4-3.

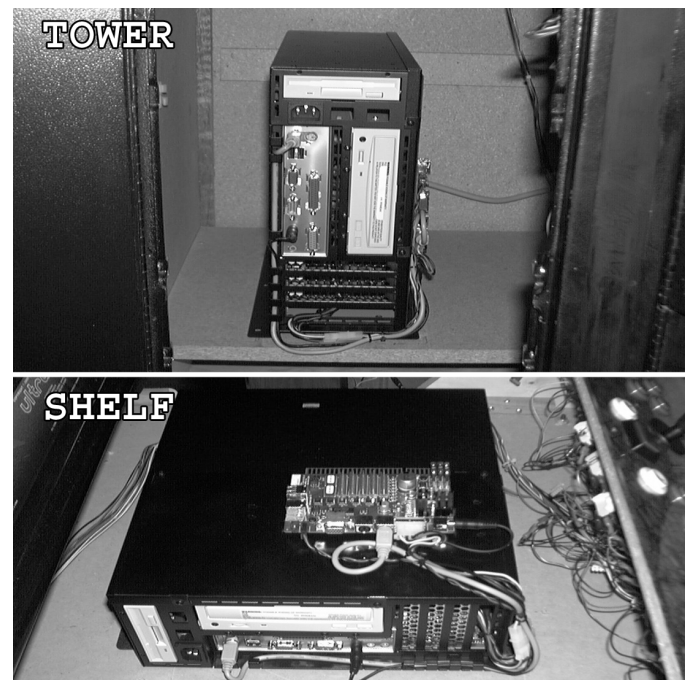


FIG. 4-3 MOUNTED GRAPHITE

5. POWER SETUP

5.1 AC ADAPTER CORD

Your ULTRACADE kit comes with an AC adapter cord (Figure 5-1) and a standard computer power cable. If the cabinet has a power strip you will be able to use the standard power cord, otherwise the AC adapter cord will need to be wired into the main power supplied to the cabinet. The AC adapter wiring is as follows: Green - ground, White - neutral, Black - 120V AC.

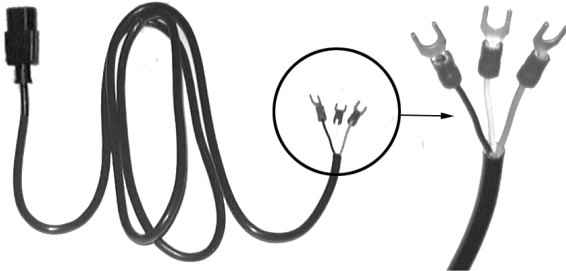


FIG. 5-1 AC ADAPTER CORD

The other end of your AC Adapter cord plugs into the Graphite next to the floppy drive (Figure 5-2). Before powering on, check the Graphite voltage switch to make sure it is set to the correct voltage (120V or 230V). The switch is located on the top of the Graphite behind the JAMMA edge.

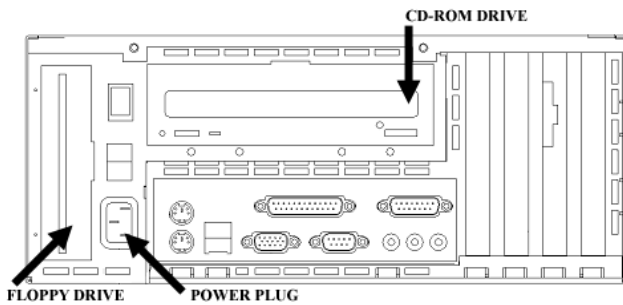


FIG. 5-2 GRAPHITE REAR PANEL

5.3 MONITOR POWER

The power for your monitor should already be wired. If you have installed a new monitor in the cabinet then you will need to supply power to it. When wiring the monitor, refer to the owner's manual for wiring instructions and/or schematics.

5.4 MARQUEE LIGHT POWER

The marquee light should already be supplied with power. If it is not, then you will need to wire it.

5.5 POWER ON TEST

Plug your cabinet in and turn it on. If the Graphite, monitor, or marquee light does not power on, you will need to check the wiring. Also check that the LEDs on the USBlinx are lit up. This insures that the USBlinx is being supplied with power. A multimeter can be used to check the continuity and voltages.

Note: Your Graphite should always power on once power is supplied

6. WIRING INSTALLATION

6.1 JAMMA HARNESS

Your ULTRACADE kit is JAMMA compatible. If you are installing the kit in a JAMMA cabinet you may have left your old wiring in. Use Table 6-1 to check the residual wiring. Take note of pins L,M,10 and 11 which are for the speaker wires and pins AC and 25 which are for the fourth player buttons.

Your JAMMA+ harness connects directly into the edge of the USBlinx. The USBlinx is mounted on top of the Graphite with the edge facing the rear of the computer. The JAMMAedge is keyed so that the harness, if it has a white key in the seventh slot, can not be attached incorrectly to your USBlinx (Figure 6-1).

Your new JAMMA+ harness contains seven bundles of wire. The bundles are: player one, player two, exit button, speaker, video, and power.

The power bundle is not used and can be tie wrapped neatly out of the way.

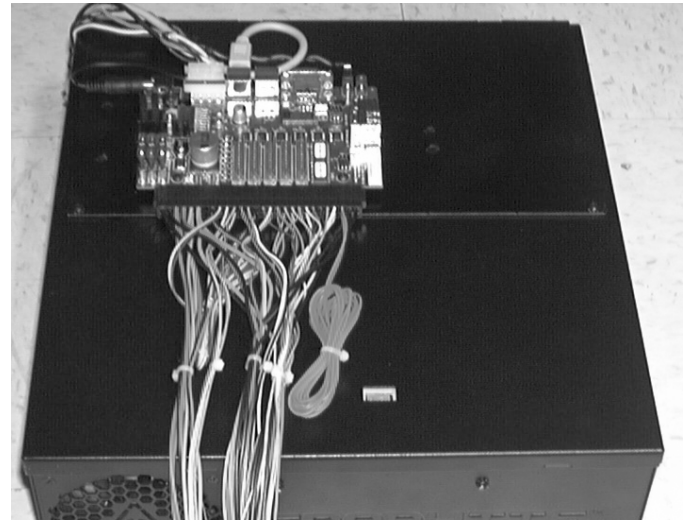


FIG. 6-1 CONNECTING JAMMA HARNESS

6.2 CONTROL PANEL WIRING

On the player one and player two bundles, each bundle ends in spade connectors that easily interface with the joystick and button microswitches provided in your ULTRACADE kit (Figure 6-2). When connecting the wires, use Table 6-1 for reference.

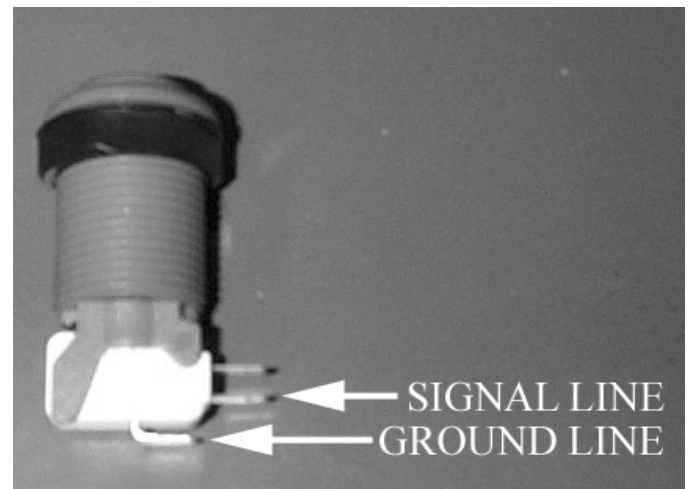


FIG. 6-2 MICROSWITCH WIRING

SOLDER			COMPONENT			
Ground	BLK	A		1	BLK	Ground
Ground	BLK	B		2	BLK	Ground
+5V	RD	C		3	RD	+5V
+5V	RD	D		4	RD	+5V
-5V	BL	E		5	BL	-5V
+12V	OR	F		6	OR	+12V
KEY		H		7		KEY
Not Used	WH/RD	J		8	WH/BLK	Meter 1
Not Used	BLK/GRN	K		9	BLK/YL	Not Used
Left Speaker -	BL/RD	L		10	RD/YL	Left Speaker +
Right Speaker -	BL/GR	M		11	RD/BLK	Right Speaker +
Video Green	GRN	N		12	RD	Video Red
Video Sync	WH	P		13	BL	Video Blue
Service Switch	WH/OR	Q		14	BLK	Video Ground
Not Used (Tilt)	BLK/WH	S		15	WH/BRN	Test Switch
Coin 2	BRN/BLK	T		16	YL/BLK	Coin1
P2 Start	RD/WH	U		17	RD	P1Start
P2 Up	BL/WH	V		18	BL	P1Up
P2 Down	GRN/WH	W		19	GRN	P1Down
P2 Left	OR/WH	X		20	OR	P1Left
P2 Right	YL/WH	Y		21	YL	P1Right
P2 Button 1	BRN/WH	Z		22	BRN	P1Button 1
P2 Button 2	PR/WH	Aa		23	PR	P1Button 2
P2 Button 3	GRY/WH	Ab		24	GRY	P1Button 3
P2 Button 4	GRN/YL	Ac		25	GRN/RD	P1Button 4
Not Used	OR/BLK	Ad		26	OR/RD	Not Used
Ground	BLK	Ae		27	BLK	Ground
Ground	BLK	Af		28	BLK	Ground

TABLE 6-1 JAMMA PINOUTS

BL - Blue	OR - Orange
BLK - Black	PR - Purple
BRN - Brown	RD - Red
GRN - Green	WH - White
GRY - Grey	YL - Yellow
P1 - Player 1	P2 - Player 2

TABLE 6-2 JAMMA PINOUTS KEY

6.2.1 BUTTONS 5 & 6

Your ULTRACADE kit also contains an extra 5-pin molex connector for the fifth and sixth player buttons and the exit button. The wires which lead from this connector will break off into the appropriate player bundle. Refer to Table 6-3 when connecting to the microswitches.

Pin #	Color	Connects To
7	BL	Exit Button
8	GRN / WH	P1 Button 5
9	YL / WH	P1 Button 6
10	RD	P2 Button 5
11	BL / YL	P2 Button 6

TABLE 6-3 EXTRA MOLEX PINOUTS

The 5-pin molex connector now needs to be plugged into your USBlinx. Locate the bank of pins labeled “player 3” behind the the JAMMA edge of the USBlinx. The blue wire with a yellow stripe on the 5-pin molex connector goes on pin 11, which will be one pin in from the edge of the connector. Use Figure 6-3 for reference.

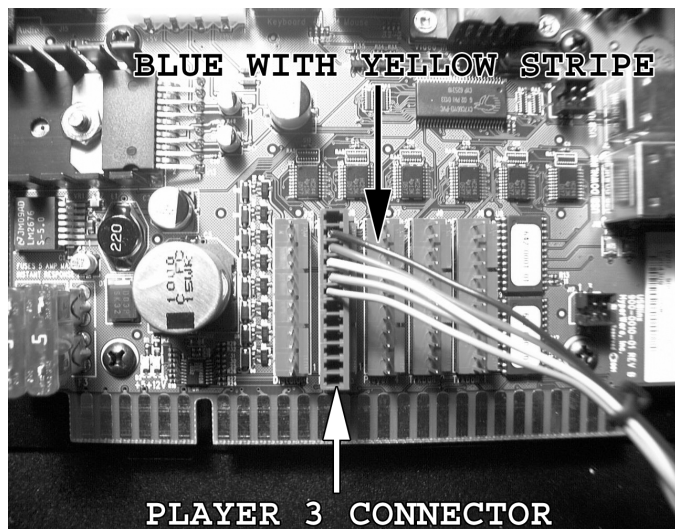


FIG. 6-3 CONNECTING 5-PIN MOLEX

6.2.2 EXIT BUTTON

When wiring the exit button, locate the wire bundle labeled “exit.” The signal line is taken from the blue wiring stemming from the 5-pin molex connector. The 12 volt line necessary to light the exit button is colored orange and the ground line is black. Refer to Table 6-3 and Figure 6-4.

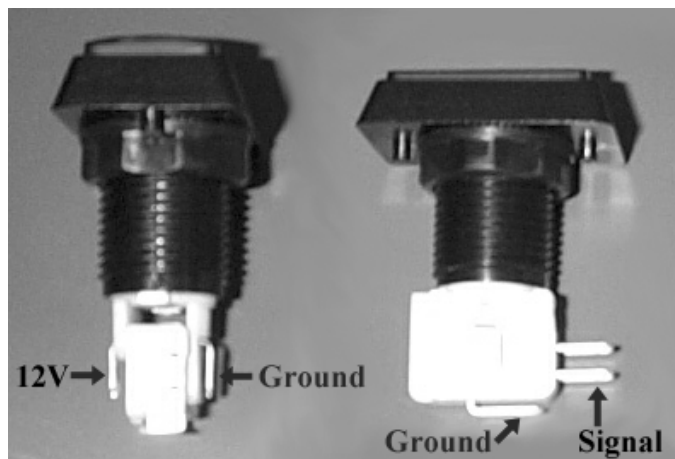


FIG. 6-4 EXIT BUTTON WIRING

6.3 VIDEO WIRING

You will only need to wire the video lines from the JAMMA harness if you have a CGA or EGA monitor. If you have a VGA monitor you may skip this section. To determine what type of monitor you have, refer to section 2.6 DETERMINING YOUR MONITOR TYPE.

Wiring your video will require you to either splice into the current video lines or wire an entirely new molex connector. To do this, the video bundle in the JAMMA harness is color-coded as follows:

- Red wire - Red signal
- Green wire - Green signal
- Blue wire - Blue signal
- Black wire - Video ground
- White wire - Composite sync

To determine the correct wiring pinout for your monitor refer to the owners manual or contact the manufacturer for a wiring schematic.

Note: HyperWare, Inc. is not liable for any damage done to monitors through incorrect wiring.

6.4 SPEAKER WIRING

ULTRACADE uses stereo audio. To determine the left and right speaker cables refer to Table 6-1 or Table 6-4. The wires coming from the speakers will need to be spliced into the speaker wires stemming from the JAMMA harness.

Pin #	Color	Connects To
L	B L / R D	Left Speaker -
M	B L / G R	Right Speaker -
10	R D / Y L	Left Speaker +
11	R D / B L K	Right Speaker +

TABLE 6-4 SPEAKER BUNDLE

6.5 COIN DOOR WIRING

The coin door bundle on the JAMMA+ harness ends in two molex connectors. The 4-pin connector is used for the service/test switch and the coin meter. The 9-pin connector is used for the coin switches, and coin door lights. Refer to Table 6-1 for the correct pinouts.

7. ARTWORK

The control panel overlay should already be installed when installing your joysticks and buttons. Refer to 3.2 CONTROL PANEL OVERLAY.

7.1 SIDE ART

Your ULTRACADE kit comes with left and right side art. Refer to Figure 7-1 for placement. Remember to remove old side art and clean any glue residue left behind before affixing the new art. When completed, use a squeegee or straight edge to remove any bubbles from the sticker.



FIG. 7-1 ARTWORK PLACEMENT

7.2 MARQUEE

Your new ULTRACADE marquee may need to be trimmed to fit into the cabinet. Use a razor blade and straight edge to trim it down. If your old marquee was silk screened onto the plexiglass, you will need a new piece of clear plexiglass.

8. FINAL CONFIGURATION

The ULTRACADE Operating System comes pre-installed but you may want to modify some of your settings. Below is a quick check list but you may wish to refer to your ULTRACADE Operation Manual for more details.

8.1 OPERATOR SETUP MENU

Your ULTRACADE kit is complete except for the final software configuration. Power on your ULTRACADE and press the service switch to enter the Operator Setup Menu. Refer to your ULTRACADE Operation Manual for help using the setup menus. If, after powering on, you are experiencing monitor problems refer to section 8.7 COMMON MONITOR PROBLEMS.

8.2 ACCOUNTING INFORMATION

Reset your accounting report data so that your ULTRACADE keeps proper accounting dates.

8.3 CREDITS / COINS

Change these settings to adjust the pricing for your ULTRACADE and to turn the bonus credit on or off. Your ULTRACADE's default setting is one coin drop to one play.

8.4 CABINET CONFIGURATION

In the cabinet configuration menu, set your screen orientation (vertical, horizontal, etc.), the cabinet orientation (upright, single, or cocktail), the location name, and the attract mode volume.

8.5 VOLUME

Adjust the volume so it is at a acceptable level for your location.

8.6 WIRING TEST

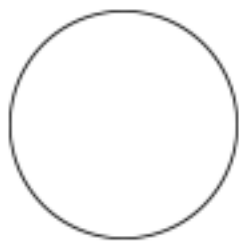
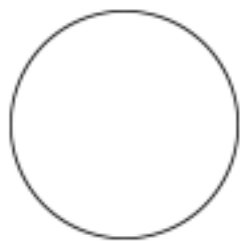
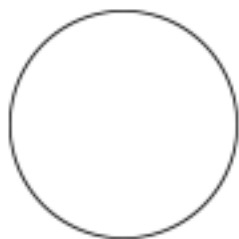
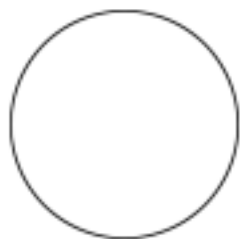
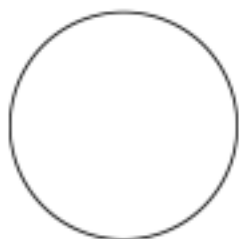
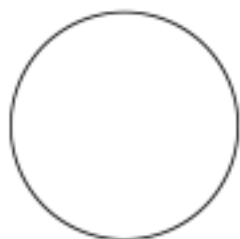
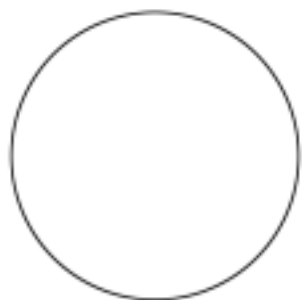
Your ULTRACADE software has built in JAMMA diagnostics which you can use to test all the wiring. To use these diagnostics refer to section 3.6.3 DIAGNOSTICS of your ULTRACADE Operation Manual.

8.7 COMMON MONITOR PROBLEMS

Refer to Table 8-1 for a list of common monitor problems and possible solutions.

PROBLEM	SOLUTION
Distorted or discolored image	Degauss monitor
Scrambled image	You may have used the wrong CGA / EGA monitor dongle
No raster	Make sure you have hooked up the Video Pass Through Cable if you have a CGA or EGA monitor
Vertical or horizontal sync is off	ULTRACADE uses a composite sync. Make sure your monitor can handle a composite sync. If it can not then you will need to jump the horizontal and vertical syncs on the monitor together.

TABLE 8-1 COMMON MONITOR PROBLEMS



ultracade™

Operation Manual





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ULTRACADE™

OPERATION MANUAL

VERSION 3.71

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

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San Jose, CA 95131

ULTRACADE™

TABLE OF CONTENTS

1. LEGAL INFORMATION	5	3.3.4	Credit/Coin Settings	9
1.1 Safety Notices	5	3.3.5	Tournament Settings	10
1.2 Warnings	5	3.3.5.1	Location Entry	10
1.3 Environmental Conditions	5	3.3.5.2	High Score Settings	10
1.4 FCC Notices	5	3.3.6	Timers Settings	10
1.5 License Information	5	3.3.7	Factory Defaults	11
1.5.1 Joshua Operating System	5	3.4	Game Configuration	11
1.5.2 AMIJEN Properties	6	3.4.1	Intelli Settings	11
1.6 Warranty Information	6	3.4.1.1	Intelli-Earn™	11
1.6.1 Warranty Service	6	3.4.1.2	Intelli-Sort™	11
		3.4.1.3	Inteeli-Tune™	12
2. GAME SETUP	6	3.4.2	Individual Game Settings	12
2.1 Game Features	6	3.4.3	Add New Games	13
2.2 Pre-Game Installation	6	3.5	Accounting Information	13
2.3 Game Inspection	7	3.5.1	Sort Reports By	13
2.4 Game Installation	7	3.5.2	View Earnings Report	13
		3.5.3	View Time Report	14
3. OPERATOR SETUP MENU	8	3.5.4	Reset Report Data	14
3.1 Operator Setup Menu	8	3.5.5	Copy Current/Lifetime Report	14
3.2 Language Setting	8	3.6	Diagnostics	14
3.3 Cabinet Setup	8	3.6.1	Control Test	14
3.3.1 Cabinet Type	8	3.6.3	Trackball & Dial Test	15
3.3.2 Display Settings	8	3.6.4	JAMMA Test	15
3.3.3 Sound Settings	9			

ULTRACADE™

TABLE OF CONTENTS

3.6.4 Sound Test15

3.6.5 Video Test15

4. TROUBLESHOOTING16

4.1 OS Re-installation16

4.2 Technical Support16

ULTRACADE™

1. LEGAL INFORMATION

1.1 SAFETY NOTICES

The following safety instructions apply to all game operators and service personnel. Specific warnings and cautions will be found throughout this manual where applicable. We recommend that you read this page before preparing your ULTRACADE for game play.

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

- To help avoid damage to the computer, be sure the voltage selection switch on the power supply is set to match the AC power available at the 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 power cables into properly grounded power sources. 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, transient 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.
- Do not spill food or liquid on your system.
- Do not push any objects into the openings of the system. Doing so can cause fire or electric shock by shorting out interior components.
- Keep your computer far away from radiator and heat sources.
- Do not block cooling vents.

1.2 WARNINGS

- Make sure all your connections are correct prior to switching on this product.
- There are no user servicable devices in this product. Opening the case of the Graphite system will void the warranty.
- This device is static sensitive.
- Power supply is 90~250VAC 7~3A
- Monitor requirement is 4:3 Horizontal VGA

1.3 ENVIRONMENTAL CONDITIONS

ULTRACADE is intended for indoor use only. Be sure to keep dry and maintain operating temperatures of 10-40° Celsius.

1.4 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 a radio navigation or other safety service or 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, include 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:

- Reorient the receiving antenna
- Relocate the computer with respect to the receiver.
- Move the ULTRACADE away from the receiver
- Plug the ULTRACADE into a different outlet so that the computer and the receiver are on different branch circuits.

If necessary, consult a Regulatory EMC representative of Ultracade Technologies, Inc or an experienced radio/television technician for additional suggestions. You may find the FCC Interference Handbook, 1986, to be helpful. It is available from the U.S. Government Print Office, Washington, DC 20402, Stock No. 004-000-00450-7 or on the word wide web at: <http://www.fcc.gov/bureaus./compliance/www/tvibook.html>.

This device has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, and if not installed and used in accordance with the instruction manual, may cause harmful interference with radio communications. Operation of this equipment in an 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.

1.5 LICENSE INFORMATION

1.5.1 JOSHUA OPERATING SYSTEM

The JoshuaOS™ is used under license from Joshua Technology, Inc. Joshua Technology, Inc. retains all rights to the code, trademarks and copyrights. By accepting and operating an ULTRACADE system, the owner/operator of each ULTRACADE system agrees to abide by all copyrights and trademarks and not to attempt to decompile or modify the operating system in

anyway. Questions regarding this operating system should be directed to technical support at www.ultracade.com or support@ultracade.com. JoshuaOS is copyrighted 2001-2004 by Joshua Technology, Inc.

1.5.2 AMIJEN PROPERTIES

AMIJEN™ and the AMIJEN properties are used under license from Gregory J Lima. Gregory J Lima retains all the rights to all properties, trademarks and copyrights. AMIJEN is Copyrighted ©1997-2004 by Gregory J Lima.

1.6 WARRANTY INFORMATION

The ULTRACADE cabinet is guaranteed from manufacturing defects. ULTRACADE parts are guaranteed for 90 days.

1.6.1 WARRANTY SERVICE

If at some point you require warranty service, contact your distributor. If you purchased direct you can contact HyperWare ULTRACADE Technical Support at 1-408-436-8885 or support@ultracade.com. If technical support staff determines that your ULTRACADE is defective, a Return Merchandize Authorization (RMA) number will be issued.

2. GAME SETUP

2.1 GAME FEATURES

Congratulations on choosing ULTRACADE. ULTRACADE is available in an upright, dedicated cabinet with 27" VGA monitor and dual player control panel or as a kit for installation in existing cabinets. The ULTRACADE game engine can securely store and support hundreds of games. ULTRACADE comes with a pre-installed Game Pack of eighty seven classic games, licensed or owned by Ultracade Technologies, Inc. Additional ULTRACADE Game Packs are also available, each with a collection of popular, classic games licensed from the original manufacturers.

ULTRACADE provides the following benefits to operators:

- Consistent earnings from proven, licensed games for all generations and both men and women
- Low purchase price
- Multi-game system with low-cost Game Pack add-ons
- Ultracade Technologies, Inc. reliability
- Easy-to-use operator interface
- Game instructions displayed automatically as the player selects a game

2.2 PRE-GAME INSTALLATION

Remove the game from the shipping container. The 1st set of keys is in the coin return slot. The 2nd set will be hanging on the inside of the coin mech door. Refer to Figure 2-1 for specific locations of each part of the machine. Connect the wall cord to a grounded (3-terminal) AC wall outlet.

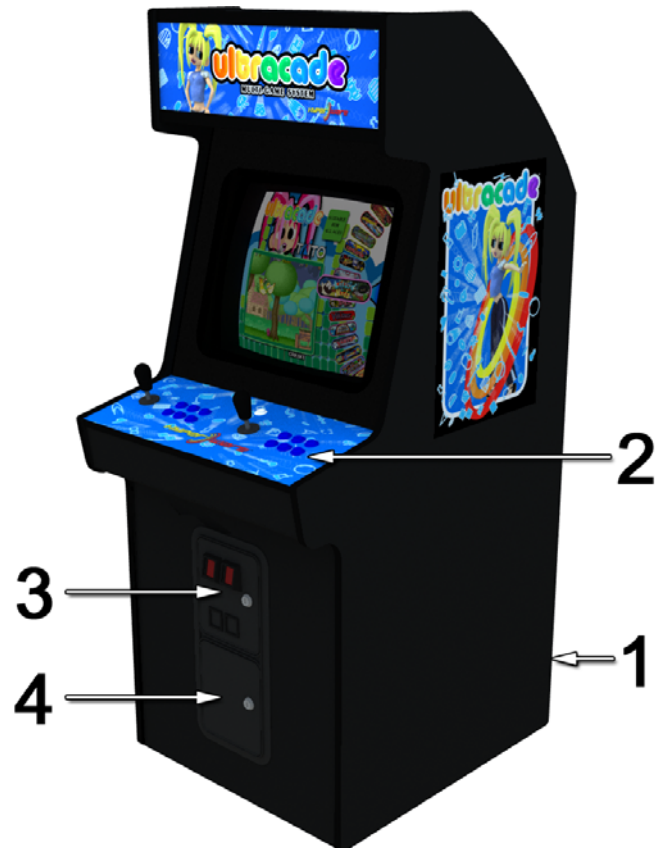


FIGURE 2-1 CABINET ASSEMBLY

#	Description
1	On / Off Switch on bottom rear of cabinet
2	Control Panel
3	Coin Mech Door and Coin Return Slots
4	Coin Box Door

TABLE 2-1 CABINET ASSEMBLY

The following precautions should be followed when installing the game:

- Avoid rough handling of the game, the picture tube is fragile.
- Install the game on a level surface.
- Avoid installing the game where it will receive excessive sunlight or heat, to protect the game from rising internal temperatures.
- Do not install in a damp or dusty location.
- For a short time after connecting the power to the game, the picture may be temporarily distorted.

The monitor's purity is affected by the Earth's magnetic field, causing a variation of color. By turning the game on for 10 or 15 seconds and then off for 20 or 30 minutes the automatic degaussing circuit applies a degaussing field around the edges of the monitor. Doing this several times will correct the problem.

Another way to correct the problem is to purchase a degaussing coil or bulk tape eraser at any electronics store. This will help to immediately demagnetize the video tube. Caution must be used with a degaussing coil so that the magnetic field of the degaussing coil is not allowed to become too intense at any one place on the picture tube, thereby causing a localized color distortion.

If you move the game to another location after degaussing the distortion may reappear. Refer to the video monitor manual for details.

2.3 GAME INSPECTION

ULTRACADE is shipped ready for operation, but a last visual check should be made to insure the game is in good condition. Please verify the following before turning the game on:

- Inspect the exterior of the game for any shipping damage, chips, dents, or broken parts.
- Open the rear service door and check for any interior damage.
- Check all major assemblies to assure they are mounted securely.
- Make sure there is no damage to the wiring and that all wires are properly connected.
- Open control panel and inspect Graphite system.
- Check for loose foreign objects, especially metal objects which may cause electrical problems.
- Open coin door and check test switch to make sure it is not damaged.

The game monitor is properly adjusted before shipping. If there are any adjustments necessary, refer to the video monitor manual. This manual contains all the manufacturers recommendations for

adjusting the video monitor.

2.4 GAME INSTALLATION

Power on the game. When the game is fully started open the coin mech door and press the red test button to enter the Operator Setup Menu. This will allow you to configure your ULTRACADE for your specific needs. For more information see section 3. OPERATOR MENU.

3. OPERATOR MENU

3.1 OPERATOR SETUP MENU

All ULTRACADE game audits, adjustments, and diagnostics are options of the Operator Setup Menu. Each option has its own submenu, listing several choices you may act upon as needed. Press the test button behind coin mech door in the cabinet to activate the Operator Setup Menu. Refer to Figure 2-1 and Figure 3-1 for locating the test button.

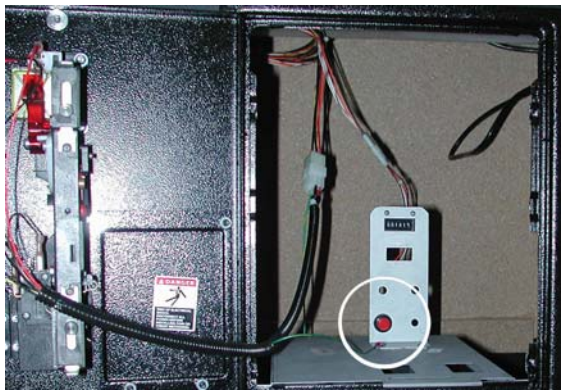


FIGURE 3-1 TEST BUTTON LOCATION

After you press the test button, you will see the operator setup menu which will allow you to access or modify the following: Language, Cabinet Setup, Game Configuration, Accounting Information, Diagnostics, and Exit.



FIGURE 3-2 OPERATOR MENU

To choose a menu option, move the arrow or cursor so that the desired option is highlighted. This is done using the player one joystick. When the desired option is highlighted press player one button one to select it and enter that submenu.

In this manual the term “highlight” will mean to position the arrow over the desired option. The term “select” will mean to press player one, button one. The exit option on all menus will always go back to a previous menu.

3.2 LANGUAGE SETTING

ULTRACADE now supports multiple languages. To change the language of the operator menus move the player one joystick either left or right. Supported languages are: English, French,

German, Italian, Spanish, and Dutch.

3.3 CABINET SETUP

The Cabinet Setup menu allows you to custom configure your ULTRACADE.



FIGURE 3-3 CABINET SETUP

3.3.1 CABINET TYPE

This option will set what type of cabinet you have. To change the settings highlight and move the joystick left or right.

- **UPRIGHT:** Standard upright cabinet with two joysticks and one trackball. This is the default setting.
- **UP-2BALL:** Standard upright cabinet with two joysticks and two trackballs.
- **COCKTAIL:** Cocktail cabinet with two joysticks, two trackballs, and opposing players.
- **SINGLE:** Standard upright or cocktail cabinet with only one joystick and one trackball.

3.3.2 DISPLAY SETTINGS

The display settings will allow you to adjust the screen orientation and CGA interlace tuning.



FIGURE 3-4 DISPLAY SETTINGS

SCREEN ORIENTATION

This option rotates the screen by 90°. Highlight and move joystick right or left to change among the different settings.

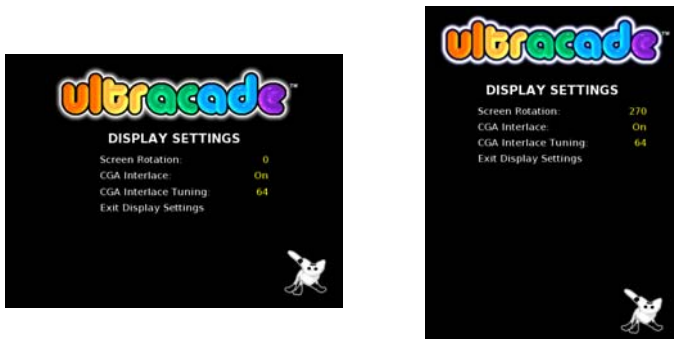


FIGURE 3-5 SCREEN ORIENTATIONS

CGA INTERLACE

This option will turn the cga interlacing on and off. Move th joystick right or left to change the setting.

CGA INTERLACE TUNING

This option allows operator to set CGA Interlacing to its most clear value. The range is 0-128. To change the setting, highlight CGA Interlacing Tuning on the Cabinet Configuration Menu (Fig. 3-10) and move joystick left or right until desired value appears.

Note: This will not work with EGA and VGA monitors.

3.3.3 SOUND SETTINGS

The sound settings menu will allow you to adjust the overall game volume and turn the attract mode sounds on or off.

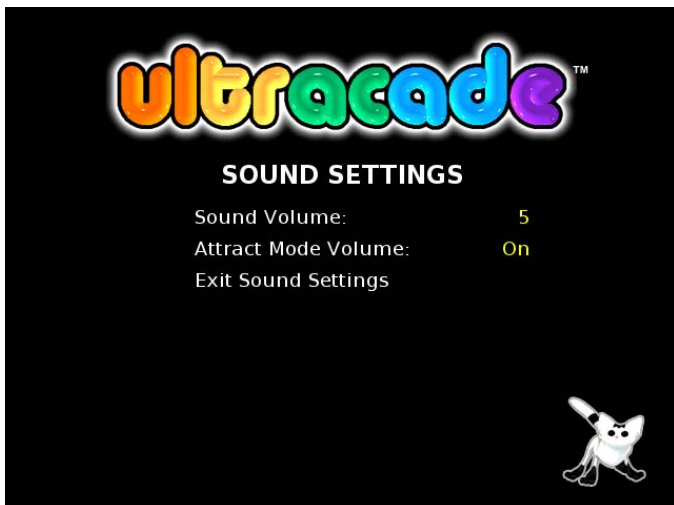


FIGURE 3-6 SOUND SETTINGS

SOUND VOLUME

This menu option allows you to set the Sound Volume level between one and ten. To adjust move the joystick to the left or right. Sound for the entire system can be turned off by setting the value to “0”.

ATTRACT MODE VOLUME

This option allows the operator to turn the Attract Mode Volume on or off. When set to “ON” all attract mode sounds will play. When set to “OFF” the fullscreen and windowed game attract mode sounds will not play. To change the values of this option highlight and move the joystick left or right.

Note: Some games naturally do not play any sound while in attract mode.

3.3.4 CREDIT/COIN SETTINGS

The credit/coin settings menu is used to set how much a play on your ULTRACADE costs, to turn on or off freeplay, to turn on or off the bonus credit and to turn on or off the free menu control.



FIGURE 3-7 CREDIT/COIN SETTINGS

CREDITS PER COIN MECH A AND B

This option allows the operator to set the number of credits given per coin drop on each coin mech. i.e. When set to 2, a player will receive two credits for one coin drop. Move the joystick left or right to set the values.

CREDIT COST FOR EACH PLAY

This option allows the operator to set the price to play a game. When set to 1, it will cost one credit for each play. When set to 2, it will cost 2 credits (fifty cents or two tokens) for each play. Move the joystick left or right to set the values.

BONUS CREDIT

This option will give a player a fifth free credit after four consecutive coin drops.

FREEPLAY

Sets the game to freeplay. This will make all the games free to play.

FREE MENU CONTROL

When this option is turned on players will be able to scroll through the main interface games without having to put a credit in. When turned off a player will have to put a credit in before scrolling through the main interface games.

3.3.5 TOURNAMENT SETTINGS

The tournament settings menu is used to set the location of that specific ULTRACADE machine and to access the high scores menu.



FIGURE 3-8 TOURNAMENT SETTINGS

3.3.5.1 LOCATION ENTRY

This option allows the operator to name individual cabinets for the purpose of accounting identification. When you are ready to identify your ULTRACADE cabinet, follow these instructions:

- Highlight “DEL” (delete) and select it to erase the factory naming.
- Highlight each desired letter in turn and select to spell the cabinet name.
- When completed highlight “USE” and select it to make the name change official.



FIGURE 3-9 LOCATION ENTRY SCREEN

3.3.5.2 HIGH SCORE MENU

This menu option allows you to dump all high scores to disk, get high scores from disk, and delete high scores.

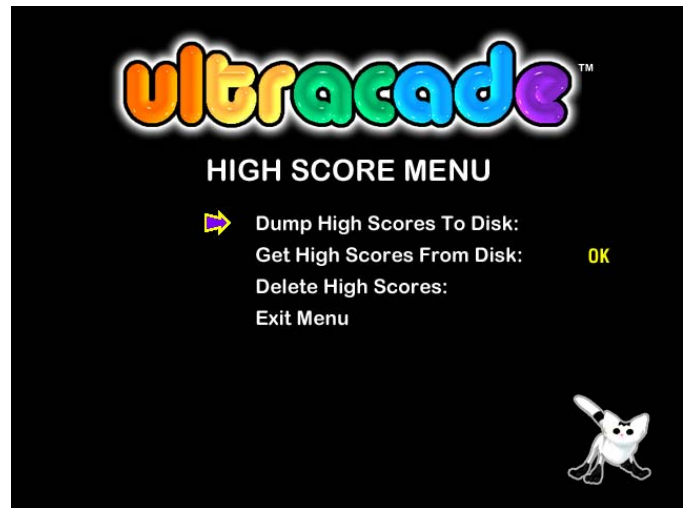


FIGURE 3-10 HIGH SCORE MENU

DUMP HIGH SCORES TO DISK

This option allows you to dump all high scores to a floppy disk. To dump scores; place a disk into the floppy drive and select this option. If this action is successful, “OK” will appear in the output window to the right. If this action is unsuccessful, “FAIL” will appear in this window.

GET HIGH SCORES FROM DISK

This option allows you to transfer high scores stored on a floppy disk to your ULTRACADE system. To get scores; place a disk into the floppy drive and select this option. If this action is successful, “OK” will appear in the output window to the right of the tab. If this action is unsuccessful, “FAIL” will appear in this window.

Note: Dumping and retrieving high scores from disk is only possible between two ULTRACADE games with matching versions.

DELETE HIGH SCORES

This option will reset all high scores to their factory defaults.

3.3.6 TIMERS SETTINGS

The timers settings menu allows you to set various timers in ULTRACADE.



FIGURE 3-11 TIMERS MENU

BOOT SCREEN DISPLAY TIME

When ULTRACADE powers on it displays a boot screen and gives a software version number. This timer sets the length this screen will display.

EXIT GAME AFTER NO INPUT

If a game is running and no joystick or button inputs are received the game will time out to the exit menu. This sets how long the game will run without receiving any input.

EXIT MENU DEFAULT POSITION

The exit menu default position setting effects the exit screen which comes up when a player is exiting a game. The setting can be set to “No” or “Yes” and the arrow on the exit menu will default to the corresponding setting.



FIGURE 3-12 EXIT MENU POSITION

3.3.7 FACTORY DEFAULTS

Selecting this option from the cabinet setup menu (Fig. 3-3) will reset all operator settings to their factory defaults. “OK” will appear in the Factory Defaults window when this action is completed.

3.4 GAME CONFIGURATION

The game configuration menu allows the operator to install new games, adjust individual games, and to set the Intelli Settings.

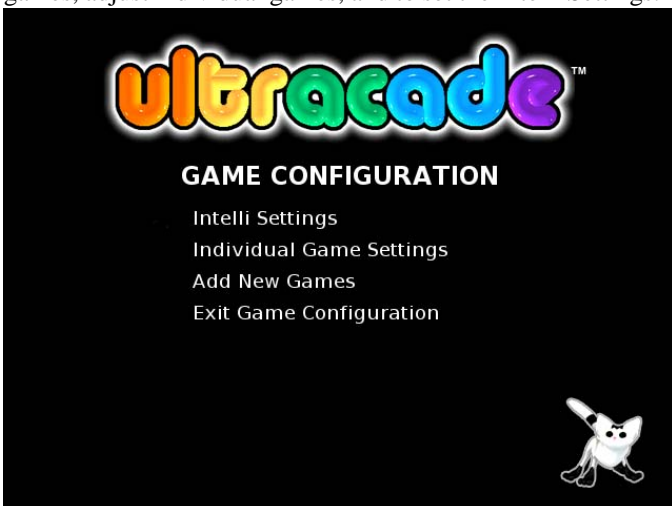


FIGURE 3-13 GAME CONFIGURATION

3.4.1 INTELLI SETTINGS

The Intelli Settings consist of Intelli-Earn, Intelli-Sort, and Intelli-Tune. These are special features only found in ULTRACADE and will help the operator get the most earnings from their ULTRACADE machine. In depth descriptions of each Intelli Setting can be found below in their specific section.



FIGURE 3-14 INTELLI SETTINGS

3.4.1.1 INTELLI-EARN™

The Intelli-Earn™ option when turned on will cause the main interface to play the attract mode for games with more current (\$Curr) or lifetime (\$Life) coindrop totals more frequently than those with less coindrop totals. When turned off the main interface will cycle through game attract modes randomly.

3.4.1.2 INTELLI-SORT™

The Intelli-Sort™ option is way for operators to automatically manage the number of games and which games will appear on the main front screen of an ULTRACADE machine.



FIGURE 3-15 INTELLI-SORT™ SETTINGS

When Intelli-Sort™ is turned on X number of games will appear on the front screen. After X number of days when the ULTRACADE machine boots up it will automatically replace X number of games which have earned the least amount of money and replace them with new games. The different option

which are settable for Intelli-Sort™ are as follows:

- **INTELLI-SORT STATUS:** Turns Intelli-Sort™ on and off.
- **MAX GAMES:** Set the amount of games which are displayed on the main front screen. The recommended default setting is twenty.
- **SWAP GAMES:** Sets the amount of games which will be swapped out after an update cycle has been completed. Only the lowest earning games will be swapped out. The recommended default setting is five.
- **UPDATE CYCLE (DAYS):** Sets how many days an ULTRACADE machine will run for, before it swaps out any games. The recommended default setting is seven days.

3.4.1.3 INTELLI-TUNE™

The Intelli-Tune™ option is a way for operators to automatically manage the difficulty of games installed on an ULTRACADE machine.



FIGURE 3-16 INTELLI-TUNE™ SETTINGS

When Intelli-Tune™ is turned on your ULTRACADE machine will check the average playtime per credit of any game installed on the machine which has had an X number of plays. If the average playtime falls below an X amount of time than ULTRACADE will automatically adjust the dipswitches for that game to make it slightly easier. If the average playtime goes above an X amount of time than ULTRACADE will automatically adjust the dipswitches for that game to make it slightly more difficult. If the average playtime falls between the two ranges than no action will be taken by ULTRACADE. The different settable options for Intelli-Tune™ are as follows:

- **INTELLI-TUNE STATUS:** Turns Intelli-Tune™ on and off.
- **MIN TIME/CREDIT:** This sets the minimum average playtime in minutes and seconds a game must be. If the average playtime falls below this value then the game will be made easier.
- **MAX TIME/CREDIT:** This sets the maximum average playtime in minutes and seconds a game must be. If the average playtime goes above this value then the game will be made more difficult.
- **UPDATE CYCLE (PLAYS):** This sets the number of times a game must be played before ULTRACADE will check to see if the dipswitches need adjusting.

3.4.2 INDIVIDUAL GAME SETTINGS

This menu allows you to choose which games you wish to display on the main interface selection screen, to set the dipswitch settings for each game, and to uninstall a particular game.

The game configuration menu consists of two parts. The left column contains the game list. On the right is the AAMA ratings system. Use the following system for navigating this setup menu:

Joystick (Player One):

- **Up/down** moves left column cursor up or down
- **Left/right** pages left column cursor up or down

Buttons (Player One):

- **Button 1** executes choice or disables/enables a game
- **Button 2** advances AAMA ratings cursor
- **Button 3** disables/enables all games with the currently selected AAMA rating
- **Button 6** enters dipswitch menu for highlighted game

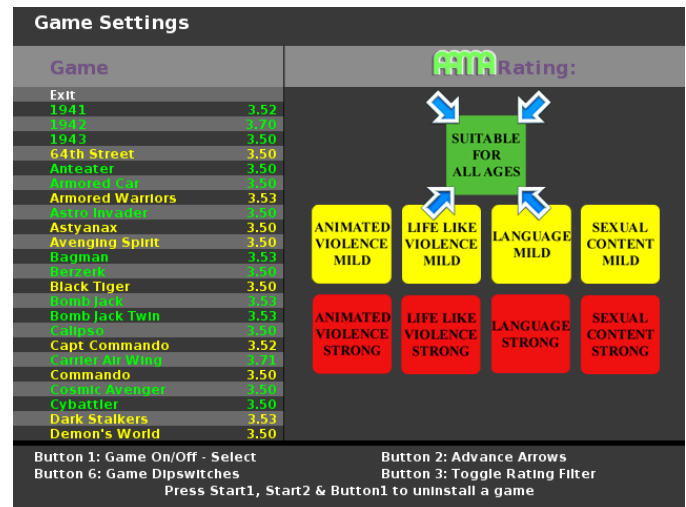


FIGURE 3-17 INDIVIDUAL GAME SETTINGS

THE GAME LIST

The ULTRACADE game list contains the game title on the left and the game version on the right. The list is also color coded by the AAMA rating. To check a game's exact AAMA rating highlight the chosen game and a Title Rating icon will appear on the right side over the correct sticker. To enable or disable a game simply highlight it with the cursor and press button one. A is disabled when it becomes greyed out and reads "OFF" instead of a version number.

AAMA RATINGS SYSTEM

The AAMA ratings system can be used to disable or enable a group of games with the same AAMA rating. Use button two to cycle the AAMA cursor until it is over the correct rating. Press button three to disable or enable all games installed on the ULTRACADE with that rating. A disabled icon will appear over the rating when it is currently disabled.

DIPSWITCH SETTINGS

Each installed game comes set to its original factory default dipswitch settings. To change a game's settings highlight it in

the left column and press button six. This will enter you into that game's unique dipswitch menu. To change a dipswitch setting highlight it and move the joystick either left or right to adjust the setting. To restore the settings to factory defaults highlight factory defaults and select the cursor and press button one.

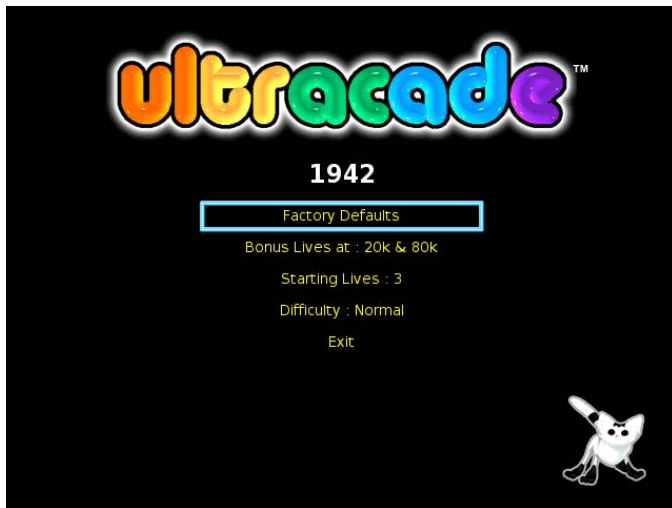


FIGURE 3-18 DIPSWITCH SETTINGS

UNINSTALLING A GAME

Uninstalling a game from the ULTRACADE system will remove it permanently. The only way to recover the game will be to reinstall the Game Pack on which the game came. To uninstall a game, highlight it in the left hand column and press and hold the player one and two start buttons. While holding the two buttons press player one button one and the game will be removed from the list. That game has now been uninstalled.

3.4.3 ADD NEW GAMES

The Add New Games Menu allows you to add new games to your ULTRACADE via Game Packs. When you are ready to install a new Game Pack, enter the Add Games Menu and follow these directions:

- Open the control panel and insert the new Game Pack CD
- Record the Machine ID number (MCID) in the center of the Add Game Menu.
- Call, fax, or email ULTRACADE technical support with your MCID and the CD serial number found on the back of the CD packaging. You will receive your Game Pack ID number (GPID). This number is unique to your ULTRACADE system and is essential to the successful installation of the Game Pack. **You may also now goto www.ultracade.com and generate unlock codes for your gamepacks online.**
- Record the GPID and save this with your Game Pack CD. If your Game Pack ever needs to be reinstalled you will need to enter this number again.
- Enter the GPID by highlighting the appropriate letters and numbers and selecting them. When completed highlight "Use" and select it. The Game Pack will now install.
- When the install is completed you may exit the Add Game Menu. the new games will now appear in your Game Configuration game list.
- Open the control panel and remove the CD.



FIGURE 3-19 ADD NEW GAMES SCREEN

3.5 ACCOUNTING INFORMATION

The Accounting Information Menu allows you to view and manipulate a report of current and lifetime coin totals for each game installed on your ULTRACADE:



FIGURE 3-20 ACCOUNTING INFORMATION

3.5.1 SORT REPORTS BY

The operator has different options to list the games on the earnings and time reports. Highlight Sort Report By and move the joystick left or right. The output window to the right will cycle through the following options:

- **name** - sort by name
- **mnfr** - sort by game manufacturer
- **\$curr** - sort by ascending current coin drop
- **\$life** - sort by ascending lifetime coin drop
- **fcurr** - sort by current ascending freeplays
- **flife** - sort by lifetime ascending freeplays

3.5.2 VIEW EARNINGS REPORT

When you choose View Earnings Report you will be given a screen consisting of five columns. The last reset date will be listed in the window at the top of the screen. The left hand column lists the games by name. The next two columns list

current coindrops and freeplays since the last reset of data respectively. The last two columns list lifetime coindrops and freeplays of each game respectively. The total earnings row (at bottom of report) lists the cumulative of each column.

The joystick can be used to scroll the window up or down if the game list is too long to display on the screen. Up and down will scroll one game at a time while left and right will scroll one page at a time. To enter a games' dipswitch settings press button 6 and to exit the earnings report screen press button one.

FIGURE 3-21 EARNINGS REPORT SCREEN

3.5.3 VIEW TIME REPORT

Like the earnings report, when you select this option you will be given a new screen consisting of five columns. The last reset data will be listed in the window at the top. The first column will list the games by name. The next two columns will give current time report data since the last reset. The one entitled "Average" displays the average amount of time it takes to play a game (one credit). This column displays in minutes and seconds. The column entitled "Total" displays the total amount of time that that game has been played in hours and minutes. The next two columns are reserved for the lifetime time reporting, one for the average time played and one for the total play time respectively.

The same control scheme is used in both the Earnings Report and Time Report screens. Refer to section 3.5.3 VIEW EARNINGS REPORT for instructions.

FIGURE 3-22 TIME REPORT SCREEN

3.5.4 RESET REPORT DATA

To reset current accounting data, coin bookkeeping table records, and current time reporting data; highlight Reset Report Data and select it. This will reset current game play counters and time reporting to zero (lifetime totals will remain). When this action has been successfully completed, "OK" will appear in the output window to the right.

3.5.5 COPY CURRENT / LIFETIME REPORT

This feature allows you to copy either the current or lifetime accounting information of each game to a disk. This allows you to track gameplay and coindrop totals on a daily, weekly or monthly basis. In addition, if you should uninstall a game and at a future date reinstall it, the game will maintain lifetime play totals in the accounting information. You will need a formatted 3.5inch floppy disk to utilize this function.

To copy accounting information to a disk, insert a formatted 3.5 inch floppy disk into the floppy drive on the computer rear panel. Highlight the desired copy option and select. If this action is successful, "OK" will appear in the corresponding output window to the right. If this action is unsuccessful, "FAIL" will appear in the output window. This indicates a bad disk or a drive failure. You can attempt to solve this problem by inserting a new disk.

When completed, all current or lifetime accounting information will be transferred to your disk. The accounting information text can be displayed in any text editor and easily imported into a spreadsheet application.

Note: Copying accounting information does not record the current day's totals, it records only previous days.

3.6 DIAGNOSTICS

The diagnostics option will enter you into a sub-menu displaying the different daignostics you can run on your ULTRACADE.



FIGURE 3-23 DIAGNOSTICS

3.6.1 CONTROL TEST

This test is used to check the functionality of the player controls. Operate each player control in turn. Each button press or joystick direction will light when activated. If any controls are not functioning, go to the trouble shooting section. To exit the con-

ontrol test press both player one and player two start buttons. If one or both start buttons are not working the control test screen will automatically timeout in fifteen seconds.



FIGURE 3-24 CONTROL TEST SCREEN

3.6.2 TRACKBALL & DIAL TEST

This test is used to check the functionality of any trackballs or dials which may be installed in the ULTRACADE machine. When any trackball or dial is moved an arrow should appear next to the corresponding control and point in the direction that the trackball or dial was moved. If your ULTRACADE is only configured for one trackball then when it is moved arrows will appear next to both trackballs on this screen. To exit the control test press both player one and player two start buttons.

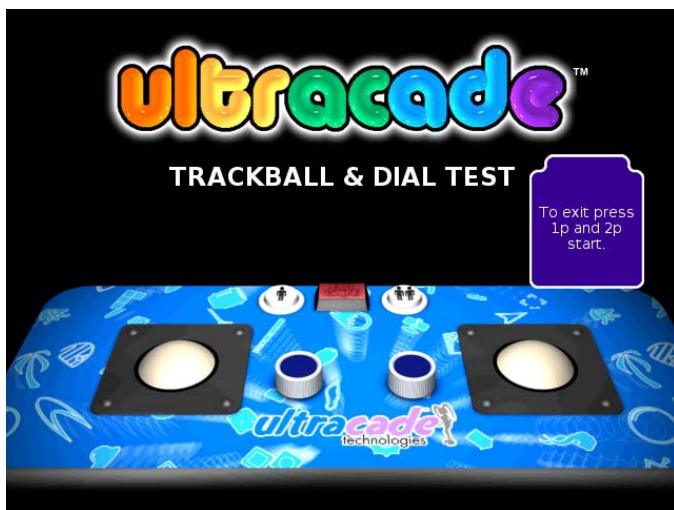


FIGURE 3-25 TRACKBALL & DIAL TEST

3.6.3 JAMMA TEST

The JAMMA Test is similar to the Control Test but it is expanded to encompass the entire JAMMA harness and connector. Operate each player control in turn through the JAMMA Test screen and check that it lights up on the screen. This process confirms the proper working order of the test button, coin drop, and wiring features. To exit the JAMMA Test press both player one and player two start buttons or wait fifteen seconds for the test to timeout and exit.



FIGURE 3-26 JAMMA TEST

3.6.4 SOUND TEST

This feature tests the stereo speakers. You will hear for each test the following:

- Left Channel: You will hear the voice coming from the left speaker.
- Right Channel: You will hear the voice coming from the right speaker.
- Stereo: You will hear the voice coming from both speakers.
- High Frequency: You will hear a high pitched sound coming from both speakers.
- Low Frequency: You will hear a low pitched sound coming from both speakers.



FIGURE 3-27 SOUND TEST

3.6.5 VIDEO TEST

This feature is a utility to use when making adjustments to the video monitor. When started, the test will cycle through the following screens:

- Red
- Green
- Blue
- Color Bars

- Pin Cushion

To advance through the test screens press button one.



FIGURE 3-26 VIDEO TEST

4. TROUBLESHOOTING

4.1 OS RE-INSTALLATION

The ULTRACADE Operating System comes pre-installed but if for any reason you need to reinstall your ULTRACADE operating system, follow these steps:

- Power ULTRACADE on.
- Open control panel and insert the system CD supplied with your ULTRACADE.
- Cycle the power (Turn off then on again).
- On reboot you will see the installation menu.
- Highlight Format and Install and select it. **Note: Do not select Upgrade Only** as this option is only for operators who wish to upgrade a previous version of ULTRACADE.
- When the install is complete open the control panel and remove the system CD.
- After the OS has been reinstalled no games will be loaded on the system. Please refer to section 3.4.3 ADD NEW GAMES for details on Game Pack installation.



FIGURE 4-1 INSTALLATION MENU

4.2 TECHNICAL SUPPORT

Free telephone, email and online support are provided for ULTRACADE Systems during the warranty period. In addition to helping with trouble shooting and diagnosing defective parts, technical support is prepared to help you with questions about the operation of ULTRACADE.

When you contact technical support at Ultracade Technologies, Inc. please provide the following background information to aid our technical support process:

- Your mailing address and telephone number
- A summary of the question or a description of the problem with your ULTRACADE

Technical Support is available from 9:00-5:00PST, Monday through Friday. Call 1-408-436-8885 to reach a technical support staff member. Email support is available if you email support@ultracade.com. Ultracade Technologies, Inc. has online technical support resources including FAQs at <http://www.ultracade.com>.

NOTES:

MACHINE ID: _____

BASE PACK KEY: _____

MIDWAY #1 KEY: _____

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