



GALACTIX



Service Manual

For Parts or Service contact

Betson Enterprises at 1(800) 828-2048

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Rev 1.1

1. Safety Notices

The following safety instructions apply to all game operators. We recommend that you read this page before setting-up GalacTix. Use the following safety guidelines to help protect the system from potential damage and to ensure your personal safety.

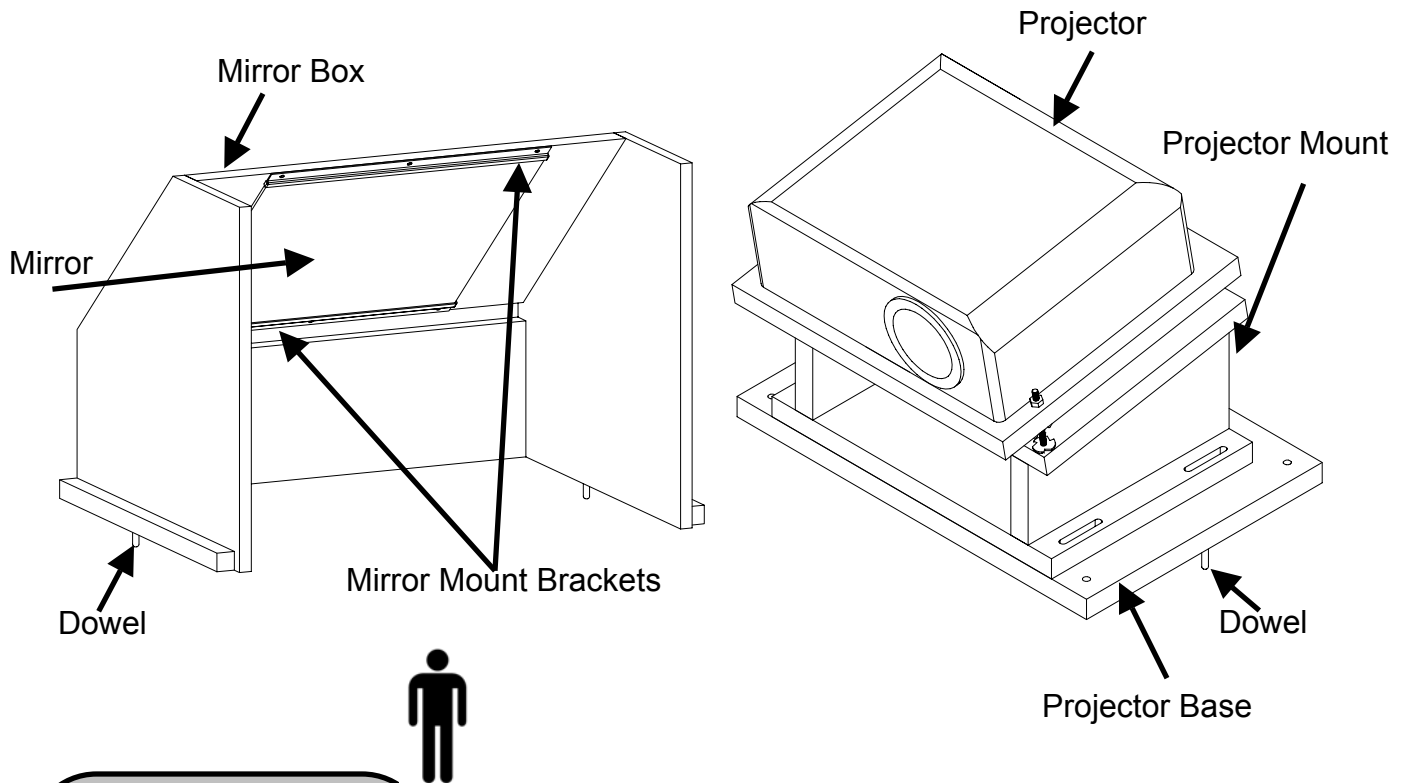
- Use with only 115 volts/60 Hz
- To help prevent electric shock, plug the system power cables into properly grounded power sources. These cables are equipped with 3-prong plugs to help ensure proper grounding.
Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.
- 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 game far away from radiators and heat sources.
- Do not block cooling vents.
- Before working on the machine be sure to unplug it.
- Be sure to use fuses that meet the specified rating. (5A, 250V Fast-blow) Using fuses exceeding the specified rating can cause a fire and electrical shock.

FCC Compliance

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

2. Connecting the Projector and Mirror Box

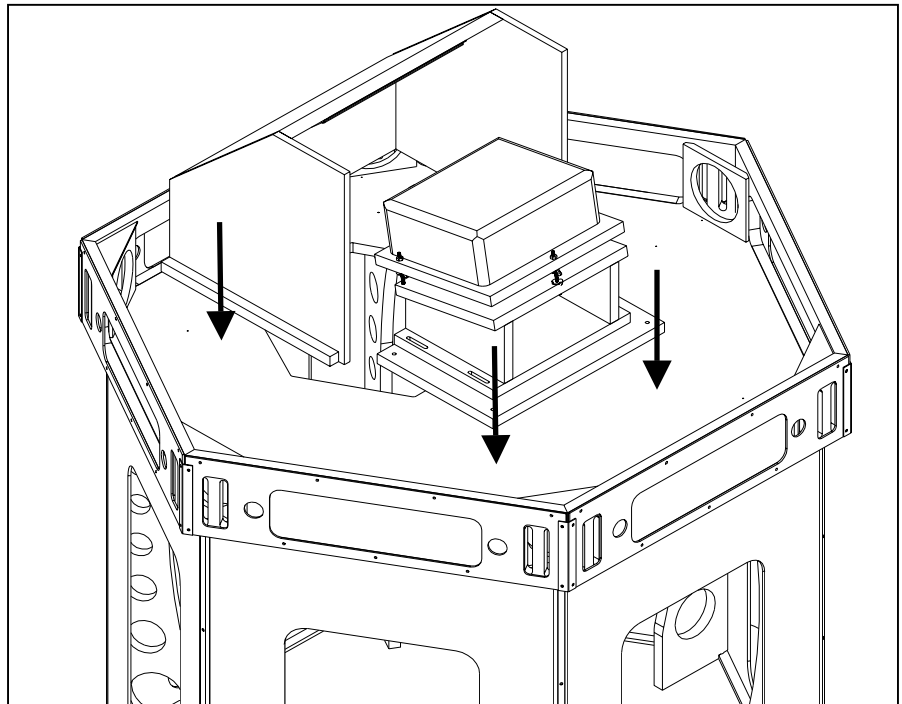
The projector and mirror box are both shipped under the Nose Cone. The Projector Mounting Board and Mirror Box have dowels so that they will align properly. **BE SURE TO ALIGN DOWELS WITH THE CORRESPONDING HOLES.**



REQUIRES 1 PERSON

Set the **Mirror Box** in position, with the **Mirror** over the projection cutout, making sure the dowels go in their holes. Secure it to the Top Projector Cabinet with four of the screws in the bag labeled **Projector and Mirror**.

Next, set the complete **Projector Mount Assembly** in position, with the lens aimed at the **Mirror**. When the dowels are in the holes, secure the assembly with four of the screws in the bag labeled **Projector and Mirror**.



The projector has been set up at the factory. Do not adjust position until you have turned the machine on.

3. Aligning the Projector

Turn GalacTix on and check whether the projector needs to be adjusted. The projector may also need to be adjusted after removing or servicing it. There is no definitive way to align the projector. Rather, you may have to make a couple adjustments, then go back and adjust it again.

With GalacTix on, enter the Service Menu, and then enter the Diagnostics Menu. Select *Video* and open the WHITE screen. This will project a pure white screen that is the exact size of the gameplay screen.

Use the projector menu to set the keystone to -10. To make the image fit perfectly on the screen, you may need to adjust the keystone to -8 through -11, but -10 is the GalacTix default setting and the best place to start.

Correcting keystone

Keystoning refers to the situation where the projected image is noticeably wider at either the top or bottom. It occurs when the projector is not perpendicular to the screen.

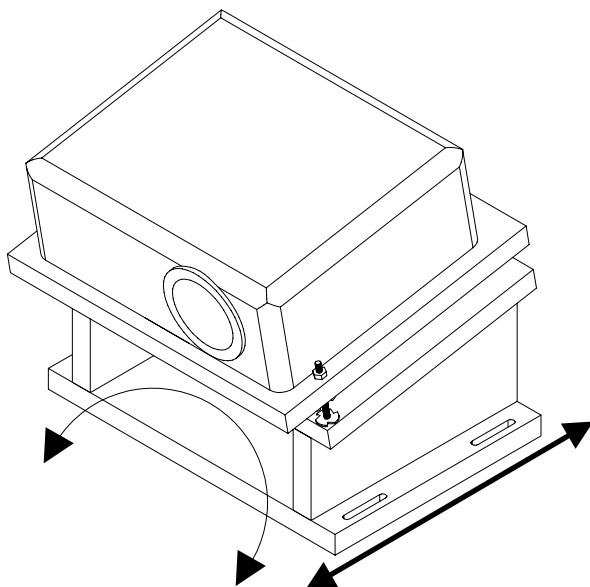
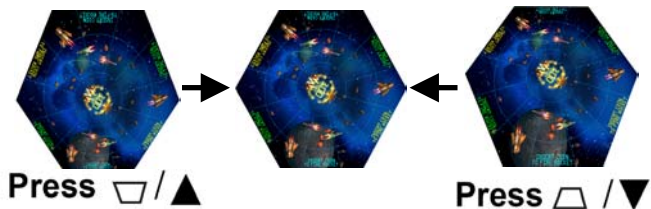
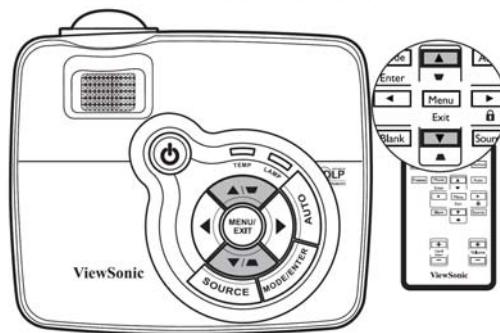
To correct this, besides adjusting the height of the projector, you will need to manually correct it following one of these steps.

- Using the remote control

Press ∇/\blacktriangle on the projector or remote control to display the Keystone correction page. Press ∇ to correct keystoning at the top of the image. Press \blacktriangle to correct keystoning at the bottom of the image.

- Using the OSD menu (On Screen Display)

- Press **MENU/EXIT** and then press $\blacktriangle/\blacktriangleleft$ until the **DISPLAY** menu is highlighted.
- Press \blacktriangledown to highlight **Keystone** and press **MODE/ENTER**. The **Keystone** correction page displays.
- Press ∇ to correct keystoning at the top of the image or press \blacktriangle to correct keystoning at the bottom of the image.



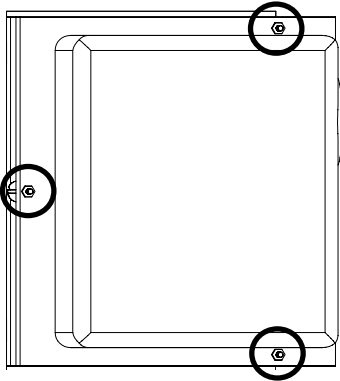
The projector base is mounted with slots so the entire unit can move forward or backward on the **Projector Mount Board**. There is also enough room to aim the projector right or left.

Slide projector BACK to increase the size of the projected image.

Slide projector FORWARD to shrink the size of the projected image.

Turn the base LEFT or **RIGHT** to center the projected image.

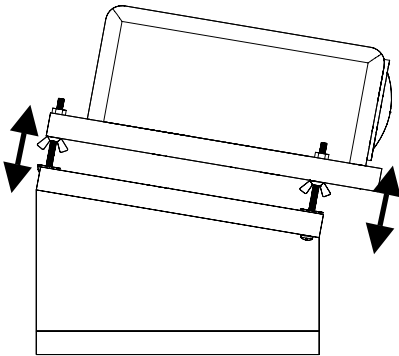
When in the correct position, tighten the 4 screws at the base.



The three bolts circled here are used to change the pitch and to level the projector.

Raising or lowering the nut in the rear will change the pitch of the projector, which will raise or lower the image on the screen

Adjusting the bolts on either side of the front will help level the projector, making the image square on the screen

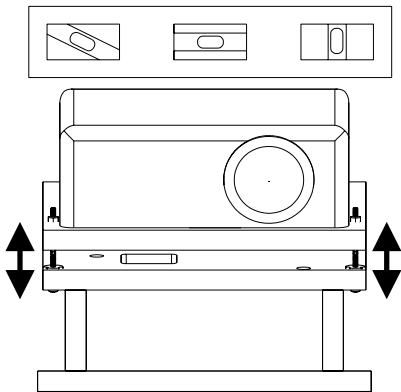


This side view shows how to adjust the pitch of the projector

Raising the 2 front nuts and the rear nut will raise the projector

Raising the 2 front nuts and lowering the rear nut will move the projected image up

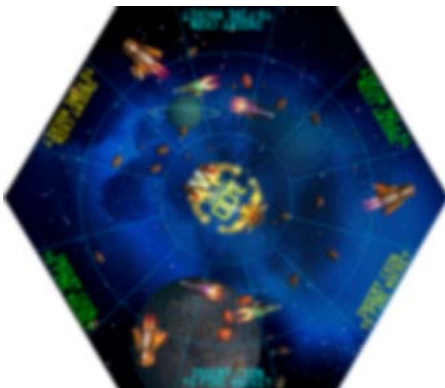
Lowering the 2 front nuts and raising the rear nut will move the projected image down



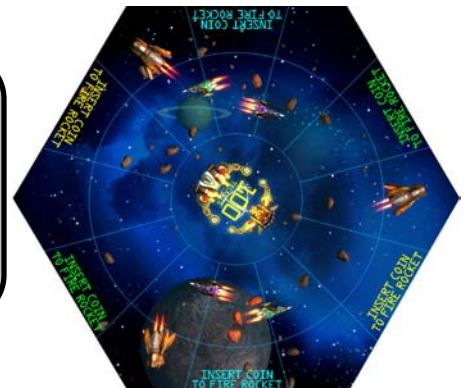
Adjust the 2 front nuts to change how level the projector is. This will ensure that the text on screen is straight.

When it is aligned, the projector itself will not necessarily be level. To align it correctly, the projector might be tilted left or right.

When the projector is correctly aligned, tighten the nuts on top, then the wing nuts below.



Manually focus the projector with the focus ring above the lens when it is in position. Adjust the focus so the center of the screen is the most clear.

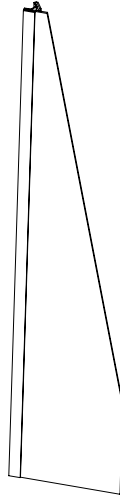
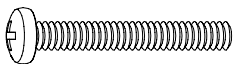
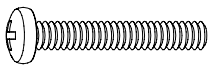
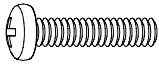
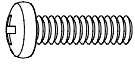


4. Connecting the Fins

To protect the fins from warping during shipment, two fins are not attached to the cabinet. Both fins connect to the **Door Hinges**.



2 x

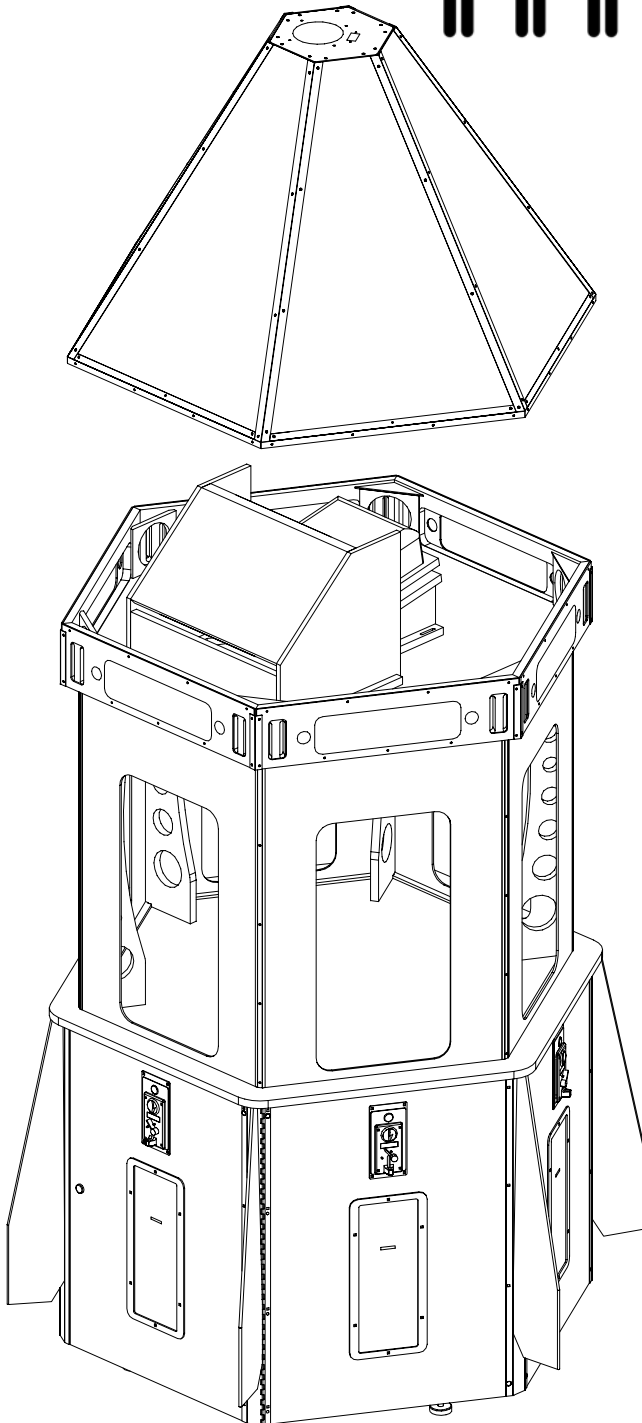


REQUIRES 1 PERSON

The two fin assemblies connect to the two **Door Hinges**. Locate the bag of fasteners labeled **Fins**. This bag includes (2) **6-32 x 1/2" Self-Tapping Screws**, (2) **6-32 x 5/8" Self-Tapping Screws**, (2) **6-32 x 7/8" Self-Tapping Screws**, and (2) **6-32 x 1" Self-Tapping Screws**.

Open one of the doors to the cabinet. Hold the **Fin Assembly** in place on the **Door Hinge**. Use a **6-32 x 1/2" Self-Tapping Screw** to attach it through the top hole of the fin bracket. Use the 5/8" screw through the second hole, the 7/8" through the third, and the 1" screw in the bottom hole. Repeat this on the other **Door Hinge** to connect the other **Fin Assembly**.

5. Connecting the Nosecone



REQUIRES 2-3 PEOPLE

Locate the bag of fasteners labeled **Nose Cone**, which contains **(24) #6 x 5/8" Black Screws**.

Find the cable harness hanging over the top edge of GalacTix. This will connect to the **Chase Top** cable harness in the **Nose Cone**.

With the help of another adult, lift the **Nose Cone** to the top of the main cabinet. Be very careful to not hit the **Projector** or **Mirror Box**.

Set the **Nose Cone** on top of the cabinet so that it is still easy to lift.

Connect the **Chase Top Cable** inside the **Nose Cone** to the corresponding cable on top of the **Main Cabinet**.

Turn the game on. Check that all **LED PCBs** in the **Nose Cone** are lighting up and the fan in the top is running.

Push the **Chase Top Cable** inside the **Nose Cone**. Adjust the **Nose Cone** so that it slides onto the **Main Cabinet**, making sure not to pinch the **Chase Top Cable**.

With **GalacTix** turned on, walk around the cabinet and check that there are no shadows on any of the marquees. If there is a shadow, lift the **Nose Cone** on that side and adjust what is causing it (cables, packing material, etcetera).

Use the **(24) #6 x 5/8" Black Screws** to secure the **Nose Cone** to the **Main Cabinet**.

6. Service Door and Operator Door

GalacTix has two doors on opposite sides, and each has its own purpose.

The **Operator Door** opens to the **Cash Box**, **Service Panel**, **Projector PCB**, and the backside of the **Power Switch**.

See **page 9** for information on the **Projector PCB**.

The **Service Panel** is used to access the Menus and holds the **Coin** and **Ticket Meters**. See **page 13** for **Service Panel** layout and menu information.

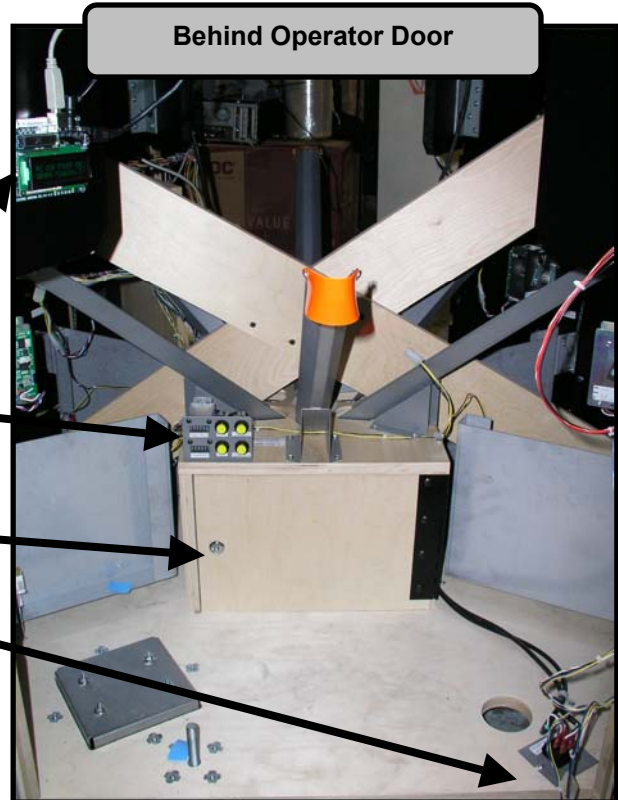
See **page 48** for a complete wiring diagram

Projector PCB

Service Panel

Cash Box

Power Switch



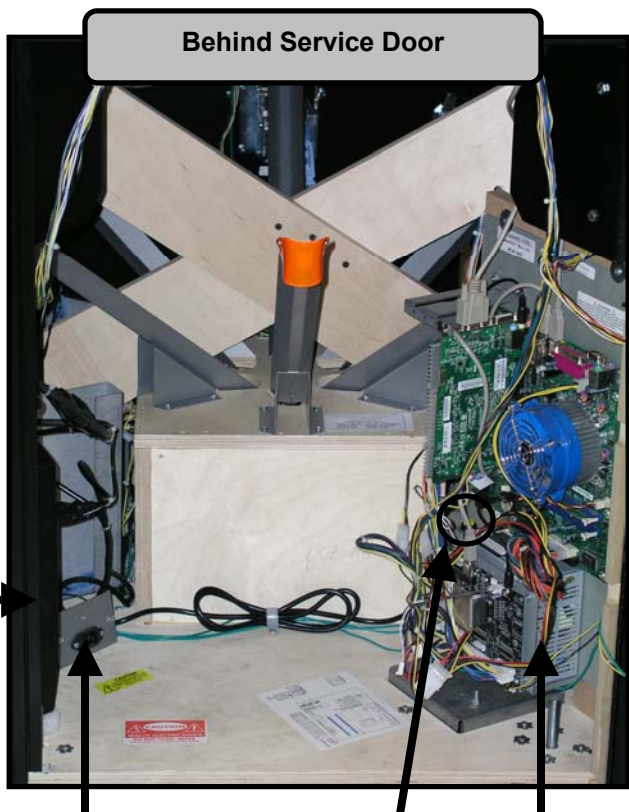
The **Service Door** is used to access the **Computer Shelf**, **Uninterruptible Power Supply (UPS)**, and **Power Inlet Plate**.

The **Service Door** is marked with a red high voltage warning label below the ticket door.

The **UPS** is on the left side behind the **Service Door**. See **page 9** for more information on the **UPS**.

The **Computer Shelf** is mounted on the right side behind the **Service Door**. There is a yellow power button (circled in the image) below the video card that is used to turn on the computer if the BIOS battery needs to be replaced.

UPS



Power Inlet Plate

PC Power Button

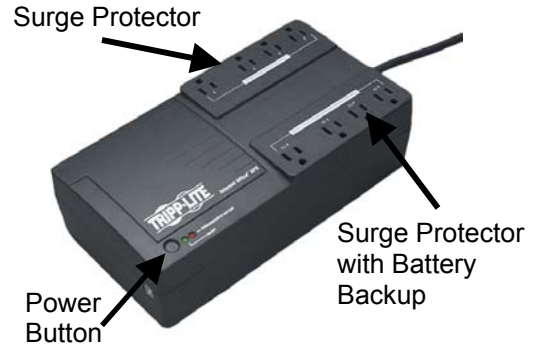
Computer Shelf

7. Uninterruptible Power Supply (UPS) and Projector PCB

The **Battery Backup** side of the **UPS** powers the **Projector** and **Projector PCB** to elongate the life of the projector lamp. When the game is shut off, the **UPS** keeps power to the **Projector** and **Projector PCB** so the lamp has time to cool off. When the **Projector PCB** recognizes that the computer has shut down, it will tell the **Projector** to enter cool down mode, then shut off. The **Projector PCB** will remain on after power has been removed from the game, until the charge in the **UPS** runs down. When power is restored, the **Projector PCB** will recognize the computer and turn the **Projector** back on.

The **Computer Shelf** also plugs into the **UPS**, but it plugs into the **Surge Protector** side. This turns the computer off as soon as the power switch is hit or power is lost.

NOTE: To turn the UPS On or Off, hold the Power Button for one second, until it beeps one time. If the UPS battery runs out, it will automatically turn back on and start charging when power is restored.



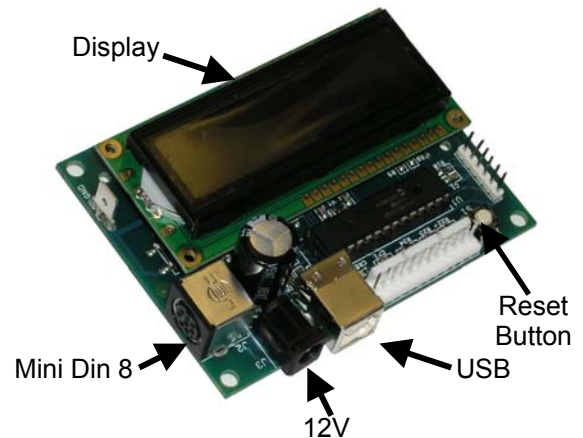
Projector PCB

The projector PCB is located behind the Operator Door, which accesses the cash box. It is used to turn the projector on or off, and when the projector turns on, the PCB will automatically adjust the brightness, contrast and horizontal flip of the projector.

The board runs on 12V, supplied by the AC Adapter.

The board communicates with the projector through the RS232 port.

The board recognizes when the computer is on through USB.



Status Lights

Just below the LCD Display on the Projector PCB is a row of six status LEDs.

HB – The PCB is on and working correctly.

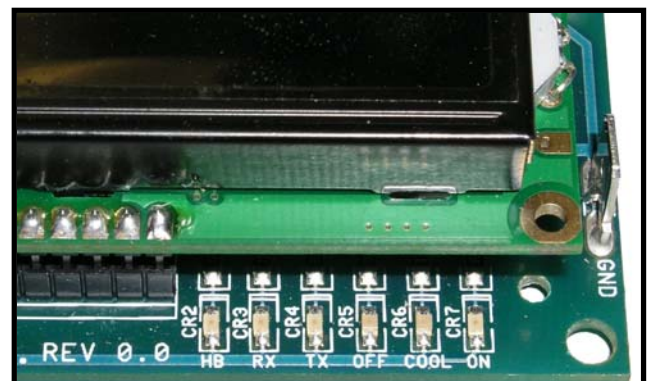
RX – The PCB is receiving signals from the projector.

TX – The PCB is transmitting to the projector.

OFF – The projector is currently off.

COOL – The projector is in cool down mode. The lamp will cool before coming back on.

ON – The projector is currently on.



LCD Display

The display will also show the status of the projector and USB power. It will display whether the computer or the projector is on or off. It will display how much time is left until the PCB will try turning the projector back on during cool down. The display will also show whether there are any projector errors, such as an abnormal shutdown.

To initialize the Projector Setup function of the Projector PCB and display any errors that have occurred, push the Reset Button (shown above). This will reset all settings that the Projector PCB controls, as well as display any accumulated errors.

8. Servicing Lights in Nose Cone

Remove the screws that hold the **Nose Cone** to the **Cabinet**

With the help of another person, lift the **Nose Cone** up without removing it. Disconnect the **Chase Top Cable** to free the **Nose Cone**.

Remove the **Nose Cone** and set it on the floor, protecting it from damage. Be very careful not to hit the **Projector** or **Mirror Box** when removing the **Nose Cone**.

If one of the **LED Boards** was not working, check that the cables connected to the boards in the **Nose Cone** have not become disconnected.

If replacing a **CCFL Tube**, remove the white lamp guard to access the bad bulb.

9. Extending Lamp Life: Economy Mode

The lamp in the projector will normally last from 3,000 to 4,000 hours. To extend the life of the lamp, you can change the projector to Economy Mode.

Economy Mode reduces the projector's power consumption by 20% and increases the life of the bulb by 1/3. This will make the projected image darker, which might make the game's screen harder to see in areas with bright ambient light.

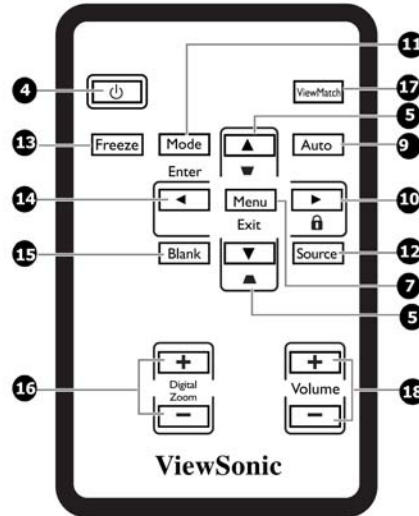
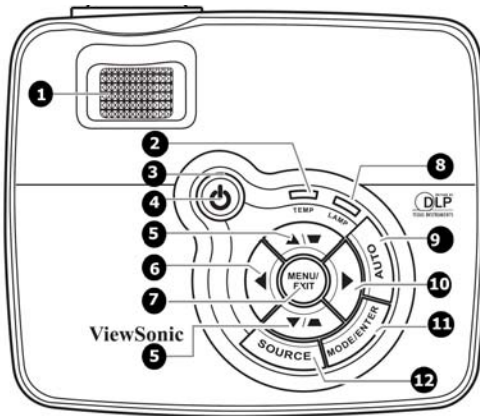
To set the projector to Economy Mode, use either the remote or the buttons on the projector to enter the projector's menu. Go to System Setup: Advanced. Select Lamp Settings, then Lamp Mode. Use Left or Right to turn Economy Mode on or off. Press Menu again to exit.

See **pages 20-21** for more information on Economy Mode and when to change the lamp.



10. Controls and functions

Projector and remote control



1. Focus ring

Adjusts the focus of the projected image.

2. TEMPERATURE indicator light

Lights up red if the projector's temperature becomes too high. See "Indicators" on page 25 for details.

3. POWER indicator light

Lights up or flashes when the projector is under operation. See "Indicators" on page 25 for details.

4. POWER

Toggles the projector between standby mode and on.

5. Keystone/Arrow keys (□ / ▲ Up, ▢ / ▼ Down)

Manually corrects distorted images resulting from an angled projection. See "Correcting keystone" on page 5 for details.

6. Left/BLANK

Hides the screen picture.

7. MENU/EXIT

Turns on the On-Screen Display (OSD) menu. Goes back to previous OSD menu, exits and saves menu settings.

8. LAMP indicator light

Indicates the status of the lamp. Lights up or flashes when the lamp has developed a problem. See "Indicators" on page 25 for details.

9. AUTO

Automatically determines the best picture timings for the displayed image.

10. Right/🔒

Activates panel key lock. When the On-Screen Display (OSD) menu is activated, the #5, #6, and #10 keys are used as directional arrows to select the desired menu items and to make adjustments.

11. MODE/ENTER

Selects an available picture setup mode, or enacts the selected On-Screen Display (OSD) menu item.

12. SOURCE

Displays the source selection bar.

13. FREEZE

Freezes the projected image.

14. Left

Selects the desired menu items and makes adjustments.

15. BLANK

Hides the screen picture.

16. Digital Zoom keys (+, -)

Magnifies or reduces the projected picture size.

17. ViewMatch

Switch in between high brightness performance or Accuracy color performance.

18. Volume keys (+, -)

Magnifies or reduces the volume level. (GalacTix does not utilize the projector's speaker)

11. Adjusting Ticket Payout Percentage

GalacTix is a skill-based game, and payout percentage will change depending on the demographic of your customers. With the default game settings, which can be found on **page 15**, GalacTix pays out 8-9 tickets per coin. On average, changing the **Difficulty** without changing the default ticket values will adjust the ticket payout as follows:

Hard: 4-5 Tickets

Medium Hard: 6-7 Tickets

Medium: 8-9 Tickets

Medium Easy: 10-11 Tickets

Easy: 12-13 Tickets

If the payout is still different from the desired payout, you can adjust a number of settings in the **Game Settings** menu.

-Change Mothership to **Easy** to open the space between the two ships, making it easier to hit the Bonus. This will increase the ticket payout. Change Mothership to **Hard** to close the space, which will make it more difficult and lower the ticket payout.

-If you are using **Fire Buttons**, you can adjust the number of missiles a player gets per credit. Increase the number of missiles to raise the ticket payout. Decrease the number of missiles to lower the ticket payout. This will cause a large change in the ticket payout.

-You are also able to change the number of tickets awarded for hitting every type of ship and the Mothership Bonus. Lower the number of tickets awarded to lower ticket payout, or raise the number of tickets awarded to raise the ticket payout.

Tickets for Inner Guard: 0-30

Tickets for Outer Guard: 0-30

Tickets for Squadron: 0-30

Tickets for Explosion: 0-30

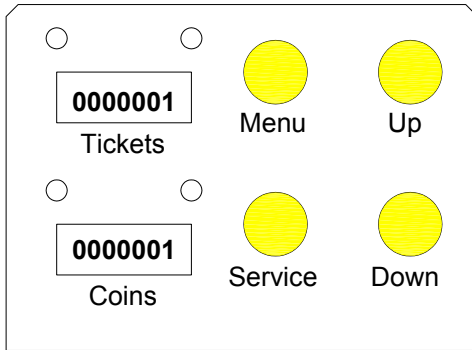
Tickets for Mothership Miss: 0-10

Tickets for Prize Miss: 0-30

Tickets for Prize: 0-200

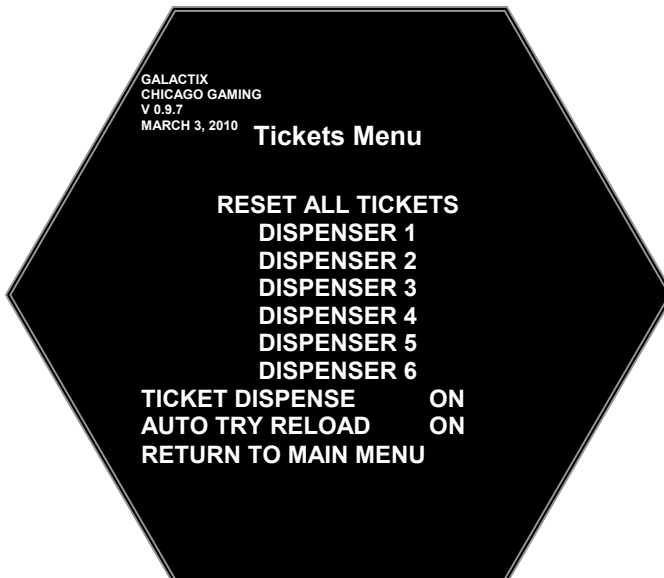
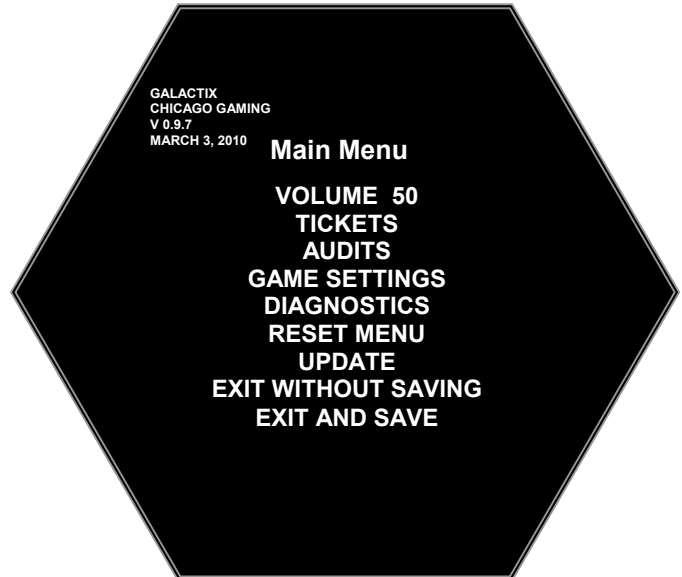
12. Main Menu

The Service Panel is located behind the **Operator Door**, on top of the cash box. Press **Menu** to enter the service menu and to make selections. Use **Up** and **Down** to navigate the menus and change selected settings.



Volume – Set Volume from 0-100

Tickets

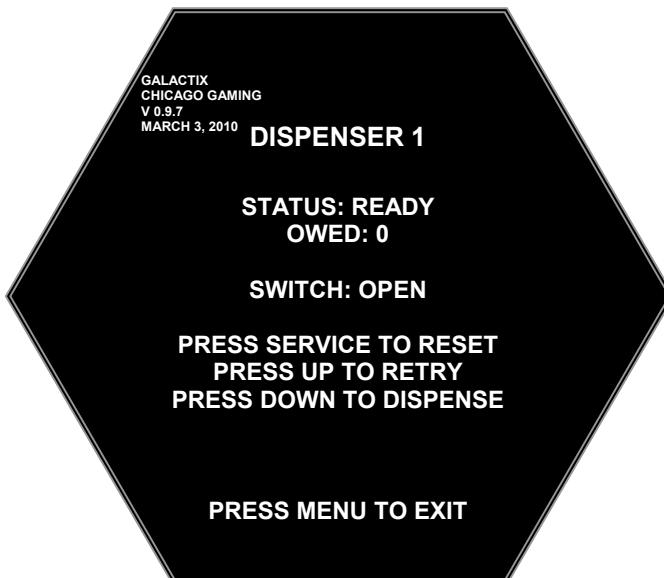


Ticket Dispense – On / Off

Turn this On to have the game dispense tickets. Turn this Off and the game will not dispense tickets.

Auto Try Reload – On / Off

When this is On, GalacTix will recognize when loading new tickets. The game will wait a couple of seconds, and then it will start feeding the new tickets through to pay out tickets owed. If it is Off, it will not recognize new tickets. GalacTix will only pay out owed tickets when the player at that position wins more tickets.

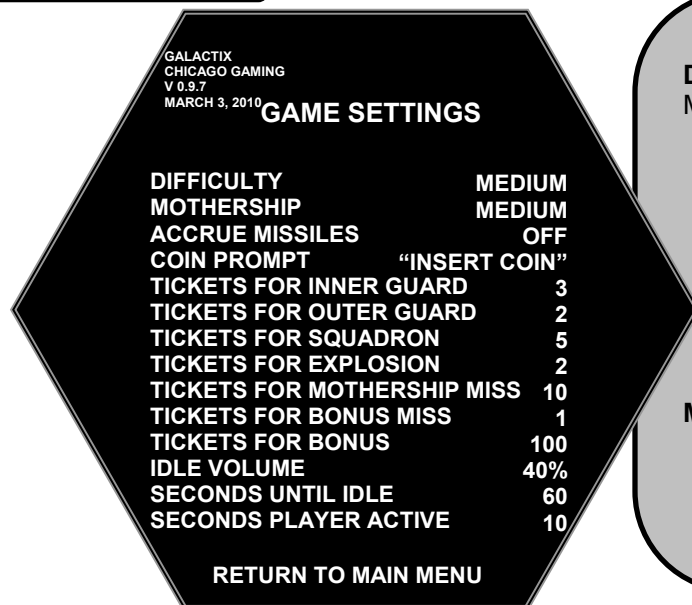


Audits

GALACTIX CHICAGO GAMING V 0.9.7 MARCH 3, 2010			AUDITS	
	CURRENT	LIFETIME		
TOTAL COINS	0	0		
TOTAL TICKETS	0	0		
TICKETS PER COIN	0	0		
COIN CHUTE 1	0	0		
COIN CHUTE 2	0	0		
COIN CHUTE 3	0	0		
COIN CHUTE 4	0	0		
COIN CHUTE 5	0	0		
COIN CHUTE 6	0	0		
TICKETS 1	0	0		
TICKETS 2	0	0		
TICKETS 3	0	0		
TICKETS 4	0	0		
TICKETS 5	0	0		
TICKETS 6	0	0		
GUARD INNER	0	0		
GUARD OUTER	0	0		
SQUADRON	0	0		
MOTHERSHIP MISS	0	0		
PRIZE MISS	0	0		
EXPLOSION	0	0		
MOTHERSHIP	0	0		
TIME ON	0Y 0D 00:00:00	0Y 0D 00:00:00		
PLAY TIME	0Y 0D 00:00:00	0Y 0D 00:00:00		
PRESS DOWN TO CLEAR CURRENT AUDITS				
PRESS MENU TO EXIT				

The Audits Screen shows Total Coins, Total Tickets and Tickets Per Coin to calculate the payout percentage. This screen also shows the number of coins entered into each mechanism, number of tickets won from each mechanism, and the number of times each ship type has been hit.

Game Settings



Difficulty – Easy / Medium Easy / Medium / Medium Hard / Hard

The difficulty level determines how quickly ships respawn and how fast the ships move. Easier difficulties have a longer spawn time for a ship after it has been destroyed, and the ships move slowly. Higher difficulties keep the ships spawning more quickly and spinning faster.

Mothership – Easy / Medium / Hard

This setting changes how large the opening to the Bonus is. Easy gives more room, while Hard closes the gap.

Accrue Missiles – Off / 1-5

This is used to set how many missiles a player receives per credit, which can only be used when the cabinet has the optional Fire buttons installed. If the game does not have fire buttons, Accrue Missiles must be set to Off.

Coin Prompt – “Insert Coin” / “Swipe Card” / “Insert Key”

This changes the player prompt. Change the Coin Prompt to match the input method that is installed on the game.

Tickets for Inner Guard – 0-30

These are the common ships circling closest to center

Tickets for Outer Guard – 0-30

These are the common ships circling outside of others

Tickets for Squadron – 0-30

These less common ships appear on screen, circle the mothership, then leave

Tickets for Explosion – 0-30

This is when a missile is destroyed by hitting a chained explosion

Tickets for Mothership Miss – 0-10

This is when a missile hits the empty center after somebody else gets the Bonus

Tickets for Bonus Miss – 0-30

This is when a missile hits the side of the mothership

Tickets for Bonus – 0-200

This is when a missile hits the Bonus number in the center of the mothership

Idle Volume – 20%-100%

Set the volume when the game goes idle as a percentage of main volume

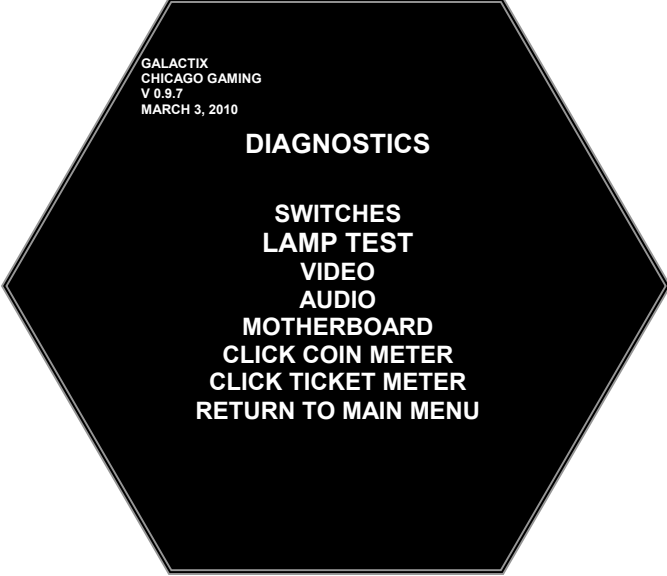
Seconds Until Idle – 60-300

Set the time it takes the game to go idle

Seconds Player Active – 1-60

When more than one person is playing, GalacTix automatically decreases the ships' respawn time to keep the difficulty the same for each player. This setting adjusts how long each player counts as active.

Diagnostics



Switches – Select this option to test the functionality of the switches.

Video – Select this option to test that the monitor is working properly.

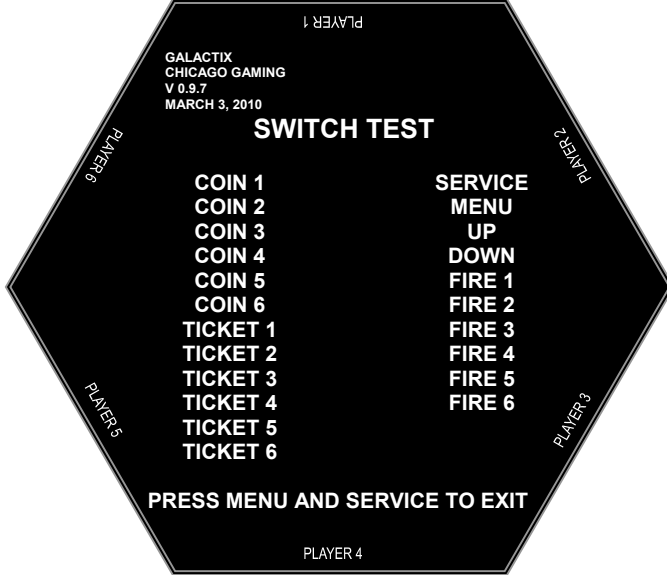
Audio – Select this option to test that the speakers are working correctly.

Motherboard – This gives information about the hardware in the computer as well as software version numbers

Click Coin Meter – This sends a pulse to the Coin Meter. Use this to quickly test that the Coin Meter is working.

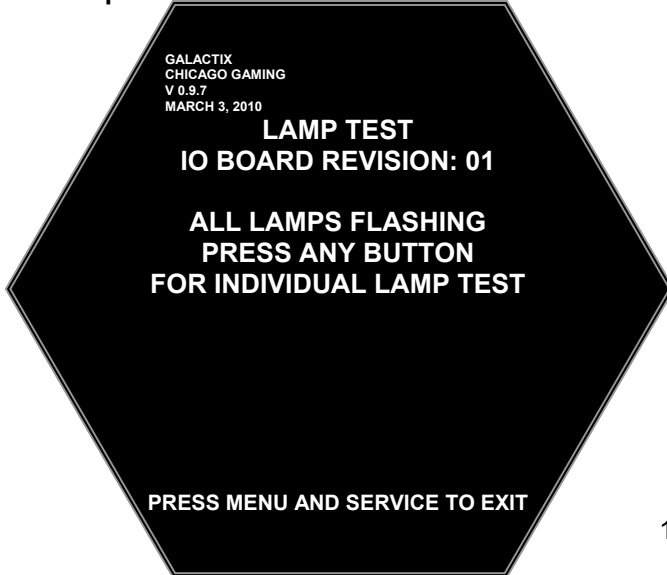
Click Ticket Meter - This sends a pulse to the Ticket Meter. Use this to quickly test that the Ticket Meter is working.

Switch Test



Switches – Activating a switch will cause its name to light up on the screen. The Coin switches are activated when the comparator recognizes a coin. If a coin mech is always on, check that the switch on the back is set to N.O. The Ticket switches are active when the ticket mechanism sees a notch in the tickets.

Lamp Test

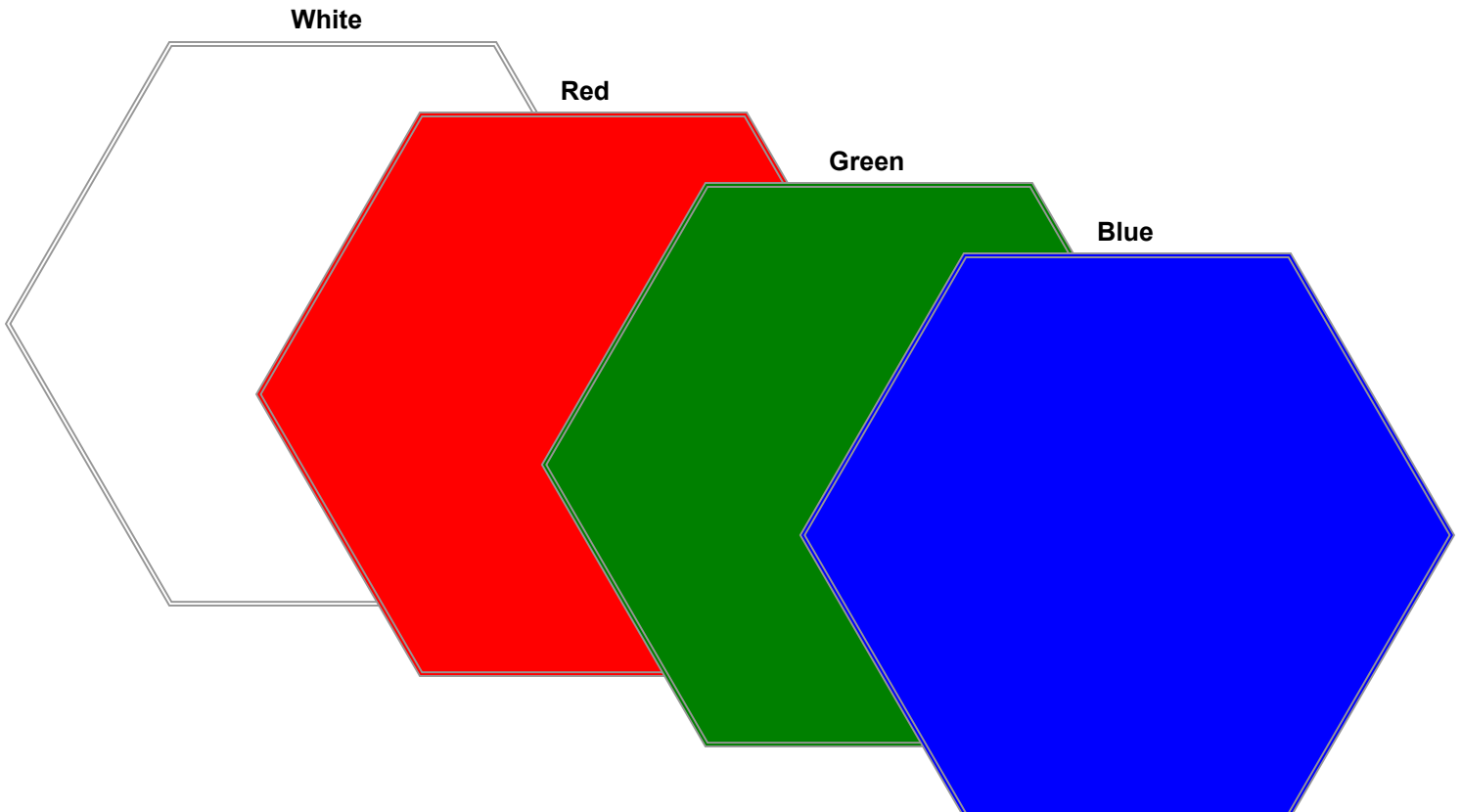
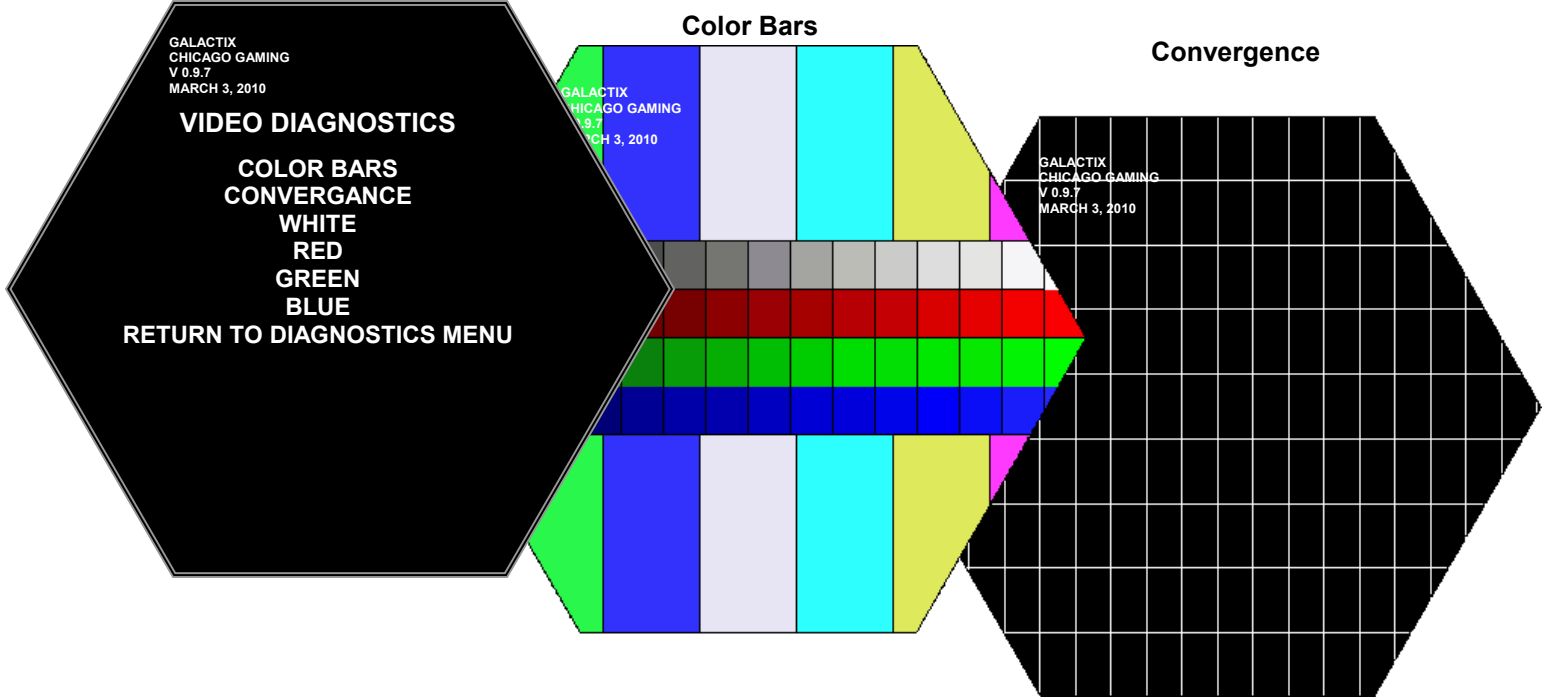


Lamp Test – Use the Lamp Test to check the lights in the fire buttons and make sure the Chase Lights in the Marquee and Nose Cone are working properly

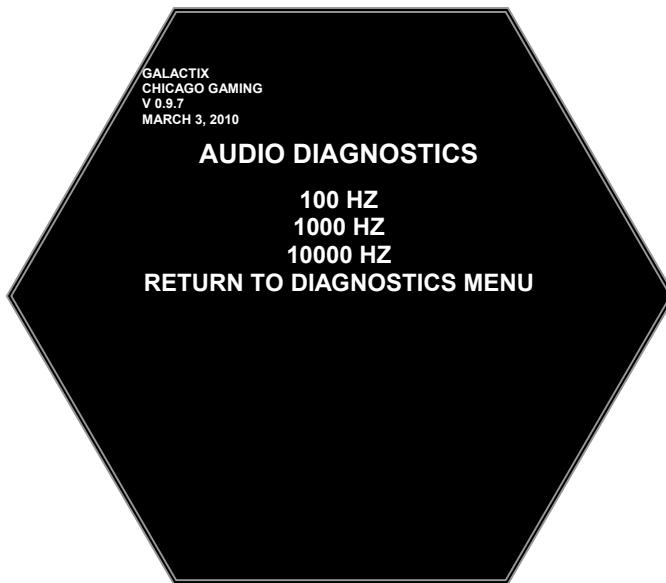


Video Diagnostics

Use Up and Down to navigate the menu and press enter to select a test screen. Press enter again to return to Video Diagnostics Menu.



Audio Diagnostics



100 HZ – This tests the speakers at 100HZ

1000 HZ – This tests the speakers at 1000HZ

10000 HZ – This tests the speakers at 10000HZ

Motherboard



This screen gives information about the computer in the game. This includes which Motherboard, the BIOS version, the I/O board version, etc.

Reset

GALACTIX
CHICAGO GAMING
V 0.9.7
MARCH 3, 2010

RESET MENU

**RESET CURRENT AUDITS
RESET ADJUSTMENTS
RESET ALL TICKETS
FACTORY RESET ALL
RETURN TO MAIN MENU**

Reset Audits - Prompts to confirm reset audits

Reset Adjustments – Prompts to confirm reset adjustments

Reset All Tickets – Does not prompt to confirm reset tickets

Factory Reset All – Prompts to confirm factory reset all

GALACTIX
CHICAGO GAMING
V 0.9.7
MARCH 3, 2010

RESET CURRENT AUDITS

**THIS ACTION CANNOT BE UNDONE
ARE YOU SURE?**

**PRESS MENU TO CONFIRM
PRESS SERVICE TO CANCEL**

GALACTIX
CHICAGO GAMING
V 0.9.7
MARCH 3, 2010

RESET ADJUSTMENTS

**THIS ACTION CANNOT BE UNDONE
ARE YOU SURE?**

**PRESS MENU TO CONFIRM
PRESS SERVICE TO CANCEL**

GALACTIX
CHICAGO GAMING
V 0.9.7
MARCH 3, 2010

FACTORY RESET ALL

**THIS ACTION CANNOT BE UNDONE
ARE YOU SURE?**

**PRESS MENU TO CONFIRM
PRESS SERVICE TO CANCEL**

Update

PUTT
CHICAGO GAMING
V 0.9.7
MARCH 3, 2010

SYSTEM UPDATE

WARNING: THIS WILL OVERWRITE FLASH MODULE

PLEASE CONNECT THUMB DRIVE WITH UPDATE AND PRESS MENU

**PRESS MENU TO START UPDATE PROCESS
PRESS SERVICE TO EXIT**

The software on GalacTix can be updated through a USB drive. Connect the drive with the update on it, enter the System Update Menu and press the Menu button. You can cancel by pressing Service. When the update is complete, turn the power off, remove the USB drive and turn the power back on.

13. Projector Maintenance

The following pages are taken from the Viewsonic PJD5351 DLP Projector User Guide and may reference some pages that are not included or numbered differently.

Maintenance

Care of the projector

Your projector needs little maintenance. The only thing you need to do on a regular basis is to keep the lens clean.

Never remove any parts of the projector except the lamp. Contact your dealer if other parts need replacing.

Cleaning the lens

Clean the lens whenever you notice dirt or dust on the surface.

- Use a canister of compressed air to remove dust.
- If there is dirt or smears, use lens-cleaning paper or moisten a soft cloth with lens cleaner and gently wipe the lens surface.

 **CAUTION**

Never rub the lens with abrasive materials.

Cleaning the projector case

Before you clean the case, turn the projector off using the proper shutdown procedure as described in "[Shutting down the projector](#)" on [page 33](#) and unplug the power cord.

- To remove dirt or dust, wipe the case with a soft, lint-free cloth.
- To remove stubborn dirt or stains, moisten a soft cloth with water and a neutral pH detergent. Then wipe the case.

 **CAUTION**

Never use wax, alcohol, benzene, thinner or other chemical detergents. These can damage the case.

Storing the projector

If you need to store the projector for an extended time, please follow the instructions below:

- Make sure the temperature and humidity of the storage area are within the recommended range for the projector. Please refer to "[Specifications](#)" on [page 48](#) or consult your dealer about the range.
- Retract the adjuster feet.
- Remove the battery from the remote control.
- Pack the projector in its original packing or equivalent.

Transporting the projector

It is recommended that you ship the projector with its original packing or equivalent.

Lamp information

Getting to know the lamp hour

When the projector is in operation, the duration (in hours) of lamp usage is automatically calculated by the built-in timer. The method of calculating the equivalent lamp hour is as follows:

Total (equivalent) lamp hour
= 1 (hours used in **Economic** mode) + 4/3 (hours used in **Normal** mode)

 See "**Setting Lamp mode as Economic**" below for more information on **Economic** mode.

The lamp hour in **Economic** mode is calculated as 3/4 of that in **Normal** mode. That is, using the projector in **Economic** mode helps to extend the lamp hour by 1/3.

To obtain the lamp hour information:

1. Press **MENU/EXIT** and then press **◀/▶** until the **SYSTEM SETUP: Advanced** menu is highlighted.
2. Press **▼** to highlight **Lamp Settings** and press **MODE/ENTER**. The **Lamp Settings** page displays.
3. You will see the **Equivalent lamp hour** information displaying on the menu.
4. To leave the menu, press **MENU/EXIT**.

You can also get the lamp hour information on the **INFORMATION** menu.

Extending lamp life

The projection lamp is a consumable item that normally can last up to 3000-4000 hours with proper usage. To keep the lamp life as long as possible, you can do the following settings via the OSD menu.

Setting Lamp mode as Economic

Using **Economic** mode reduces system noise and power consumption by 20%. If the **Economic** mode is selected, the light output will be reduced and result in darker projected pictures.

Setting the projector in **Economic** mode also extends the lamp operation life. To set **Economic** mode, go into the **SYSTEM SETUP: Advanced > Lamp Settings > Lamp mode** menu and press **◀/▶**.

Setting Auto Power Off

This function allows the projector to turn off automatically if no input source is detected after a set period of time to prevent unnecessary waste of lamp life.

To set **Auto Power Off**, go into the **SYSTEM SETUP: Basic > Auto Power Off** menu and press **◀/▶**. The time period can be set from 5 to 30 minutes in 5-minute increments. If the preset time lengths are not suitable for your presentation, select **Disable**. The projector will not automatically shut down in a certain time period.

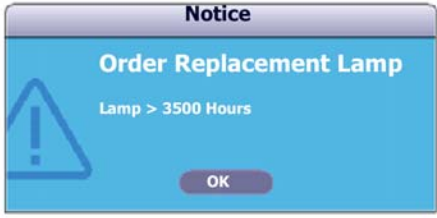
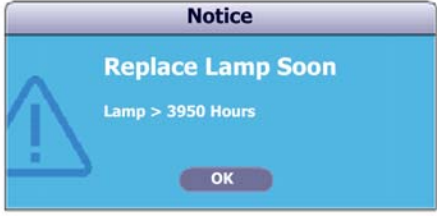


Timing of replacing the lamp

When the **Lamp indicator** lights up red or a message appears suggesting it is time to replace the lamp, please install a new lamp or consult your dealer. An old lamp may cause a malfunction in the projector and in some instances the lamp may explode.

 **CAUTION**

The Lamp indicator light and Temperature warning light will light up if the lamp becomes too hot. Turn the power off and let the projector cool for 45 minutes. If the Lamp or Temp indicator still lights up after turning the power back on, please contact your dealer. See ["Indicators" on page 46](#) for details.

The following lamp warning displays will remind you to change the lamp.

Status	Message
<p>The lamp has been in operation for 3500 hours. Install a new lamp for optimal performance. If the projector is normally run with Economic selected (See "Setting Lamp mode as Economic" on page 41), you may continue to operate the projector until the 3950 hour lamp warning appears.</p>	
<p>The lamp has been in operation for 3950 hours. A new lamp should be fitted to avoid the inconvenience when the projector runs out of lamp time.</p>	
<p>The lamp has been in operation for 4000 hours. It is strongly recommended that you replace the lamp at this age. The lamp is a consumable item. The lamp brightness diminishes with use. This is normal lamp behavior. You can replace the lamp whenever you notice that the brightness level has significantly diminished. If the lamp is not replaced beforehand, it must be replaced after 4000 hours usage.</p>	
<p>The lamp MUST be replaced before the projector will operate normally.</p>	

Replacing the lamp

To prepare a new lamp, contact your dealer and tell the lamp type number.

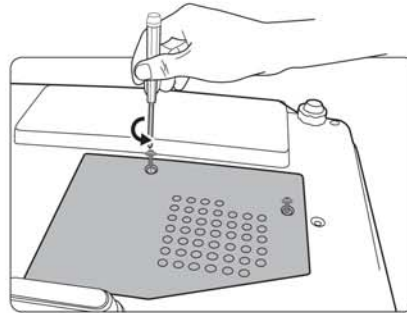
Type number: RLC-047

 **WARNING**

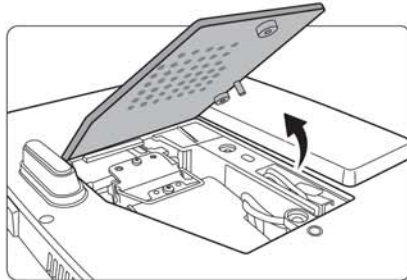
Hg - Lamp contains mercury. Manage in accordance with local disposal laws. See www.lamprecycle.org

- To reduce the risk of electrical shock, always turn the projector off and disconnect the power cord before changing the lamp.
- To reduce the risk of severe burns, allow the projector to cool for at least 45 minutes before replacing the lamp.
- To reduce the risk of injuries to fingers and damage to internal components, use caution when removing lamp glass that has shattered into sharp pieces. Before replacing the lamp, clean the lamp compartment and dispose of cleaning materials. Be careful of sharp edges in the lamp compartment. Wash hands after lamp replacement.
- Only ViewSonic certified lamps are tested with this projector. Use of other lamps may cause electrical shock and fire.

1. Turn the power off and disconnect the projector from the wall socket. If the lamp is hot, avoid burns by waiting for approximately 45 minutes until the lamp has cooled.
2. Turn the projector over. Then loosen the screws on the lamp cover.



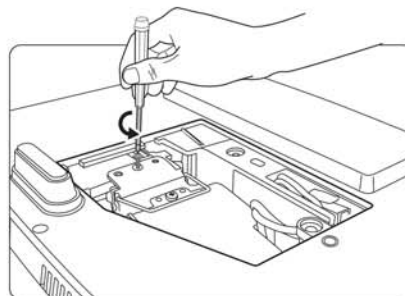
3. Remove the lamp cover from the projector.



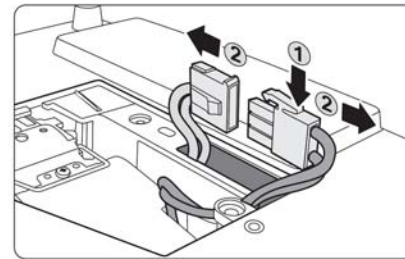
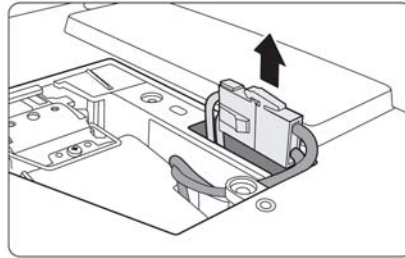
 **WARNING**

- Do not turn the power on with the lamp cover removed.
- Do not insert your fingers between the lamp and the projector. The sharp edges inside the projector may cause injuries.

4. Loosen the screw that secures the lamp.



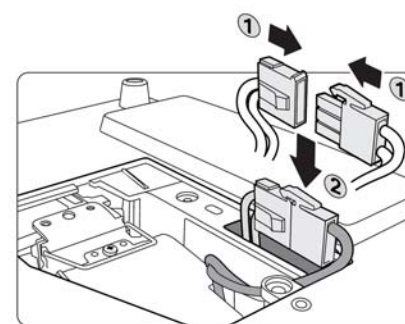
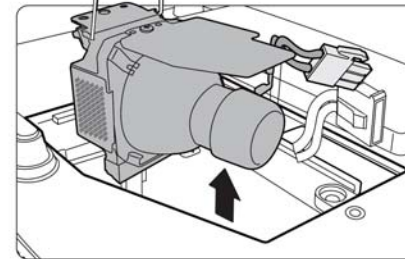
5. Pull out the lamp connector from a slot in the lamp compartment. Disconnect it from the projector as illustrated.



6. Lift the handle so that it stands up. Use the handle to slowly pull the lamp out of the projector.

⚠ CAUTION

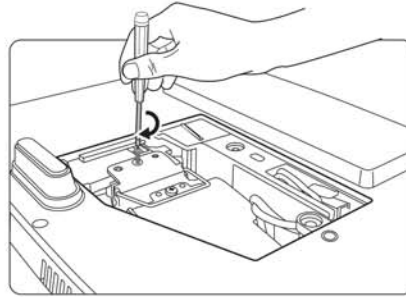
- Pulling it too quickly may cause the lamp to break and scatter broken glass in the projector.
 - Do not place the lamp in locations where water might splash on it, children can reach it, or near flammable materials.
 - Do not insert your hands into the projector after the lamp is removed. If you touch the optical components inside, it could cause color unevenness and distortion of the projected images.
7. Insert the new lamp into the lamp compartment and make sure it fits in the projector.
8. Reconnect the lamp connector and place it back into its slot to be flush with the projector.



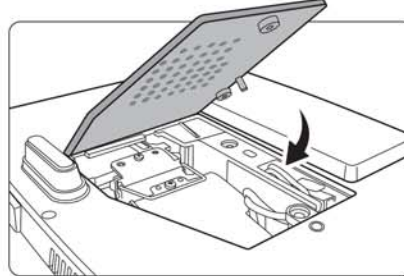
9. Tighten the screw that secures the lamp.

⚠ CAUTION

- Loose screw may cause a bad connection, which could result in malfunction.
- Do not over tighten the screw.



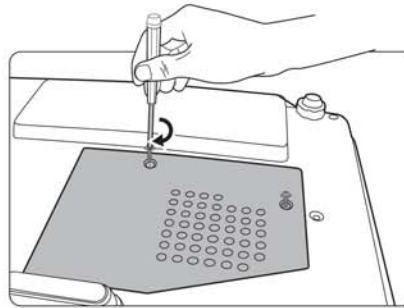
10. Ensure the handle is fully laid flat and locked in place.
11. Replace the lamp cover on the projector.



12. Tighten the screws that secure the lamp cover.

⚠ CAUTION

- Loose screw may cause a bad connection, which could result in malfunction.
- Do not over tighten the screws.



13. Restart the projector.

⚠ CAUTION

Do not turn the power on with the lamp cover removed.

Resetting the lamp timer

14. After the startup logo, open the On-Screen Display (OSD) menu. Go to the **SYSTEM SETUP: Advanced > Lamp Settings** menu. Press **MODE/ENTER**. The **Lamp Settings** page displays. Press **▼** to highlight **Reset lamp timer** and press **MODE/ENTER**. A warning message displays asking if you want to reset the lamp timer. Highlight **Reset** and press **MODE/ENTER**. The lamp time will be reset to '0'.



⚠ CAUTION

Do not reset if the lamp is not new or replaced as this could cause damage.

Indicators

Light			Status & Description
Power	Temp	Lamp	
Power events			
Blue Flashing	Off	Off	Stand-by mode
Blue	Off	Off	Powering up
Blue	Off	Off	Normal operation
Blue Flashing	Off	Off	<ol style="list-style-type: none"> The projector needs 90 seconds to cool down as it was abnormally shut down without the normal cooling down process. Or The projector needs to cool for 90 seconds after the power is turned off. Or The projector has shut down automatically. If you try to re-start the projector, it will shut down again. Please contact your dealer for assistance.
Lamp events			
Purple Flashing	Off	Red	The projector has shut down automatically. If you try to re-start the projector, it will shut down again. Please contact your dealer for assistance.
Off	Off	Red	<ol style="list-style-type: none"> The projector needs 90 seconds to cool down. Or Please contact your dealer for assistance.
Thermal events			
Off	Red	Off	The projector has shut down automatically. If you try to re-start the projector, it will shut down again. Please contact your dealer for assistance.
Off	Red	Red	
Off	Red	Green	
Red	Red	Red	
Red	Red	Green	
Blue	Red	Red	
Blue	Red	Green	
Purple	Red	Red	
Purple	Red	Green	
Off	Green	Red	

Troubleshooting

① The projector does not turn on.

Cause	Remedy
There is no power from the power cord.	Plug the power cord into the AC inlet on the projector, and plug the power cord into the power outlet. If the power outlet has a switch, make sure that it is switched on.
Attempting to turn the projector on again during the cooling process.	Wait until the cooling down process has completed.

① No picture

Cause	Remedy
The video source is not turned on or connected correctly.	Turn the video source on and check that the signal cable is connected correctly.
The projector is not correctly connected to the input signal device.	Check the connection.
The input signal has not been correctly selected.	Select the correct input signal with the SOURCE key on the projector or remote control.
The lens cover is still closed.	Open the lens cover.

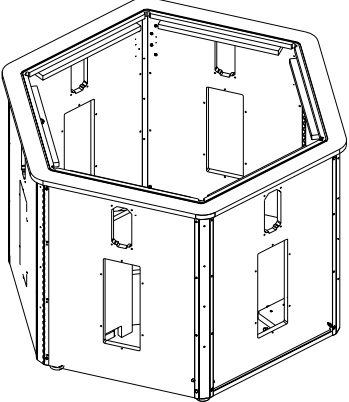
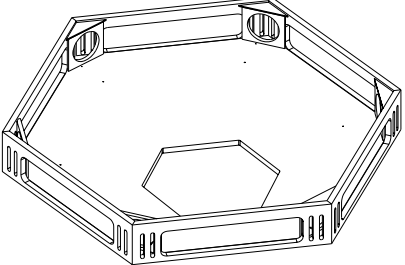
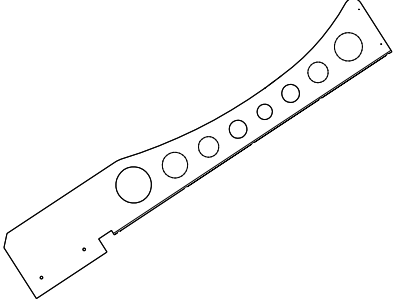
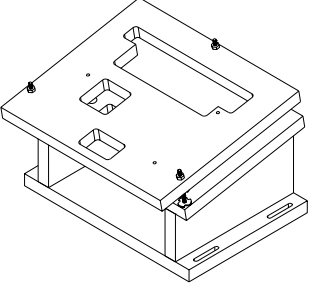
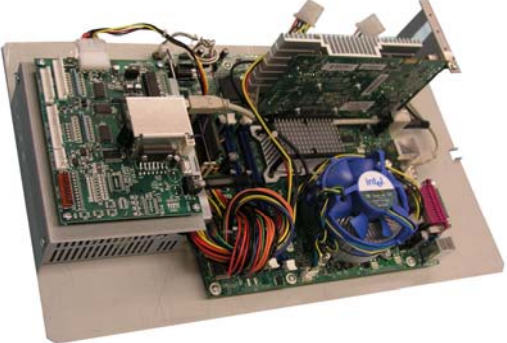
① Blurred image





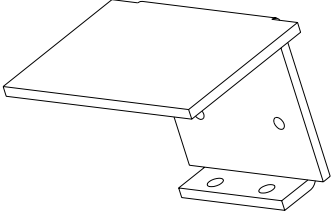
Cause	Remedy
The projection lens is not correctly focused.	Adjust the focus of the lens using the focus ring.
The projector and the screen are not aligned properly.	Adjust the projection angle and direction as well as the height of the projector if necessary.
The lens cover is still closed.	Open the lens cover.







① Remote control does not work

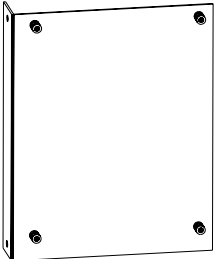
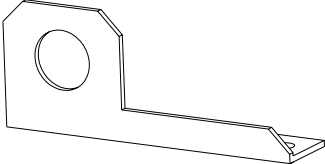
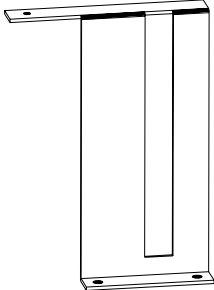
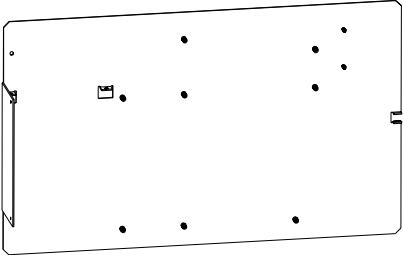


Cause	Remedy
The battery is out of power.	Replace the battery with a new one.
There is an obstacle between the remote control and the projector.	Remove the obstacle.
You are too far away from the projector.	Stand within 8 meters (26 feet) of the projector.

14. GalacTix Parts List



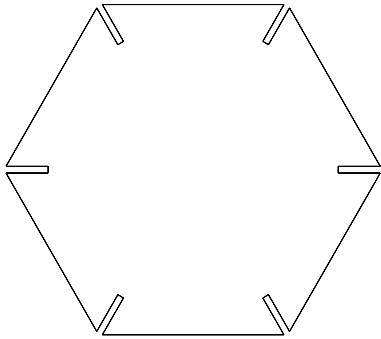
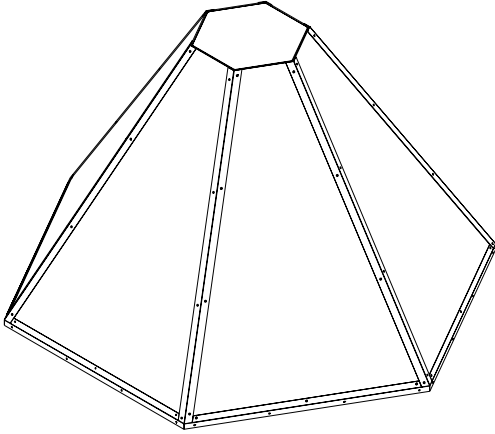
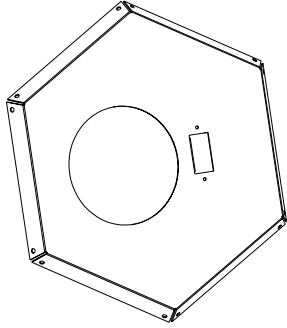
Part Picture	Part Number	Part Name	Qty.
	GTX-CCC-LOWCAB	Cabinet - Main	1
	GTX-CCC-PROJCAB	Cabinet - Top	1
	GTX-CCC-RIBS	Cabinet - Ribs	6
	GTX-CCC-PROJMNT	Cabinet – Projector Mount	1
	GTX-SUB-PCSHELF	Computer Shelf Subassembly (Motherboard, Processor, Ram, Heat Sink, Fan, I/O Board, Power Supply, Metal Computer Shelf)	1



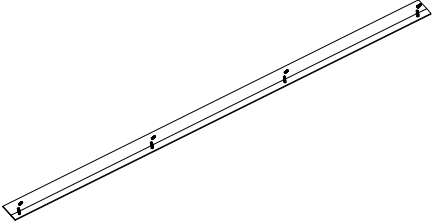
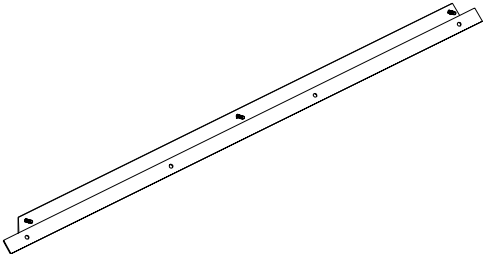

	<p>000-ELE-270WPWR</p>	<p>270 Watt PC Power Supply - Sparkle Part #FSP270-50SNV</p>	<p>1</p>
	<p>PUT-ELE-2GCFCARD</p>	<p>Compact Flash (2GB)</p>	<p>1</p>
	<p>PUT-PCB-MBIN048</p>	<p>Motherboard - D945PLNML S775 800FSB DDR2 UATX BULK</p>	<p>1</p>
	<p>GTX-PCB-USBIO</p>	<p>GalacTix USB I/O Audio Amp</p>	<p>1</p>
	<p>PUT-MLS-AHSNK15</p>	<p>Amp Heat Sink 1516</p>	<p>1</p>


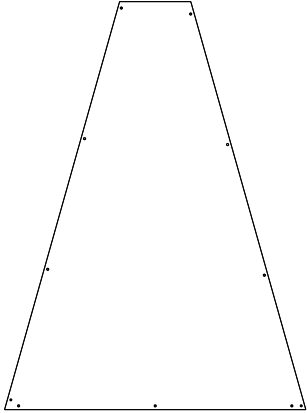
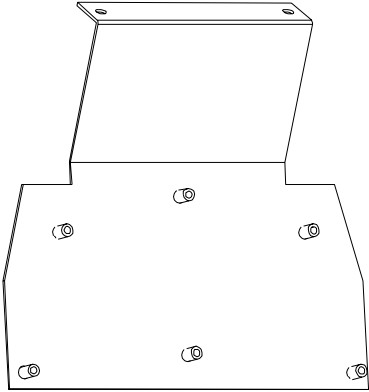
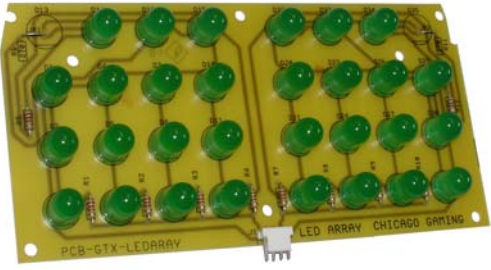
	<p>PUT-PCB-V9502GT</p>	<p>Biostar Graphics Card Part #V9502GT51</p>	<p>1</p>
	<p>PUT-ELE-1GBRAM</p>	<p>1GB RAM DDR2 533MHz PC2-4200</p>	<p>1</p>
	<p>PUT-ELE-CF SOCKET</p>	<p>Compact Flash Socket</p>	<p>1</p>
	<p>PUT-ELE-PRIN780</p>	<p>Processor - Celeron 2.8GHZ S775 533FSB 64BIT BULK</p>	<p>1</p>
	<p>PUT-ELE-SUPACC</p>	<p>Celeron Fan/Heat Sink</p>	<p>1</p>
	<p>000-MLW-80MMGRD</p>	<p>80mm Fan Grill, for Processor Fan</p>	<p>1</p>

	<p>PUT-MLS-IOMOUNT</p>	<p>IO PCB Mount</p>	<p>1</p>
	<p>PUT-MLS-PBTNBRK</p>	<p>Power Button Bracket</p>	<p>1</p>
	<p>PUT-MLS-VIDOBRK</p>	<p>Video Support Bracket</p>	<p>1</p>
	<p>PUT-MLS-ELECPNL</p>	<p>Computer Shelf</p>	<p>1</p>
	<p>000-ELE-AVR750U</p>	<p>Tripp-Lite AVR Series Line-Interactive UPS System 120V Tripp-Lite Part #AVR550U</p>	<p>1</p>
	<p>GTX-MLS-UPSTRAP</p>	<p>UPS Strap</p>	<p>1</p>





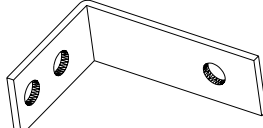
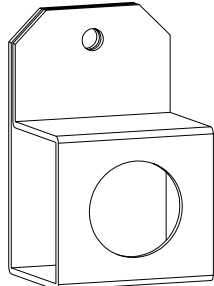
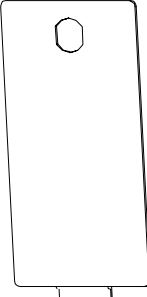
	GTX-PCB-RS232PI	Projector PCB	1
	000-ELE-9VACADP	9V A/C Adapter	1
	000-CBL-20MDIN8	20' Mini Din 8 Cable, Male to Male	1
	000-CBL-10VGAMM	10' VGA Cable, Male to Male	1
	000-CBL-35ADIO2	3.5mm Stereo Audio Cable, 2'	1
	000-CBL-3USBAB	3' USB Cable, A-Male to B-Male	1
	000-CBL-6USBAB	6' USB Cable, A-Male to B-Male	1

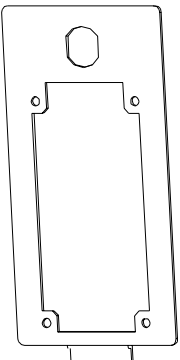




	000-ELE-PJD5351	Viewsonic Digital Projector PJD5351	1
	000-LMP-RLC047	Projector Replacement Bulb, Part #RLC-047	1
	GTX-PLS-WHTSCRN	Projector Screen Cut to Size	1
	GTX-SUB-NOSCONE	Complete Nose Cone Assembly (Art Panels, Brackets, Fan, LED PCBs)	1
	GTX-MLS-NCCAP1	Nose Cone Cap (Rev 0.1)	1



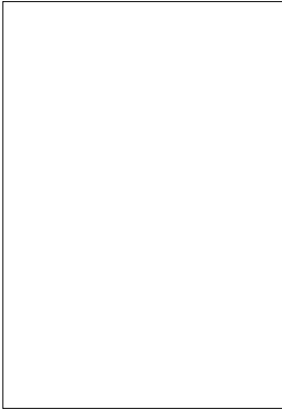

	<p>000-ELE-12VDCFN</p>	<p>12V DC Fan, 120mm</p>	<p>1</p>
	<p>000-MWF-FANGRIL</p>	<p>4.68" Chrome Fan Guard, for Nose Cone Fan</p>	<p>1</p>
	<p>GTX-MLS-NCSBRK1</p>	<p>Nose Cone Side Bracket (Rev 0.1)</p>	<p>6</p>
	<p>GTX-MLS-BASBRK1</p>	<p>Nose Cone Base Bracket (Rev 0.1)</p>	<p>6</p>
	<p>GTX-SUB-CONEPNL</p>	<p>Nosecone Panel Assembly (Plastic with Decal and LED Diffuser)</p>	<p>1</p>

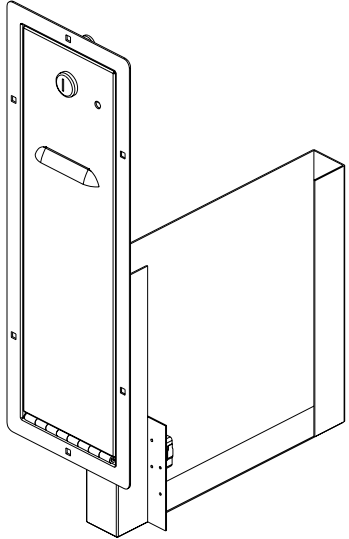
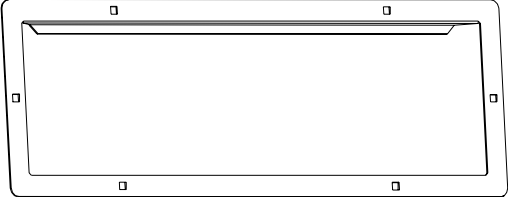
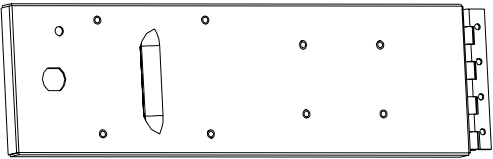
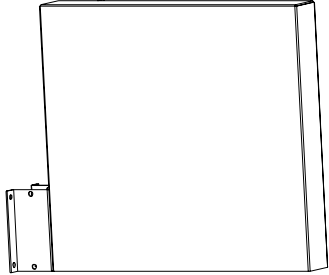


	<p>GTX-ART-NCONE</p>	<p>Nosecone Art (decal only)</p>	<p>6</p>
	<p>GTX-PLS-NOSCONE</p>	<p>Polycarbonate Nose Cone Pieces</p>	<p>6</p>
	<p>GTX-MLS-LEDMONT</p>	<p>LED PCB Mount</p>	<p>6</p>
	<p>GTX-PCB-LEDARRAY</p>	<p>Nose Cone LED PCB</p>	<p>6</p>


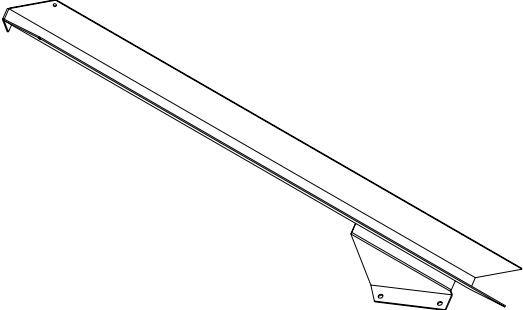
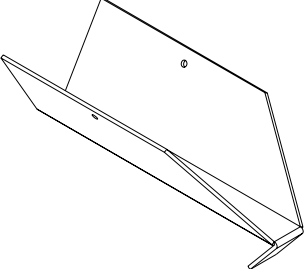
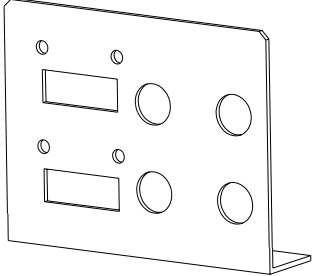



	GTX-SUB-MIRRBOX	Mirror Box Subassembly	1
	GTX-GLS-12X12MR	12" x 12" x 1/8" Mirror	1
	GTX-MLS-MIRRBKT	Mirror Mount Bracket	2
	000-LCK-CH751	CH751 Locks	8
	GTX-ART-MARQUEE	Marquee	6
	GTX-PCB-LEDPUCK	Marquee LED PCBs	12
	GTX-MLS-SPKGRIL	GalacTix Speaker Grill	12



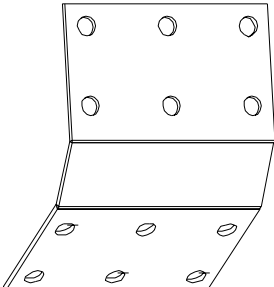
	000-SPK-475IN80	Speakers 4 3/4" 8 Ohm	6
	000-LMP-12CCFL	12" CCFL White (2 Bulbs, 1 Inverter)	3
	000-LMP-12INBLB	Single 12" CCFL Bulb	
	000-ELE-INVRTER	CCFL Inverter	
	015-MLS-AGLBRKT	Angle Bracket	12
	015-MLS-CFBALST	CCFL Inverter Bracket	3
	GTX-MLS-BLNKPLT	Coin Blank Plate	6

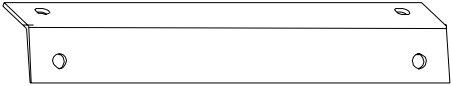
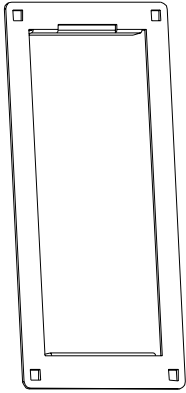
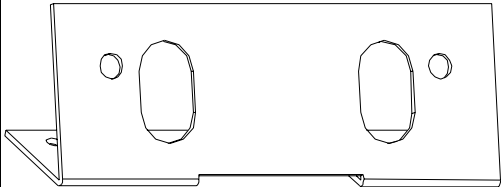
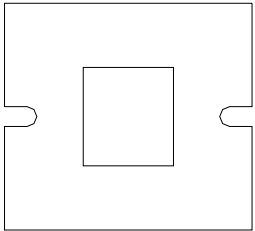
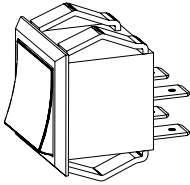
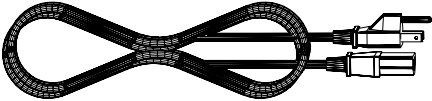
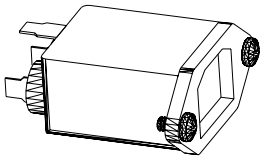
	<p>GTX-MLS-MECHPLT</p>	<p>Coin Mech Plate</p>	<p>6</p>
	<p>000-CUR-WEICOIN</p>	<p>Coin Mechanism Model #S-071CS</p>	<p>6</p>
	<p>GTX-MLS-FIREBLK</p>	<p>Fire Blank Plate</p>	<p>6</p>
	<p>GTX-ART-COININS</p>	<p>Insert Coin Decal</p>	<p>6</p>
	<p>GTX-ART-LOWSIDE</p>	<p>Lower Side Art</p>	<p>6</p>

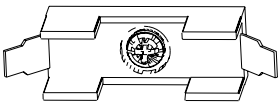


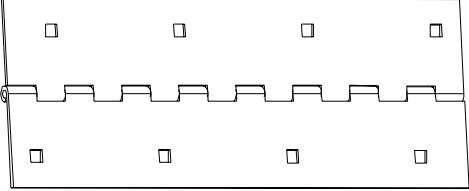
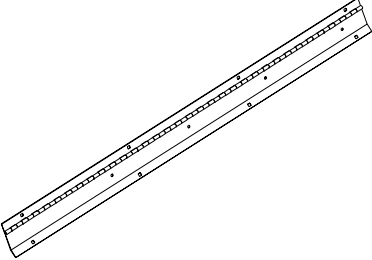
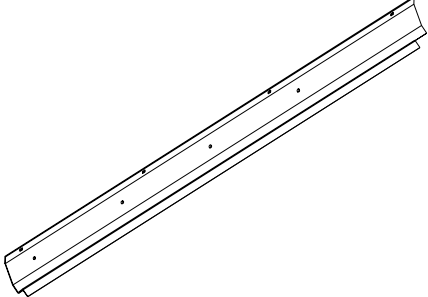
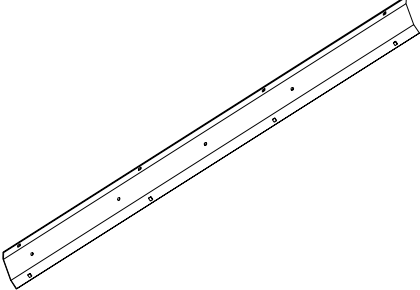
	<p>GTX-ART-TICKETS</p>	<p>Tickets Decal</p>	<p>6</p>
	<p>GTX-SUB-WNDWART</p>	<p>Side Glass with Art</p>	<p>6</p>
	<p>GTX-GLS-BODGLAS</p>	<p>Side Glass 3/16" Tempered Grey, 22-7/16" x 32-9/16"</p>	<p>6</p>
	<p>GTX-ART-WINDOW</p>	<p>Window Art (Decal only)</p>	<p>6</p>

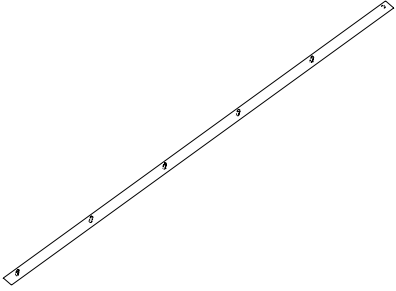
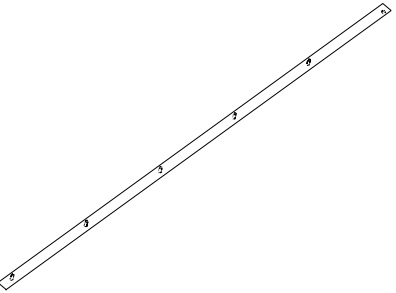
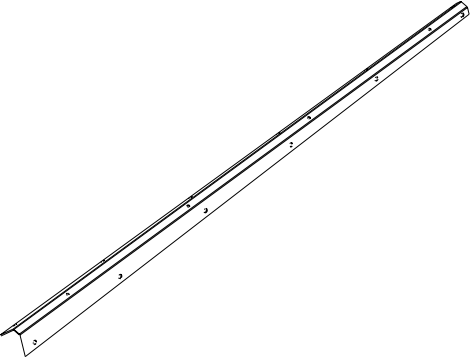
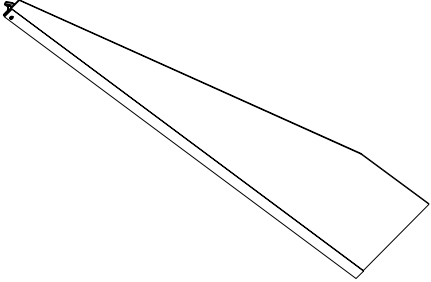
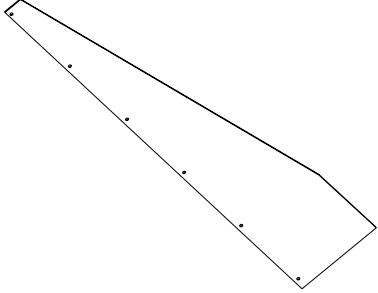
	<p>GTX-SUB-TICKDOR</p>	<p>Ticket Door Assembly (Includes Frame, Door, Ticket Holder, Lock, Ticket Low Switch, Ticket Low Cable)</p>	<p>6</p>
	<p>GTX-MLS-TICFRAM</p>	<p>Ticket Door Frame</p>	<p>6</p>
	<p>GTX-MLS-TICKDOR</p>	<p>Ticket Door</p>	<p>6</p>
	<p>GTX-MLS-TIKHOLD</p>	<p>Ticket Holder</p>	<p>6</p>
	<p>000-MCH-DL1275</p>	<p>Ticket Dispenser Deltronics Model #DL-1275</p>	<p>6</p>
	<p>000-LMP-5MMRED</p>	<p>5MM Red Ticket Low LED</p>	<p>6</p>

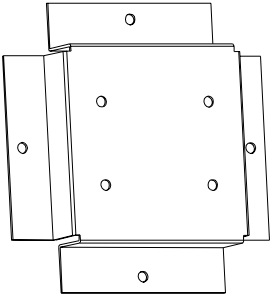
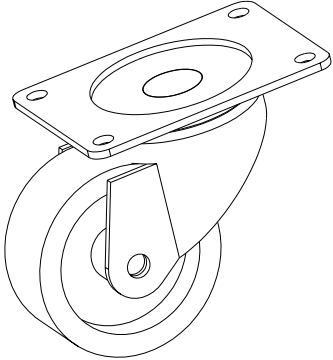
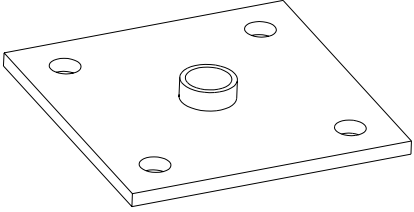
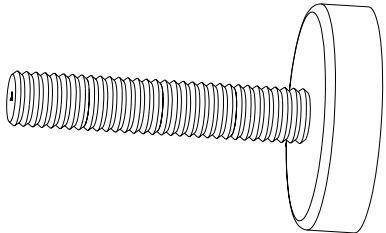
	000-LMS-LEDCR17	LED Clip & Ring, Black, T-1-3/4 LED	6
	GTX-MLS-CINCHUT	Coin Chute	6
	GTX-MLS-COINEXT	Coin Chute Extension	6
	GTX-MLS-CONTRBK	Counter Button Plate	1
	000-HAP-MBUTTON	Mini Pushbutton, Black Bezel Yellow Center	4
	000-HAP-12VMETR	12V 7 Digit Meter with Leads	2
	GTX-CCC-CASHBOX	Cash Box with Handles	1

	000-HDL-4INCHST	4" Chest Handle	2
	GTX-MLS-FIREPLT	Fire Switch Plate	6
	GTX-HAP-FIREBTN	Fire Button	6
	000-HAP-MINSWTC	Miniature Snap Switch	6
	000-LMP-12VT134	T1-3/4 LED, 12V	6
	GTX-MLS-GLASRTN	Glass Retainer Bracket	6
	GTX-MLS-ISIDCPL	Inside Coupler	6

	GTX-MLS-MARQBRK	Marquee Bracket	6
	GTX-MLS-MONTPLT	Mech Mount Plate	6
	GTX-MLS-RIBMTBK	Rib Mount Bracket	6
	000-MLS-PWRPLT	Power Switch Plate for Alco Switch	1
	000-SWC-ALCO16A	Alco Switch	1
	000-CBL-6PWR18G	6" Power Cable	1
	000-ELE-FILTINL	Filter, Yunpen 6A, IEC connector	

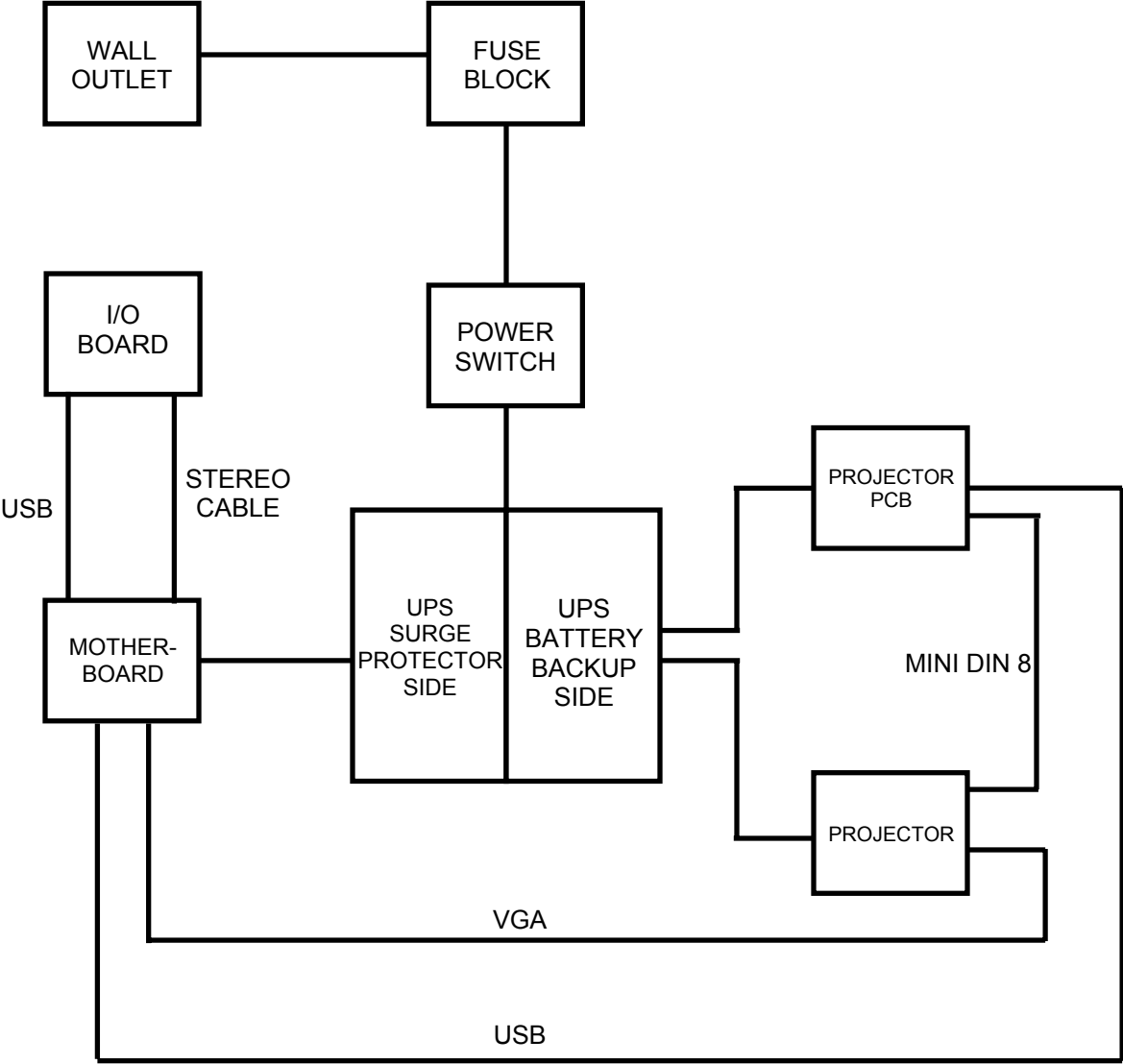
	000-ELE-FUSHOLD	Fuse base	1
	000-FUS-5A250V	Fuse	1
	GTX-MLS-RIBTPBK	Rib Top Bracket	6
	GTX-MLS-VLTHING	Vault Hinge	1
	GTX-MLS-DORHING	Door Hinge	1
	GTX-MLS-DORJAMB	Door Jamb	1
	GTX-MLS-SIDCOUP	Side Coupler	4

	<p>GTX-MLS-FINSTDL</p>	<p>Fin Stud Plate Left</p>	<p>6</p>
	<p>GTX-MLS-FINSTDR</p>	<p>Fin Stud Plate Right</p>	<p>6</p>
	<p>GTX-MLS-FINBASE</p>	<p>Fin Base Mount</p>	<p>6</p>
	<p>GTX-SUB-FINS</p>	<p>Fin Assembly with Fin Base, Left Stud Plate and Right Stud Plate</p>	<p>6</p>
	<p>GTX-PLS-FINSIDE</p>	<p>GalacTix Fin Side (1 Side)</p>	<p>6</p>

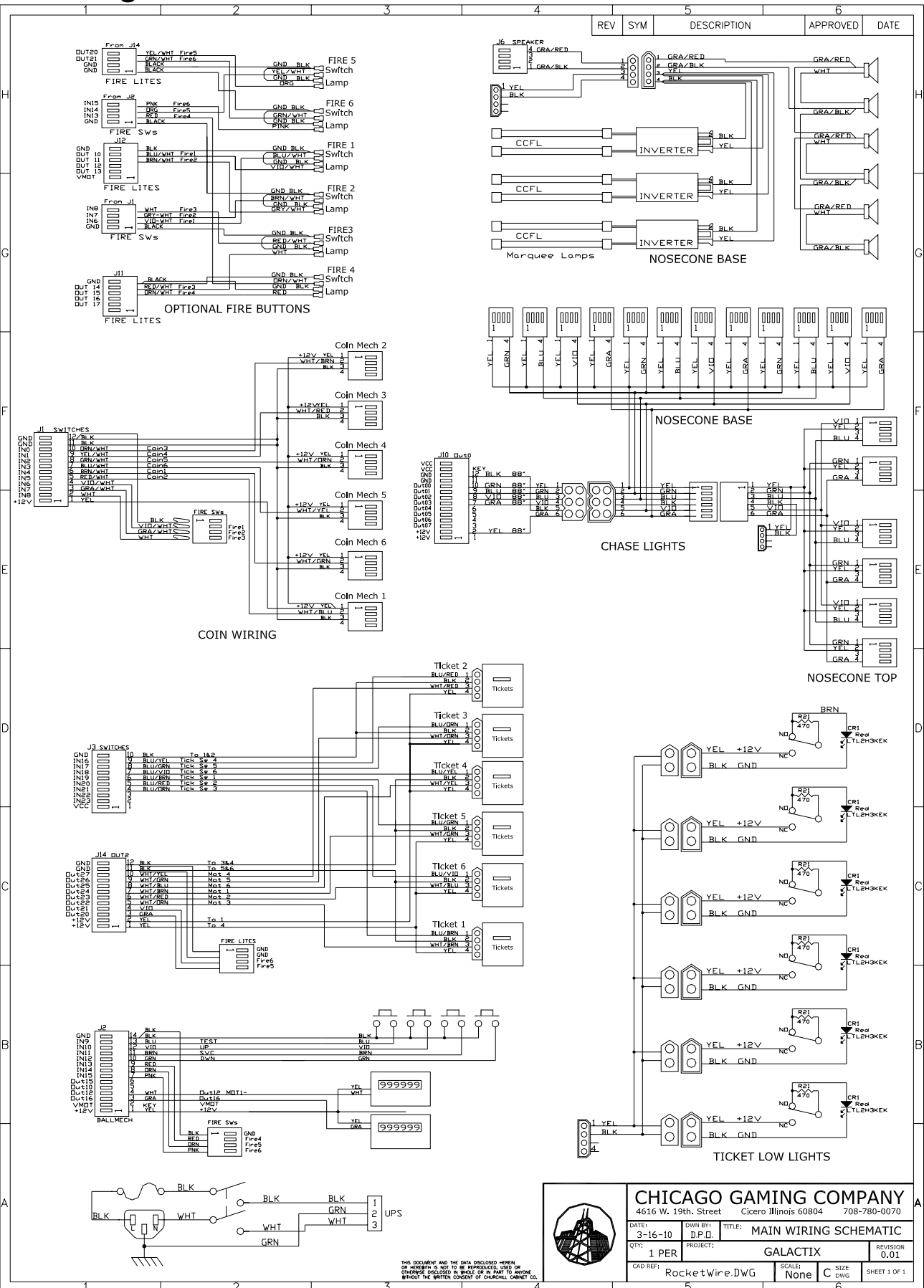
	GTX-MLS-CASTBOX	Caster Mount Box	3
	000-HDW-3SCASTE	3" Swivel Caster	3
	000-HDW-5LEGPLT	1/2" Leg Leveler Plates	4
	000-LVR-1213X3	Leg Levelers, 1/2-13 x 3"	5
	GTX-CBL-TICKSWC	Ticket Low Switch Cable	6
	GTX-CBL-FIRESWC	Fire Button Cable	1
	GTX-CBL-CHASLIT	Marquee Chase Light Cable	1
	GTX-CBL-COINTIX	Coin and Ticket Cable	1
	GTX-CBL-SERVICE	Service Cable	1
	GTX-CBL-SPEAKER	Speaker / Marquee Cable	1
	GTX-CBL-TICKLIT	Ticket Low Light Cable	1
	GTX-CBL-CHASPWR	Chase Power Cable	1
	GTX-CBL-CHASTOP	Chase Top Cable	1
	GTX-CBL-MARQPWR	Marquee Power - Speaker	1
	GTX-CBL-ACPOWER	AC Wiring Harness	1
	PUT-CBL-POWRBRK	CPU Power Button Cable	1
	PUT-CBL-RESET	Computer Reset Cable	1

15. Block Diagram

This diagram shows how the main components are connected. The **UPS** has two sets of four outlets. The left side only acts as a surge protector. The right side is both a surge protector and battery backup. The **Computer Shelf** plugs into the **Surge Protector** side. The **Projector** and **Projector PCB** both plug into the **Surge Protector Plus Battery Backup** side. This turns the computer off when power is lost, but keeps the **Projector** running long enough for a soft shutdown, which helps extend lamp life.



15. Wiring Schematic



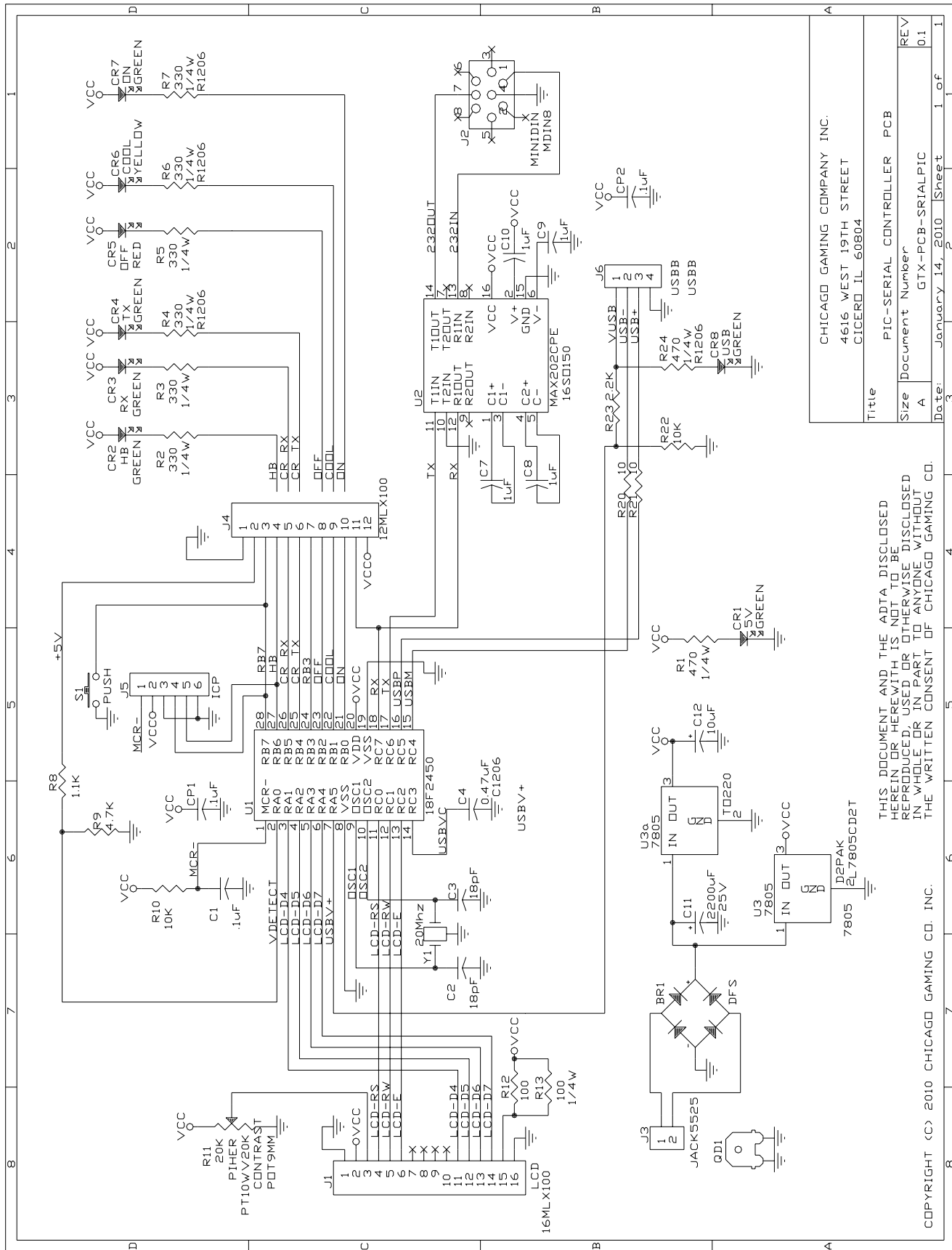
REV	SYM	DESCRIPTION	APPROVED	DATE

CHICAGO GAMING COMPANY
 4616 W. 19th. Street Cicero Illinois 60804 708-780-0070

DATE: 3-16-10 DWN BY: D.P.D. TITLE: MAIN WIRING SCHEMATIC
 QTY: 1 PER PROJECT: GALATIX REVISION: 0.01

CAD REF: RocketWire.DWG SCALE: None SIZE: C DWG: SHEET 1 OF 1

15. Board Layout



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CHICAGO GAMING COMPANY INC.
 4616 WEST 19TH STREET
 CICERO, IL 60804

Title	PIC-SERIAL CONTROLLER PCB	
Size	Document Number	REV
A	GTX-PCB-SR1ALPIC	01
Date:	January 14, 2010	Sheet 1 of 1

