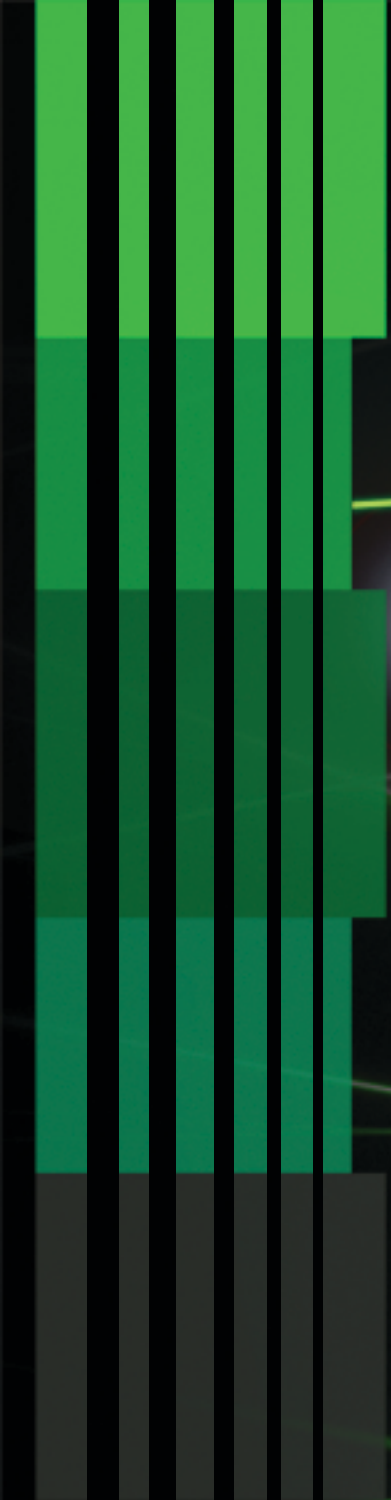




LASER MAZE CHALLENGE[®]

with
**BEAM
BUSTER[®]**

USER'S MANUAL



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COMPLIANCES:

This system is RoHS compliant.

This system is FCC Class B Compliant

This system is CE Class A Compliant

This system is TÜV Compliant



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1- DECLARATION OF CONFORMITY



DECLARATION OF CONFORMITY FOR EUROPEAN UNION

The product listed on this Declaration of Conformity has been tested and verified to comply with the essential requirements of the Electromagnetic Compatibility Directive 2004/108/EC of 15 December 2004, on the approximation of the laws of the Member States Relating to Electromagnetic Compatibility (EMC). These products also comply with The Low Voltage Directive of 2006/95/EC

Standards to which conformity is declared:

EN 55011: 2007	Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment
EN 61000-6-1: 2007	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light industrial environments
EN 61000-3-2: 2006	Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
EN 61000-3-3: 2006 + A1: 2001 + A2: 2005	Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
Power Supply Only: EN 60950-1:2001	Information technology equipment – Safety – Part 1: General Requirements
Laser: EN/IEC 60825-1, Ed 2, 2007-03 and per US FDA / CDRH Laser Product performance requirements via the terms of US CDRH Laser Notice No. 50, dated June 24, 2007	Safety of laser products – Part 1: Equipment Classification, Requirements and User's Guide

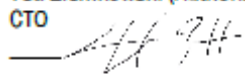
FUNOVATION, INC.
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The Laser Maze Challenge® is an addictive attraction that requires brain and brawn. Each Maze consists of many patent-pending components, including Laser Modules, Receiver Modules, Reflector Modules and a Game Controller. Your mission, should you choose to accept it, is to navigate through a web of lasers to the end of the Maze where you press a stop button that ends your challenge and determines your time/score. The lower the time the better! If you happen to break a laser beam, that's OK. It just adds time to your score. Now don't hesitate another moment...accept the Laser Maze Challenge® and have some fun!

Product Name: Laser Maze Challenge®
Model: LMC01

Product manufactured at Funovation, Inc., 410 S. Sunset, Unit B, Longmont CO 80501 USA
CE Mark first applied, August 2008.

Funovation hereby declares that the equipment specified above conforms to the protection requirements of the above named Directive(s) and Standards.

Name: Ted Ziemkowski (Authorized Representative)
Title: CTO
Signature:  Ted Ziemkowski
Date: 2015.01.02 16:59:31
-07'00'

Funovation Confidential



2- LASER SAFETY

Funovation's Laser Maze Challenge® is a fun, exciting attraction. Like all attractions, safety must be your first priority. By following the procedures in this manual and the safe laser handling instructions, you can assure your guests a safe and fun experience.

GAME PLAY

During game play, the Laser Maze Challenge is a **Class 1** Laser System. The lasers are programmed to turn off when blocked by a player within 90 μ s (making it virtually impossible to stare directly into a beam). There is no maintenance required to maintain this class of operation; however, should you believe that the system is no longer behaving properly, please contact Funovation for assistance.



MAINTENANCE

User maintenance is limited to adjusting the alignment of the Laser and Reflector modules and some basic cleaning. Alignment of the Laser and Reflector modules is done in Laser Alignment Mode and should only be performed by trained personnel. While in Laser Alignment Mode, the system is a **Class 3R** operation (beams will not automatically turn off when blocked). At no time should an operator stare directly into any laser or reflected laser source. Staring directly into a **Class 3R** laser source may cause temporary or permanent eye damage. Please use caution when laser exposure is near the face or eyes. The system should not be operated if the unit is defective or any component has been tampered with. The system's housings are not to be removed or the components modified by the operator, unless instructed. All parts are to be returned to Funovation for service or repair by an authorized technician.

CLEANING

Basic cleaning should be performed with the system turned off. This includes wiping the reflector surface mirrors with the cleaning cloths provided in the Maintenance Kit or a wet Q-Tip™ cotton swab (using 99% alcohol or the optical cleaning fluid). Occasionally, the laser output lens may become dusty. This can be cleaned with the same wet Q-tip cotton swab.

CLASS 3R LASERS

Lasers used in this system are calibrated by the original manufacturer to comply with Class 3R operation. These lasers are then re-checked after final assembly in a Laser Module. The Laser Controller board regulates the laser output to less than 5 mW over the specified temperature range (0-50°C). Each Laser Module shows the laser manufacturer's serial number around the barrel of the laser. These numbers are also recorded at Funovation and the laser output is checked for Class 3R compliance after final assembly (Using a Melles Griot 13PEM001 Broadband Power/Energy Meter).

CAUTION

- * AVOID DIRECT EYE EXPOSURE.
- * Keep the Controller Cabinet (LCS Cover) locked during Game Play.
- * Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

2.1- LASER SAFETY: PRODUCT SAFETY LABELS AND LOCATIONS

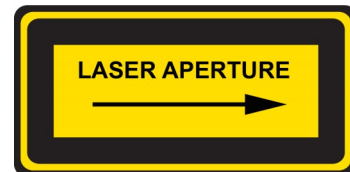
LABEL A: This safety label appears next to all laser apertures, on the Laser Control Modules (LCMs) and on the inside cover of the Controller Cabinet. It reminds the trained operator that the System is in Class 3R operation during Laser Alignment Mode.



LABEL B: This safety label appears on the Controller Cabinet cover. It indicates that in normal game play operation, the system is a Class 1 laser product.



LABEL C: This safety label appears on each Laser Module and indicates that laser light is emitted from the center opening.



LABEL D: This safety label appears on each Laser Control Module (LCM) and on the inside cover on the Controller Cabinet. It reminds the trained operator that the System is in Class 3R operation during Laser Alignment Mode.



LABEL E: This is the Manufacturer's identification and certification label. It is located on the front cover of the Controller Cabinet. It is attached at the time of manufacturing and will be completed with the serial number and manufacturing date.



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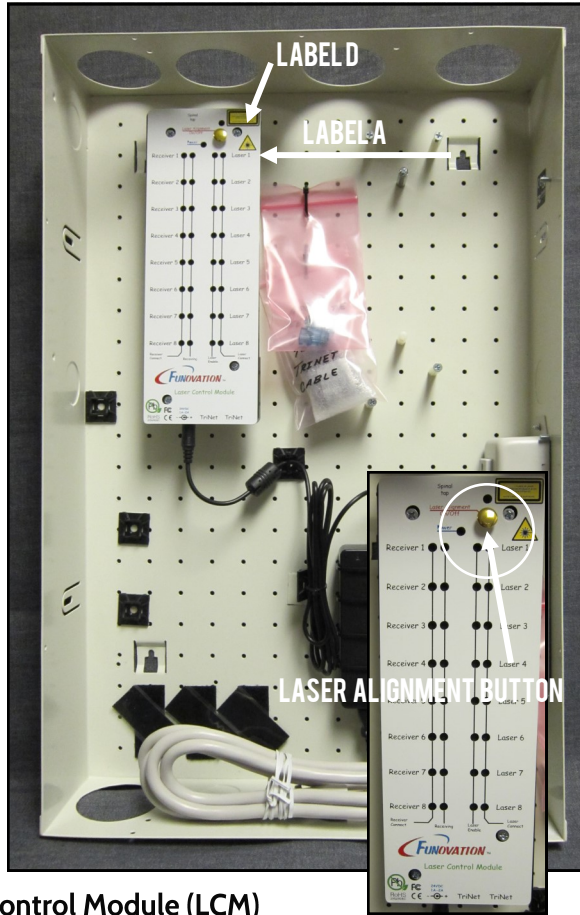
Model: LMC01
Serial Number: _____
Date of Manufacture: _____

Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007
Patented (7,663,091, 7,779,683) - with additional patents pending

CE FC

2.1- LASER SAFETY: PRODUCT SAFETY LABELS AND LOCATIONS

Controller Cabinet Labels:



Laser Control Module (LCM)

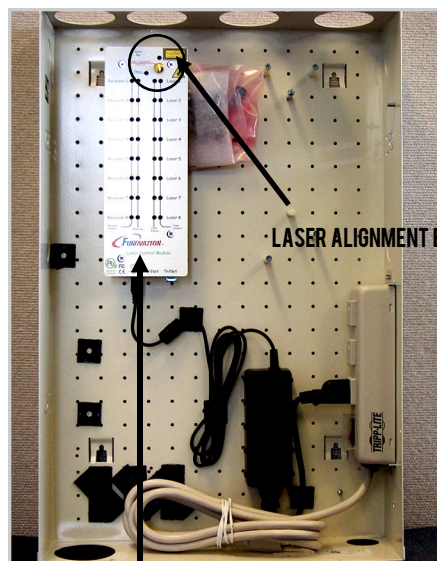


Laser Control Station Cover (LCS)



Labels placed on the Laser Module, Receiver Module, and Reflector Module

2.2- LASER SAFETY: LASER CONTROL MODULE AND SOURCE SPECIFICATIONS



Laser Control Module (LCM)



Laser Control Station Cover (LCS)

HARDWARE CONTROLS RELATED TO LASER SAFETY

1) The Laser Control Module (some facilities may have 2) is housed in a locking Laser Control Cover/Cabinet. It is recommended to keep the LCS locked during game play, while the Maze is not in use or is unattended. Only authorized personnel should have access.

2) The Laser Control Module has a brass button (pictured above) that, when pressed, signals the system to go into Laser Alignment Mode (Class 3R operation). Before activating, make sure no players are in the Maze. A bright, red LED will indicate when the LCM is in alignment mode and the modules will flash. The system will remain in alignment mode (for a maximum of 10 minutes) as long as normal communication is maintained with the TriNet bus (the IFM is plugged in). Please NOTE: Laser Alignment mode can also be accessed by pressing F5 on the keyboard. For more on Laser Alignment, see pages 15 & 28-29.

LASER SOURCE SPECIFICATIONS:

PARAMETER	MIN.	TYPICAL	MAX.	UNIT
Optical Power	2.5	3.5	5.0	mW
Wavelength	515	518	520	nm
Operating Temperature Range	0°C	25	50	°C
Storage Temperature Range	-20°C	--	60	°C
Expected Lifetime	5000	--	--	hrs.

3- PRODUCT OVERVIEW: LASER MAZE CHALLENGE®

GAME SUMMARY: The Laser Maze Challenge is an interactive, immersive attraction that challenges players to navigate their way through a complex web of green lasers in the fastest time possible, without breaking any beams. Players are to complete Mission Objectives* along the way. If they fail to complete a Mission Objective or break any laser beams, they will be penalized and more time will be added to their score (100 points). In order to complete the Maze, the player must wave his or her hand in front of the Mission Complete module (located near Exit). Players who successfully and quickly complete the Maze may earn a spot on the Top 10 Leaderboard. The Leaderboard displays the Top 10 players' names and scores on the outside of the Maze. The Leaderboard can be customized for event and competition purposes and changes respective of the Mission Level selected. (See the "Appearance" section of the Software Manual to learn how to customize the Leaderboard). In Co-op Play (2 Player) Mode, the rules are the same; however, the players are to simultaneously engage the Mission Objectives and Mission Completes.

*If your Maze package includes theming, interactive theming elements (e.g. Hand Scanner, Vault Door, Master Key), may be installed in place of the Mission Objectives and Mission Complete Eyes (though aesthetically different, they function the same way). These elements are designed to heighten the player experience and help perpetuate the story.



Laser Maze with The Vault Escape™ Theming

3- PRODUCT OVERVIEW: BEAM BUSTER®

GAME SUMMARY: Beam Buster is a fast-paced game play mode now included with the Laser Maze Challenge. In Beam Buster, players must break as many laser beams as they can in the time allotted (we recommend ~30 seconds). The more lasers broken, the better the player's score. Unlike in the Laser Maze Challenge in which the lower the score the better, in Beam Buster, the objective is to earn the highest score possible. While it is primarily intended for young players (ages 3-7), it contains strategy elements that also makes it appealing to players who are young at heart. For instance, players can earn additional points by engaging the Bonus and Covert Objective buttons (once they have been enabled), but have to strategize when is the most optimal time to engage each button, as they do different things and may not be in close enough proximity to be worth the risk.

BEAM BUSTER GAME COMPONENTS

Mission Objectives: Enabled if 4 or more lasers have been broken by the player. When engaged (by waving hand over module), Mission Objectives reset the lasers- turning them all back on, hence creating more opportunities for the player to break beams and earn a high score. However, once an objective is met, the scoring system is reset as well, so the 1st three lasers are only worth 1 point each and so on (see scoring system below).

Bonus Buttons: Enabled when **all** the lasers have been broken. Engaging a Bonus Button (by waving hand over module), increases the players score by 20 points in Single Player mode and 40 points in Co-op Play.

Covert Objective (if applicable): When met, the Covert Objective doubles the number of points earned in-between the last time an objective was engaged.

CO-OP MODE:

In Co-op Mode, the game rules are the same, however players must simultaneously engage the Mission Objectives and Bonus Buttons in order for them work.

SCORING SYSTEM -

The sequence in which a laser was broken, determines how many points it is worth:

- The first three lasers are worth 1 point each

- The next three lasers are worth 2 points each

- The next set of three lasers are worth 3 points each

- The next set of three lasers are worth 4 points each and so on*

*Depending on the number of lasers in your system

END OF GAME

When the game is approaching the end, a voiceover will indicate the player only has 5 seconds left and countdown the remaining seconds.

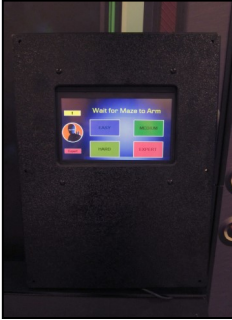
SELECTING BEAM BUSTER

The player can select Beam Buster using the Mission Control Panel, or the Attendant can choose it from the Attendant Screen.

3.1- GAME COMPONENTS

While each Maze is designed and beamed differently, the Laser Maze Challenge utilizes the same proprietary components that operate in the following ways:

MISSION CONTROL PANEL

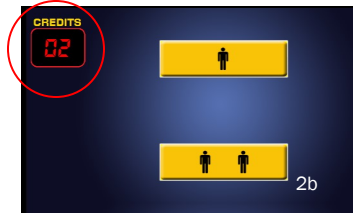
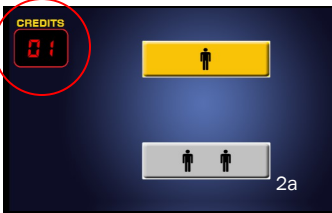


The Mission Control Panel is a player interface that instructs the player to do the following: A) Choose either Single or Co-op Play Mode, B) Select their desired game mode either—the Laser Maze Challenge or Beam Buster, and C) Select their Mission Level (Laser Maze Challenge only). A series of prompts will guide the player along and inform them when they can D) “Enter the Maze.” If present, an Attendant can select these options for the player using the Attendant Screen. *See the Software Manual or Quick Reference Guide for instructions on how to use the Attendant Screen. Below are the Mission Control Panel screens as they will appear to the player in Unattended Mode.

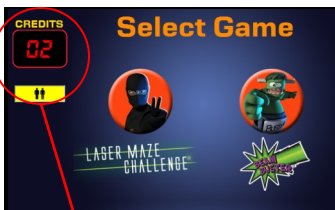
Screen 1—Add Credits (Depending on your operations model). 1 credit for Single Player Mode, 2 credits for Co-op Mode.



Screens 2a and 2b—Single or Co-op Play Mode. In example 2a, only 1 Credit has been added, as indicated on the left, and the Co-op Play option is grayed out, to notify the player(s) there are not enough credits to select this option. In example 2b, two credits have been added—the Co-op Play option is now also available as indicated by the yellow.

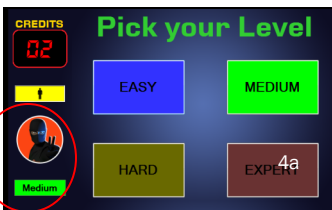


Screen 3—After choosing either Single or Co-op Play, the player will be prompted to select their game mode—either the Laser Maze Challenge or Beam Buster.



Here the player selected Co-op Mode and has two credits remaining.

Screens 4a and 4b—If the player chooses the Laser Maze Challenge, they will be prompted to pick their Mission Level—Easy, Medium, Hard, or Expert. If they choose Beam Buster, they will be prompted to “Enter the Maze” and begin the game, as there are no Mission Levels in this game mode.

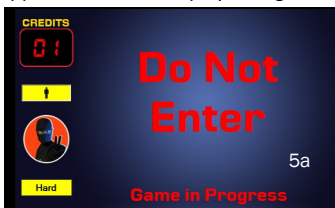


Here the player chose the Laser Maze Challenge (represented by the Ninja Icon), on Medium Level, in Single Player Mode.

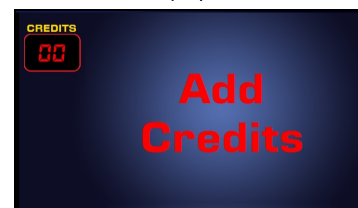


In this example, the player chose Beam Buster, as indicated on the left.

Screens 5a and 5b—As soon as a game has started, the Do Not Enter screen will appear to alert other players a game is in progress.



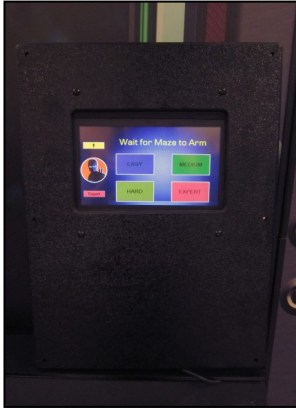
When the game is over, the screen will reset for the next player.



3.1- GAME COMPONENTS

MISSION CONTROL PANEL (CONTINUED)

The Mission Control Panel in Attended Mode works essentially the same way as Unattended Mode, aside from this difference:



After the player selects their game play mode (either the Laser Maze Challenge or Beam Buster and their Mission Level (for the Laser Maze Challenge® only) they will see the below screen, notifying the player they must wait for the Attendant to “arm” the Maze. The Maze can be armed by 1) Pressing the Mission Control on the Attendant Screen or 2) Using the Remote Control. *The Maze is automatically armed once a game is selected in Unattended Mode.



REMOTE CONTROL



To arm the Maze with the Remote Control, click either the “On” or “Off” button. *Clicking either button again will disarm the Maze. During game play, the Attendant can terminate a play by clicking either button (i.e. a player is misbehaving or there has been an interference).

*Holding either button down will toggle between Single Player and Co-op Play Mode. **PLEASE NOTE:** Arming the Maze signals the Start Gate to turn on and resets the Mission Clock back to zero. Even while an Attendant is entering a player’s information, they can arm the Maze so the next player can begin. The remote control can also be used during maintenance to exit alignment mode. *The Remote functions the same way in Beam Buster.

START GATE



Once the player(s) is/are ready, they can enter the Maze. As soon as the Start Gate detects someone has entered the Maze (positioned near entrance), the lasers will power on and the clock will start ticking. In Beam Buster™, the lasers will already be on. The Start Gate is designed to be imperceptible to the player. If you are having problems with your Start Gate, you may need to check the distance in which it is set (uses Sonar to detect players). See page 27 for more information.

The player is then to navigate their way through the Maze without breaking any beams (if they do, a penalty of 30 points will be added to their score). The amount of beams a player can break and the maximum amount of time they are allowed to be in the Maze can be set under the Game Play tab in Administration (See the Software Manual). These settings are designed to help mitigate player flow and to increase throughput. In Beam Buster they are to break as many lasers as they can in the time allotted (to change the time set, go to the Software Launch Pad → Administration → Game Play).

3.1- GAME COMPONENTS CONTINUED

MISSION OBJECTIVE EYE



While the player is making their way through the Maze, they are to engage checkpoints (a.k.a. Mission Objectives) along the way. If they fail to engage a Mission Objective, they will be issued a penalty, and time will be added to their score. To successfully engage a Mission Objective, the player must wave their hand in front of all the Mission Eyes present (generally two per Maze, yellow backlit). In 2 Player Co-op Play, each player is to engage their own Mission Objective; engaging them at the same time as one another. *Facilities that purchased theming may have interactive theming elements in place of Mission Eyes (e.g. Hand Scanners that work the same way).



HAND SCANNER

In Beam Buster, Mission Objectives are only enabled once the player or players have broken 4 lasers. When engaged, they reset the lasers and scoring system, turning all the lasers back on. The player can repeatedly activate the Mission Objective(s) to get more lasers. Like the Laser Maze Challenge, in Co-op Play, both players have to engage the Mission Objectives simultaneously in order for them to work.

MISSION OBJECTIVE EYE



To complete the Maze, the player must wave their hand in front of the Mission Complete (positioned near the exit). The Mission Complete is the same as a Mission Objective, only it is backlit red instead of yellow. In Co-op Play Mode there are two Mission Completes (one is inactive during Single Player mode)– for each player to engage at the same time as one another. *The Mission Complete is often set so that it is only active and illuminated after a Mission Objective has been met/engaged.

In Beam Buster, Mission Completes act as Bonus Buttons. They are only active once the player or players have broken *all* the lasers. When engaged, the Bonus Button increases the players' score by 20 points in Single Player Mode, and 40 points in Co-op Play. Both players must simultaneously wave their hand over the Bonus Buttons in Co-op Play Mode.



VAULT DOOR MISSION COMPLETE

*Facilities that purchased theming may have an interactive theming element in place of the standard Mission Completes (e.g. a Vault Door and Master Key that act as a Mission Completes).

3.1- GAME COMPONENTS CONTINUED

Each Laser Maze Challenge also contains the following components:

EXCITEMENT STROBE



Strobes are positioned inside and outside the Maze to add excitement and draw attention to the Maze. They are programmed to flash (blue, red, and white) when the Maze starts, to direct players to the exit, to indicate if any beams have been broken, and/or when a penalty has been issued.

MISSION CLOCK



Mission clocks are also positioned inside and outside the Maze. They are programmed to automatically add time to the player's score if they were issued a penalty for breaking a beam or for failing to engage a Mission Objective.

BEAT THIS! STICKERS



Some packages may include a Label Printer and Beat This Stickers! These stickers display the player's score, the game play mode, the Mission Level played (for the Laser Maze Challenge), and number of lasers broken. The stickers can be programmed to print in a variety of scenarios. For more on Stickers, see the Software Manual.

3.2- ADDITIONAL COMPONENTS

INTERFACE MODULE



The IFM is responsible for game play control and relaying information back to the PC (e.g. times, scores). It essentially acts as the Laser Control Station's memory/storage device. It is also responsible for communicating game events that require the PC to provide sounds. Without a proper connection to a PC, there would be no sounds effects during game play.

LASER CONTROL STATION

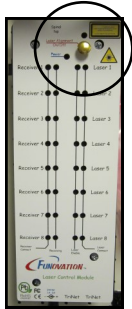


The Laser Control Station should remain locked during game play. It houses the Laser Control Module(s) (LCM). The LCM controls all of the lasers in the Laser Maze Challenge. It also controls the Receivers. The LCM has several light indicators to show the status of the various Maze components:

- *Yellow LEDs: A yellow LED on the main controller indicates that a connection exists between the main controller and the Laser or Receiver (plugged in that position).
- *Green LEDs: When a green LED is lit on the main controller, it indicates that the controller is actively driving a Laser or that a Receiver is properly seeing light. In a brightly lit room, the green LEDs corresponding to Receivers will always be on because the room light will activate them.

3.2- ADDITIONAL COMPONENTS CONTINUED

LASER CONTROL MODULE



***LASER ALIGNMENT:** To start Alignment Mode, unlock the LCS Cabinet and press the Laser Alignment button (During maintenance mode, system is a Class 3R operation– Avoid Direct Eye Exposure) or press F5 on the keyboard. All the lasers will come on so the Laser and Reflector Modules can be properly aligned in accordance with each other. All the modules and their alignment specifications are described in the descriptions below and on the following page. To exit Alignment Mode, press the brass button on the Laser Control Module or F5 on the keyboard, use the Remote Control, or press any of the Mission Level buttons on the Attendant Screen or Mission Control Panel.

LASER MODULE



The Laser Modules produce the green laser beams that make up the Laser Maze Challenge. Avoid direct eye exposure while performing maintenance on the Maze. The lasers are very low power (Class 3R)– rated in the same class as laser pointers. They are just as safe as laser pointers and do not require any special safety equipment, however they do require safe operation as described in this manual.

Each Laser Module must be plugged into the LCM and attached firmly to the wall/mounting bracket. To align a Laser Module, loosen the three inner screws with the provided 7/64" ball tip allen key. Gently swivel the Laser until it is pointing within 6" of the center of the first Reflector mirror. Snug the three screws evenly (do not over tighten). Next, use the provided 3/32" ball tip allen key to turn the three outer screws until the laser points at the center of the Reflector mirror. If one screw is becoming tight or overly loose, move it back to a center point and use the other screws to help with adjustment.

REFLECTOR MODULE



Reflector Modules allow one Laser to create multiple beams. Up to two Reflector Modules per Laser may be used, allowing one Laser Module to create up to three visible beams. Total beam length should be limited to less than 60 feet for ease of alignment.

Reflector modules are designed to tip and swivel. Put the provided ball tip allen key in the hole to the right of the mirror to loosen the mirror. Once loosened, use your fingers to adjust the mirror so that the laser beam hits within 6" of the center of the Receiver or the next Reflector. Tighten the mirror once you have the laser beam pointing where you want it.

***If the mirror surface must be cleaned, use the provided lens cleaning kit. The mirror is a special mirror designed to reflect the laser without distortion. Consequently, it is easily scratched with anything other than a high-quality lens cleaning cloth. Cleaning cloths are provided in the Maintenance Kit.**

3.2- ADDITIONAL COMPONENTS CONTINUED

RECEIVER MODULE



Receiver Modules detect the laser light produced by the Laser Modules and reflected by the Reflector Modules. They are the end point of a laser beam. The Receiver Modules allow the LCM to determine when a beam has been broken and prompt it to perform the appropriate action (e.g. administer a sound effect, issue a penalty). Each Receiver Module must be plugged into the LCM board (LEDs indicate proper connectivity) and secured firmly to a wall. Unlike the Laser and Reflector Modules, the screws that surround the Receiver are not used for positional adjustment; the Receiver Module has no positional adjustment. The laser beam may hit anywhere within the white receiving area of the module to be detected, but it is best if it is near the center to ensure a trouble-free operation. A blue LED will illuminate the lower right corner of the white diffuser when the Receiver is properly “seeing” light.

LIVE ACTION AND TOP 10 LEADERBOARD TV



The HDTVs display a Live Action feed of the inside of the Maze and the Top 10 Leaderboard, so players waiting in line can watch their opponents, see the top scores to beat, and bystanders are drawn to the Maze. The Funovation install team will set your HDTVs to the proper settings as part of the installation of your Laser Maze.

However, should you ever need to reset the TV's settings–

1. Select Menu on your HDTV
2. Set the Mode to Movie
3. Then scroll down to Reset Picture and select to restore the default settings.

4- HAZER

1. OPERATION

The hazer emits a particulate haze in the Maze, making the laser beams easy for players to see. Ideally, haze should enter the room in a location far from the laser modules and should be configured so that the haze is evenly dispersed throughout the playing area. Keep in mind that excessive haze can cause false triggers; insufficient haze can make the laser beams difficult to see.

If enabled in the software (Go to Launch Pad-> Administration->Utility Tab), the hazer can be operated from the Attendant Screen. Clicking the “Hazer” button will open the Hazer Console from which you can manually emit haze by clicking on the “Short,” “Medium,” and “Long” burst buttons. This feature is typically used to get your Maze going upon opening.

*Always use caution when using the manual buttons not to over haze the Maze.

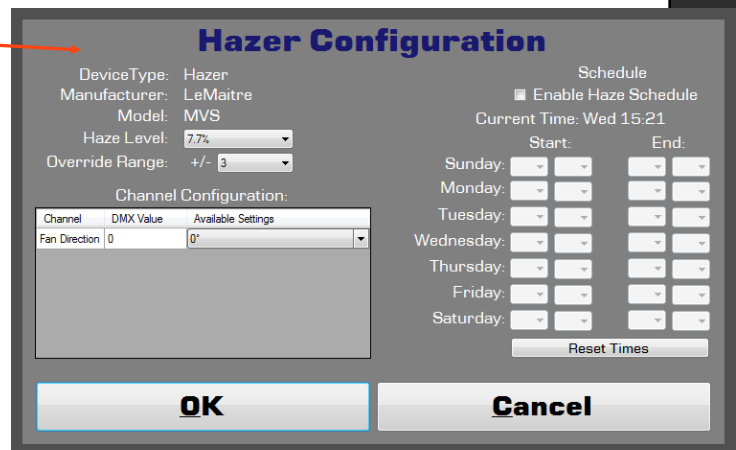
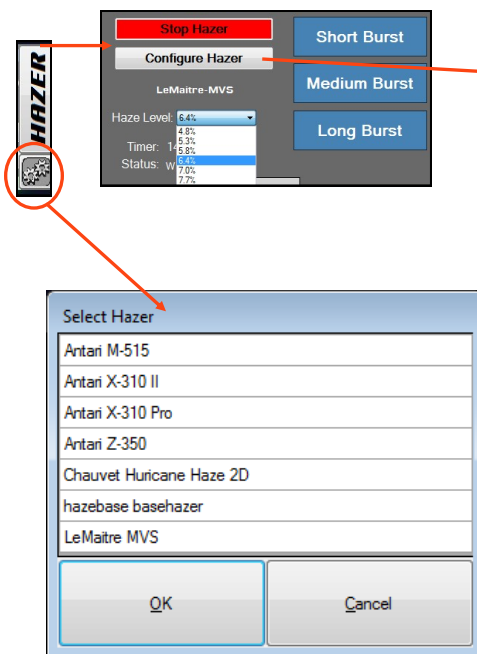
Or you can configure your hazer to automatically start, stop, and regulate the amount of the haze in the room by adjusting the settings in the Hazer Configuration window. The schedule feature is particularly helpful, as it enables you to pick start and end times for the hazer to automatically turn on and off.

*If you switch to your maintenance hazer (ex. The Antari Z-350) or to a new hazer, be sure to select it from the drop-down options accessible by clicking on the gear/settings button.

HAZER BUTTON

HAZER CONSOLE SCREEN

HAZER CONFIGURATION SCREEN



*The Hazer screens are password protected. To adjust your settings see the Security Tab in Administration.

*A back-up Hazer is provided as part of your Maintenance Kit. Be sure to call Funovation if you are having Hazer issues and need to switch over to your back-up unit.

4- HAZER CONTINUED

2. MAINTENANCE

All fog machines are prone to clogging due to the thick consistency of fog liquid (water-based) and the high temperature at which it vaporizes.

- Your primary hazer—the LeMaitre MVS— is self-cleaning upon start up so there is very little maintenance. Once a month, making sure it is dust free will help ensure that it is working at maximum capacity.
- Your back-up Hazer*— the Antari Z350 — also has a self-cleaning function. In order for this function to run, you should shut down the Laser Maze Challenge® computer at the end of the day by pressing the button on the computer tower itself (do not shut the computer down with a switch or breaker). Once the computer has shut down, the Antari Z350 will automatically go into its self-cleaning cycle, which will help ensure a long life for the hazer.

*Should you need to put your Z350 in because the MVS hazer isn't working, be sure to call Funovation so we can get your primary hazer repaired or replaced.

CAUTION

- Never place fog/hazer machine on any flammable material (i.e. carpet, fabric, etc.) during operation. All fog/hazer machines should always be on a non-flammable surface, such as concrete or tile.
- Depending on the amount of fog/haze generated, all fog machines may set off smoke detectors.

5- RUNNING THE MAZE

Follow these steps to run the Laser Maze Challenge:

1. **If Running Attended:** Have the player add credits or other form of payment (if necessary) and use the Attendant Screen to select A) Single or Co-op Play Mode, B) Beam Buster or the Laser Maze Challenge®, and C) the Mission Level for the Laser Maze Challenge. Or have the player select these options using Mission Control Panel. Then arm the Maze by using the Remote Control or the Mission Control Button on the Attendant Screen.

If Running Unattended: Have the player engage the Mission Control and add credits (e.g. insert token in Coin-Op machine, swipe card through Card Swipe, or insert bill into the Bill Acceptor). The player can then select either the 1 player or 2 Player Co-op Play, their desired game, and their Mission Level for the Laser Maze Challenge. Once they have made their way through the prompts, a screen will indicate when the Maze is ready to enter.

2. Send the player(s) through the curtain and across the Start Gate. As soon as the Start Gate detects the player(s), the game will power on and the timer will start counting.
3. **Laser Maze Challenge–** As the player(s) move through the Maze, their score will increase with time and if they break any laser beams (each broken laser adds 30 points, Oculus 3scanning laser adds 100 points). The player(s) is/are to engage all the Mission Objectives present. Failure to do so may result in a penalty or a Mission Complete that is inactive. *The Mission Complete is often set so that it is only active and illuminated after one Mission Objective has been met.

Beam Buster– The clock will start counting backwards from the time set (e.g. 30 seconds). The player(s) is/are to break as many lasers as they can in the time allotted. They do not have to engage the Mission Objectives or Bonus Buttons present, but doing so will increase their score and increase their chances of making it on the Top 10 Leaderboard. When there are only 5 seconds left, a voiceover will countdown the remaining time and alert the player(s) when it is time to exit the Maze.

4. When the player finishes the Maze (in the Laser Maze Challenge they have to successfully engage the Mission Complete), the score will freeze and the Maze lasers will turn off.
5. **If Running Attended:** The Attendant may record the player's score and personal information in the software database. If the player's score is in the Top 10, it will appear on the Leaderboard. (See the Software Manual "Run Attended" section for more information). If enabled and included, a Beat This! Sticker will print with the player's score

5- RUNNING THE MAZE CONTINUED

her name using the touch screen monitor. If enabled and included, the player will be given the option to print a Beat This! Sticker (or two in Co-op Play Mode).

7. If there are players waiting in the queue, the Attendant can arm the Maze and let the next player go through, even if they are still entering the last player's information by pressing either "On" or "Off" on the Remote Control (arms Maze). (The Attendant can continue to enter in information until they hit "Enter" on the Keyboard). Once the second player successfully completes the Maze, the Attendant can then add that player's information.
8. To restart the Maze, begin from step 1. The previous score will remain on the score display until the Maze is armed again.
9. If the score jumps (similar to when a person breaks a beam) as soon as the player enters (having NOT broken a beam), most likely a laser is out of alignment and needs to be re-aligned. Align the laser and call the player back to start again.

6- TROUBLESHOOTING

1. LASERS OUT OF ALIGNMENT FREQUENTLY:

Symptoms: Beams wiggle, alignment difficult to adjust, improper triggering

Probable Causes: Structure not sturdy, loose alignment or mounting screws, double gang box is loose (try removing Module and tightening gang screws).

Fix: Reinforce structure or attach firmly to solid surface. Check mounting and alignment screws for tightness. On the Laser and Reflector Modules, it is possible to have loose adjustment screws if one or more other screws have been over-tightened. Over-tightened screws may cause the module's faceplate to come up. Check to see if the double gang (green) needs to be replaced.

*Note: Extra double gang brackets are provided in the Maintenance Kit.

2. LASERS OUT –OR– WILL NOT TURN ON:

Symptoms: Laser will not turn on, even in Alignment Mode.

Probable Causes: Loose connection, control switches are turned off, bad cord, and/or possibly bad Laser Module.

Fix: Let's call the problem laser, "Laser P" and another (working) laser, "Laser A." Press brass alignment button on the Laser Control Module (LCM) or F5 on the keyboard, then proceed accordingly:

Step 1: Does "Laser P" show lights on the LCM (one green and one yellow)?

→ If yes, go to Step 5. If no, go to Step 2.

Step 2: Which color is out?

→ If green is out, go to Step 3, if yellow is out, go to Step 4

Step 3: The LCM may need to be replaced. Call for further assistance.

Step 4: Make sure the cable (silver with jack) is securely plugged into both the Laser and the Laser Control Module. If not fixed, go to Step 5

Step 5: Unplug "Laser P" from the LCM, then unplug "Laser A." Plug "Laser A" into "Laser P's" position. If fixed, then there is a bad cable for "Laser P," if not, go to Step 6. Or you can try plugging one end of the tester cable (provided in Maintenance Kit) into "Laser P" and the other end directly into the LCM board. If "Laser P" works, the cable is bad and needs to be replaced.

Step 6: Plug "Laser P's" cable into "Laser A" on the LCM. If fixed, then the main board may have a problem. Call for further assistance.

6- TROUBLESHOOTING CONTINUED

3. LASERS WILL NOT ALIGN:

Symptoms: Adjustment screws cannot be moved any further and the beam still is not going where intended.

Probable Causes: Gross adjustment was not close enough; adjustment is being attempted with only one or two screws.

Fix: Return all screws to their original position (with Laser gimbal backed off to jam nut) and redo the alignment process. Remember that if tightening a screw does not move a beam enough, loosening the screw on the opposite side can help move the beam further.

4. CONNECTION PROBLEMS:

Symptoms: Yellow LEDS on Laser Control Module (LCM) are not lit when modules are plugged in.

Probable Causes: Bad connector, cable unseated, or damaged cable.

Fix: Check cables and cable attachments for improper seating or damage. Test modules with the tester cable provided in the Maintenance Kit to determine if the original cables are bad.

5. SCORE SHOWS PENALTY RIGHT AS GAME IS STARTING:

Symptoms: As soon as the player enters the Maze, the score increases as though a beam has been broken.

Probable Causes: Laser is out of alignment, room is over hazed, or laser is weak (too dim), a foreign object is in the room, and/or fingerprints are on the modules.

Fix: Go into Alignment mode and check that the Laser is aligned and that the blue light on the corresponding Receiver is also on. If the beam is aligned but the blue LED on the Receiver is off, the Laser is not being detected. Make sure there are no fingerprints on the Reflector Module. If the mirror is clean, either the Laser is very dim or the Receiver may be defective. If the Laser is too dim, you can replace it with the Laser provided in the Maintenance Kit.

6. LASER WILL NOT TURN ON OR OFF:

Symptoms: Laser never turns on; laser never turns off during game play, even when the beam is broken.

Probable Causes: Improper adjustment, improper connection, bad Laser or Receiver, too much ambient light.

6- TROUBLESHOOTING CONTINUED

Fix: First, ensure that the Lasers and Receivers are plugged into the right locations on the main controller. If a Laser will not turn on, even in Alignment Mode, the silver cord to that Laser could be bad (check for Yellow LED) or the Laser itself could be bad. If a Laser is aligned properly (can be checked by blocking the Laser and watching the blue LED on the Receiver– the blue LED should come on when the laser hits the Receiver and off when the laser is blocked. If the blue LED never turns off (look for stray lighting hitting the sensor), but the beam never registers as being broken during game play, the Receiver may be bad. If it is determined that the Module is bad, unplug the faulty Laser or Receiver and its corresponding Laser or Receiver so that game play can continue and contact Funovation for support (Laser can be replaced with the Laser provided in the Maintenance Kit). Once a Receiver is switched off, or unplugged, the system will ignore that Receiver and continue game play.

7. LASER BEAMS ARE NOT VISIBLE

Symptoms: Players cannot see laser beams well enough.

Probable Causes: Hazer is not emitting enough haze; haze is being vented out of room; hazer is not functioning properly.

Fix: Adjust haze levels in the room, close off the vents, or check the hazer. If the hazer is not functioning properly, contact Funovation.

8. FALSE TRIGGERS

Symptoms: Beams register being broken when they are not.

Probable Causes: Poor alignment, unstable mounting structure, too much haze and/or a faulty laser.

Fix: See “Lasers out of Alignment frequently” (page 21). Also check for excessive haze in the room, especially if the false triggers involve lasers positioned near the hazer.

Terminator



9. MISSION CLOCK IS MISBEHAVING

Symptoms: Mission clock is not behaving properly (e.g. the count on the clock is off– skips/ timing is not uniform).

Probable Causes: Terminator (blue) is not plugged into module. See TriNet Map (in one of the pockets of the User’s Manual binder) for terminator location.

Fix: Check that there are no modules/TriNet devices with empty modular jacks. Either a black

6- TROUBLESHOOTING CONTINUED

CAT-5 (Ethernet) cable (with jack) or a terminator should be plugged into all the game component's modular jacks. Generally, the first and last modules have terminators. Consult the TriNet map provided by the installation crew for the original position of the terminators. *Note: If needed, extra terminators are provided in the Maintenance Kit.

10. THERE IS NO SOUND COMING FROM THE COMPUTER

Symptoms: Computer is on, but sound effects and music are not playing

Probable Causes: Volume is turned down on the computer or speaker, there is no power to the speaker, the speaker is not enabled, or you mistakenly hit the mute button on the wireless keyboard

Fix: Press 2 on the wireless keyboard that came with your touch screen monitor (if applicable) to make sure you didn't mute the sound by mistake. Check the computer and speaker volume level, make sure the RCA cable from the speaker (Line In) is plugged into the computer tower (green audio, Line Out) and plugged in all the way. Also check to make sure the speaker is "enabled." Go to the Windows Start Menu → Control Panel → Hardware and Sound Settings → the Speaker box should be checked (HDMI should be disabled).

11. SOFTWARE DOES NOT LAUNCH

Symptoms: The Software Launch Pad opens but does not load properly

Probable Causes: It is most likely due to a bad IFM if "Loading TriNet" is the only text that appears in the Launch Pad window, or the IFM may not be plugged in properly.

Fix: Check that the "PC Connected" light is green on the IFM. If it is not lit, make sure the IFM is connected to the computer (USB port). If the Software still does not launch, contact Funovation; the IFM may need to be replaced.

12. ONLY HALF OF THE MAZE IS FUNCTIONING PROPERLY

Symptoms: Only half of the modules are functioning, the other half is "out"

Probable Causes: There is a break in the TriNet cable, the cable is cut, or unplugged (or not plugged in all the way)

Fix: Go to the last module that is lit, make sure both black CAT-5 Ethernet (with jacks) are plugged in (or plugged in all the way). If so, go to the first module that is not working and check that its cables are properly plugged in. Continue checking all the modules down the line. If they appear to be plugged in properly, one of the cables may be bad. You can use the tester cable (in the

6- TROUBLESHOOTING CONTINUED

Maintenance Kit) to determine if there is in fact a problem with the cable, or if the module is bad. Use your TriNet Map (part of Maze Map) to determine the exact order in which the modules were installed. Keep in mind that some of the modules, may be outside the Maze (i.e. a Mission Clock).

13. MISSION EYE ONLY WORKS IN SOME OF THE LEVELS

Symptoms: Mission Eye does not work in one of the Mission Levels (e.g. works in Easy, Hard, and Expert but does not work in Medium).

Probable Causes: It was disabled and not re-enabled.

Fix: Go into in-Maze configuration mode and re-enable the Mission Eye for each level in which it is not working.

Things to note:

- In your Maintenance Kit you should have at least one additional Laser Module (2 if you have an Extended system). If you have Mission Eyes, you also have a spare Mission Eye. If you have theming elements (e.g. Hand Scanner, Master Key) you will have spare boards that you can swap out with the boards on the back of the theming element should they malfunction.
 - * If you have to use your spare parts, contact Funovation, so that we can send you replacements. This ensures that you always have spares on hand.

7- SOFTWARE

Every Maze is programmed with the Laser Maze Challenge software prior to installation. It can be accessed from the Laser Maze computer's desktop. The software allows Operators and Attendants to carry out various functions including:

- Run the Maze Attended or Unattended
- Track the number of plays per day, week, month, year, etc.
- Set a maximum game time and penalty limit
- Change the appearance of the Leader Board Screen and Welcome Text (can be customized for birthday parties, events, and contests)
- Set parameters for issuing redemption tickets
- Run the Hazer Utility
- Enable Co-op Play
- Maintain databases of player information for competition purposes (promote upcoming competitions and events, contact prize recipients)
- Manage Video Capture (sell and store videos)



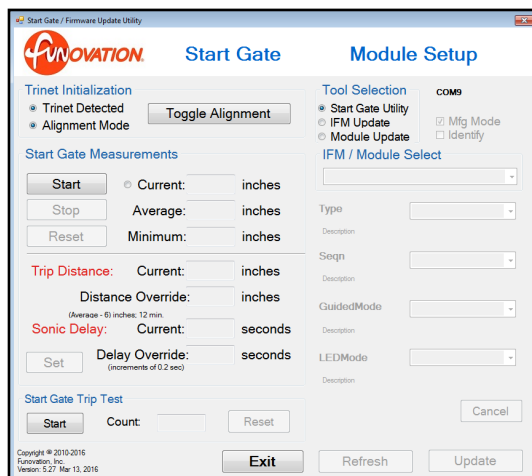
LASER MAZE CHALLENGE SOFTWARE—LAUNCH PAD

* Refer to the Software Manual for full details and instructions on the Laser Maze Challenge Software.

8- SETTING YOUR START GATE DISTANCE

In the event your Start Gate is failing to detect players as they enter the Maze, check the distance in which it has been set. If Funovation has sent you a replacement, you will need to follow the steps below to set the Start Gate at the correct distance.

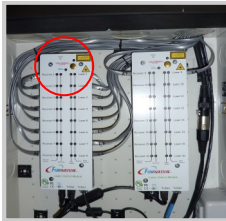
1. Check that the Laser Control Station is powered on and the Start Gate is properly installed.
2. Shut down the Laser Maze Challenge Software. The Start Gate Utility will not launch if the LMC Software is open.
3. Run the Start Gate Setup Utility. To locate it, go to Start->Programs->Funovation->Start Gate Setup Utility. The screen (see below) should appear.
4. When the application launches, it will put the Laser Maze in Alignment Mode.
5. Assure the Start Gate is making a ticking sound.
6. Press the Start button under “Start Gate Measurements” (see picture below). The software will then read the current distance to the opposite wall or corner.
7. If the read outs for “Current Average” and “Minimum” read “MIN” or “MAX” the gain is too high, call Funovation for assistance.
8. The Distance Override number should be 6 inches less than the Average.
9. Press the Set button. This will store the Distance Override number into the Start Gate (you can type another number into the Distance Override window if you do not like the programmed setting).
10. Now press the Start button under “Start Gate Trip Test.” The Start Gate will make a sound every time it detects someone. Walk in and out of the Maze to ensure it is detecting you. This is also a good way to aim the sensor to ensure it does not detect too early or late.
11. After aiming the sensor, the distance to the adjacent wall or corner may have changed. Stop the “Start Gate Trip Test” by pressing the Stop button under “Start Gate Measurements” and begin the process again from Step 5 until it is set correctly.



START GATE

9- IN-MAZE CONFIGURATION

To keep your Laser Maze Challenge fresh, it is recommended that the Maze be reconfigured periodically (update Maze layout). In-Maze configuration allows you to enable or disable individual Laser Modules, Mission Eyes, and theming devices for each of the four difficulty levels. Before beginning, make sure the lasers are aligned and working (shown by the green lights on the Laser Control Module).



CONFIGURING IN THE MAZE:

1. To enter configuration mode, press the brass “Laser Alignment” button on the Laser Control Module or press F5 on the keyboard. *All four skill-level buttons should now flicker on the Mission Control Panel.*
2. Press a skill-level button on the Mission Control Panel or the Software screen (Easy, Medium, Hard, or Expert). *The skill-level button selected should now be the only blinking button.* The Mission Clock will flash 8888 then 1 to indicate 1 player or flash 8888 then 2 to indicate Co-op play.
3. Enter the Maze, and configure the Lasers, Mission Eyes, and theme devices as follows:

LASERS:

To disable a laser, quickly (within 3 seconds) pass four fingers, up and down through the beam, *four times*. This interrupts the beam 16 times within three seconds. *A disabled laser will blink on and off for a 1/2 second every four seconds so that you can still see where it is, in case you want to enable it again.*

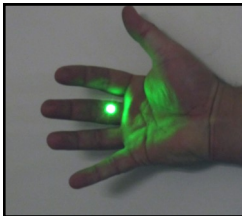
To enable a laser, quickly wave a flashlight or laser-pointer beam back and forth across the laser’s corresponding receiver. The laser turns on solid (no longer blinking) as soon as the receiver sees 16 flashes of light.

MISSION EYES:

To enable or disable (toggle on and off) a Mission Objective Eye or Mission Complete Eye, hold your hand over the Eye for three seconds. Note that at least one Mission Complete Eye needs to be installed and enabled on all levels. The Maze needs to receive a “Mission Complete” signal from the player to know that the game has ended (and to stop the clock). For Co-op play, at least 2 Mission Objectives and 2 Mission Completes must be enabled (one for each player).

OCULAS 3™:

To enable or disable (toggle on or off) an Oculas 3 scanning laser, press the “Mode” button while in *Configuration Mode*. Please note, in order for Oculas 3 to properly enter and exit *Configuration Mode*, you must wait at least 30 seconds after entering *Laser Alignment Mode* BEFORE you can enter *Configuration Mode*. Oculas 3 needs this initial time to calibrate itself. You will know it is safe to enter into *Configuration Mode* if you wait until ALL Oculas 3™ lasers have turned off in *Alignment Mode*. *Oculas 3 is an upgrade feature.



9- IN-MAZE CONFIGURATION



VAULT DOOR



HAND SCANNER

THEMING DEVICES

To enable or disable theme devices, such as the Vault and/or Hand Scanner, wave your hand within a couple of inches over the device for three seconds, just as you would toggle a Mission Eye. *Theming devices are optional accessories.

4. When you are done configuring, exit the Maze and press the blinking skill-level button on the Mission Control Panel the software screen to store the configuration. The four buttons will start blinking, indicating that your setup is stored and you are ready to configure another level. To cancel your configuration (not store any changes you just made), press the Laser Alignment button on the Laser Control Module or press F5 on the keyboard. To configure another skill level (or re-configure the level you just stored), press the skill level button on the Mission Control Panel and go back to Step 3.

10– BUSINESS OPPORTUNITIES AND HELPFUL HINTS

RUNNING CONTESTS

Running contests is an excellent way to generate repeat ticket sales. For example, a mini-prize might be given each night to people who make it into the Top 10. Or you could hold a month-long competition, offering a larger prize giveaway. The Leaderboard screen and Top 10 "look-back" (Window Size) can be customized for the competition. See the Appearance section of your Software Manual for more information. *During a contest period, the Maze configuration should not be changed.



ATTRACTING PLAYERS

If business is slow, an excellent strategy for attracting players is to approach a group of people and offer to allow one person to try the Maze for free. Usually others in the group will then be curious enough to become paying customers. Nights that are typically slow, are a good time to utilize 2 for 1 or similar promotions. Be sure to advertise any promotions you are running in-house and online.

USING SEPARATE DATABASES FOR EVENTS

The database system in the software can be used to create separate databases for events such as birthday parties or corporate team building outings. This allows each group to have their own individual rankings and Top 10 list. See the Appearance and Game Play section of your Software Manual for more information.

USING THE DATABASE TO INCREASE BUSINESS

Information in the database can be used to notify customers of special promotions, events, and offers. It can also be used to notify players of their current standings or loss of rank. Reports can also be generated to show usage statistics. See the Database Admin and Reports section of your Software Manual.

11 – ORDERING CUSTOM LABELS

If a Label Printer is part of the package that you ordered, you will have received 2 rolls of 950 labels (Beat This! Stickers) to get you started. These same labels can be re-ordered from Funovation or you can choose to customize the labels and order them direct from the vendor.

Should you opt to customize the labels, please note the following:

- 1) Do not let your artwork go below the bottom of the “Beat This!” artwork
- 2) Do not let your logo go above the top of the existing Funovation logo.
- 3) When the labels print, they print out of the label printer in a portrait orientation, with the top of the label to the bottom.



- 4) Funovation purchases its labels from Labelvalue.com. They are very familiar with our labels so please do not hesitate to mention our name for ease of ordering.
- 5) If you choose to go with another vendor, the specifications for the labels are:
 - 1.5” x 2.5” Direct Thermal Label for use in a **Zebra LP 2824** printer
 - Choose Direct Thermal face material with permanent adhesive on the back

12– CONTACT INFORMATION

If you have any questions or need further assistance, please contact Funovation at:

Phone:

+1 (303) 996-0294

Sales and Product Support:

info@funovation.com or support@funovation.com

Website:

www.funovation.com

Address:

410 S. Sunset, Unit B
Longmont, CO 80501 USA