



Instruction Manual

Ego 07/08 Marker Board

Geo Marker Board

\\ Features

- All parts of the VICI Electronics Platform were designed from the ground up with expandability in mind.
- Integrated 2.4 GHz wireless transceiver – syncs with all Empire Magna, Prophecy, and LTD loader boards.
- Built in USB connector.
- Bundled with VICI PC software.
- Create custom modes, power management profiles, and fine tune settings.
- Dual trigger switch systems – optical and mechanical microswitches.
- Proprietary multi-tasking algorithms continuously monitor all trigger and eye events to ensure that all pulled shots register and are processed.
- The fastest hardware EVER used in paintball equipment.
- Instantaneous battery status.
- Change modes on the fly with user definable configuration sets.
- Tournament lock feature allows the user to “lock out” the programming mode in order to meet specific field/tournament guidelines.

\\ Installation

WARNING

MAKE SURE THE MARKER IS NOT CONNECTED TO AN AIR SOURCE AND DOES NOT HAVE PAINTBALLS IN THE BREACH DURING INSTALLATION.

- 1) To expose the board. Remove the grip screws using a 2 mm allen wrench. (Illus. #1)
- 2) Unplug the eye and solenoid connectors from the board.
- 3) Remove the mounting screws using a 2mm allen wrench. Then remove the old circuit board. (Illus. #2)
- 4) Making sure the buttons and micro switch align correctly, place the new VICI board into the frame. (Illus. #3)

5) Reinstall the board mounting screws. Plug the eye and solenoid wires back into the VICI board.

6) Install a fresh 9v battery. Make sure the negative (-) terminal (Larger terminal) is closest to the power and eye buttons! (Illus. #3)

7) Pushing from the inside of frame. Pop out the Ego button membrane and replace it with the new HATER button membrane making sure to include the button pad. (Illus. #4, #5 and #6)

8) Replace grips.

9) Power on and play!

\\ Buttons

Eye Button - Controls the Eye operation of the marker. To toggle Eye state (Eyes ON/Eyes OFF), tap the top button. The LED will begin to blink RED about once a second when the eyes are disabled.

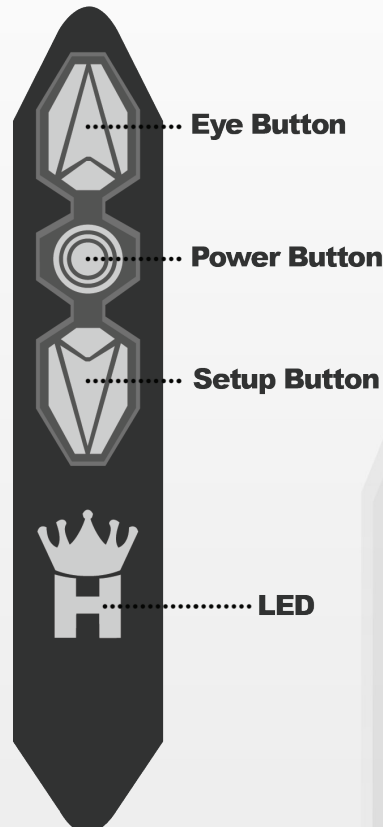
Power Button - Controls the power operation and battery check of the marker. To turn the marker off, press and hold the Power button until the LED turns off. The middle button may also be used to check the battery status by tapping the middle button for ½ second while the gun is powered on. Please remember that holding the middle button in for too long, will power the marker off.

Setup Button - To switch between configuration profiles, press the bottom button for ½ second. When switching to an alternate configuration, the gun will notify the user which configuration has been set by flashing the LED YELLOW. This feature is disabled when the tournament lock is enabled.

\\ Power Operation

Power On

The VICI board comes equipped with an Instant On feature. Press and hold the Power button (middle button) to instantly power the marker on. When initially powered on, the LED will flicker GREEN, YELLOW, or RED. The GREEN indicates a good battery, the YELLOW indicates a low battery, and the RED indicates the battery is extremely low and needs replacement.



Regardless of GREEN/YELLOW/RED battery indication, the marker WILL REGISTER THE FIRST TRIGGER PULL! Please be careful!

Power Off

To turn the marker off, press and hold the Power button until the LED turns off.

\\ Battery Indicator

Instantaneous Battery Status: To check the battery status while the gun is powered on, press the middle button for ½ second. The GREEN indicates a good battery, the YELLOW indicates a low battery, and the RED means the battery is extremely low and needs replacement. Please remember that holding the middle button in for too long will power the marker off.

\\ Eye Operation

When the marker is powered on, the eyes are enabled by default. To disable the eyes press the eye button (top button) on your marker. When the eyes are disabled (blinking red LED), the ROF will default to the global ROF cap.

LED Representation:

- Solid Blue Eyes on, with Paint in breach.
- Blinking Blue eye error. The marker will fire at lower rate of fire.
- Solid Red Eyes on with no paint in breach.
- Blinking Red Eyes are disabled.

\\ Tournament Lock Mode

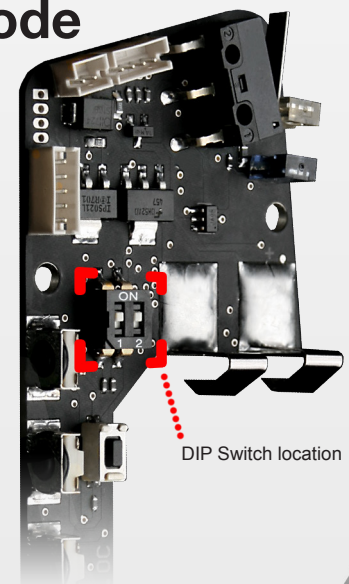
To modify the tournament lock settings, access the DIP switch located on the VICI board by removing the screws on the RIGHT side of the rubber grip using a 2 mm allen wrench. (Illus. #1)

Disabling lock

Set #2 switch to the UP position. This allows for on-gun programming as well as access to board settings via VICI Computer Software.

Enabling lock

Set #2 switch to the DOWN position. This allows board to be locked and disable access to programming via both, on-gun programming and VICI Computer Software programming.



\\ Programming

The VICI Ego board can be programmed via the on-board LED buttons or via USB/PC software.

- LED Control Buttons
- VICI PC Software

Programming via LED Control Buttons

To enter the programming menu ensures the tournament lock is disabled and the marker is powered off.

- 1) Press and hold down the trigger.
- 2) Then press and hold the Power button for 1 second. The LED will flash a rainbow of colors to show the programming menu has been enabled.
- 3) Release the trigger and Power button at the same time.

Programming Controls

- 1) Tapping the trigger will allow the user to toggle through the different programming options.
- 2) Holding the trigger will allow the user to view the current value.
- 3) Pressing the trigger will enable a shortcut which allows the user to directly input a new value.
- 4) Tapping the trigger during the LED feedback sequence will abort this step and skip to the next step.
- 5) Any value set outside of the adjustable range will be overridden by the default value.
- 6) When no input is registered the value will stay the same.

Changing the Settings

- 1) Pulling and releasing the trigger will allow the user to toggle through the different programming options.
- 2) Once the desired setting/LED color is reached, pull and hold the trigger. Upon release, the LED will flash to indicate the current value. No flashes indicate the current value is zero. Tapping the trigger while the LED is blinking back the value will interrupt the feedback and skip to the next programming step.

NOTE: When the desired setting/LED is reached pressing the trigger will skip the LED feedback sequence and move to the next step. This is a shortcut to the programming input sequence.

- 3) Once the LED goes blank, pull the trigger an equal number of times for the desired value. For example, to set the Debounce to 2, pull the trigger two times. Note, if no value is entered, no change will take place.
- 4) After one second of trigger inactivity, the software will indicate that the new value has successfully been entered by blinking the value. Note, tapping the trigger while the LED is blinking the new value will abort the feedback. The gun will then rapidly flash the LED through a rainbow of colors.
- 5) After a setting has been changed, the gun may be powered off, or other settings may be changed.

LED Color	Setting	Default Setting	Adjustable Range
Purple	Fire Mode 1=NPPL 2=PSP 3=NXL 4=Millenium 5=CFOA 6=RAMP	1	1-6
Green	Debounce	5 ms	1-20 ms
Red	Dwell	12 ms	5-20 ms
Blue	Max ROF	20	1-39
Flickering Blue	Max ROF Tenths	10	1=.1 10=0
Teal	AMB	3 ms	1-10 ms
Yellow	Eye Delay	3 ms	1-10 ms
White	Wireless Sync	N/A (address chosen randomly)	0-4,095 (address chosen randomly)
Flickering Purple	ABS	2 ms	1-20 ms
Flickering Green	Ramp Activation	5 bps	5-15 bps
Flickering Red	Ramp Percent	Infinite	1-21 (Infinite, 10, 15, 20,.. 200)
Flickering Teal	Factory Default	N/A	Adjustable Range
Flickering Yellow	Trigger Type	1	1 Mechanical 2 Optical

Firing Modes

1. **Semi Auto/USPL** – 1 trigger pull = 1 shot fired.
2. **PSP Mode** – The first three shots are semi auto. On the 4th shot, the gun will shoot in 3 shot bursts. This burst mode will continue as long as the trigger is being pulled. After one second of trigger inactivity, the semi-auto sequence will restart. The global ROF cap must be set to 10.5 or 12.5 bps to comply with PSP rules.

3. **NXL** – The first three shots are semi auto. On the 4th shot, holding in the trigger will enable the gun shoot full auto until the trigger is released. After a one second delay of trigger inactivity, the semi-auto sequence will restart.

4. **Millennium** – Ramping mode specifically designed for Europe's Millennium Series.

5. **Ramping** – Uses a linear ramping algorithm to increase rates of fire. Customize when marker to starts ramp and how fast the marker will ramp.

The ramp deactivation is always 2 bps lower than the ramp activation.

The ramping is defined as:

Clicks	Ramp Percentage	Clicks	Ramp Percentage
1	Infinite	11	55
2	10	12	60
3	15	13	65
4	20	14	70
5	25	15	75
6	30	16	80
7	35	17	85
8	40	18	90
9	45	19	95
10	50	20	100
		21	200

Details on Changing the Rate of Fire (ROF)

The **MAX ROF** is adjustable from 10.0 to 39.9 bps using the trigger and LED. This is accomplished by entering the value in two steps.

1) Toggle through the programming options until the LED is solid BLUE. This setting will be used to enter the whole number for MAX ROF. For example, suppose MAX ROF of 32.1 is desired, then this value would be set to 32.

2) After entering the integer value of MAX ROF, press the trigger once more to get to the flickering BLUE LED. This setting will be used to enter the fractional values (less than 1) for the MAX ROF. For example, at MAX ROF 32.1, this value would be set to 1.

Programming Examples

To set the firing mode to PSP.

1) With the marker off, ensure that the tournament lock is disabled.

2) Press and hold down the trigger, then press and hold the Power button for 1 second. The LED will flash a rainbow sequence to show Programming mode has been enabled.

3) Release the trigger and Power button at the same time, the LED will illuminate Purple. (Fire Mode)

4) On fire mode (Purple LED) hold the trigger and release it. This will flash the current setting.

5) Once the LED goes dark, tap the trigger 2 times for PSP mode. The LED will then flash back the new setting.

6) Once the LED rainbow flashes. Hold the power button until the markers turns off.

To set the Eye delay time.

1) With the marker off, ensure that the tournament lock is disabled.

2) Press and hold down the trigger, then press and hold the Power button for 1 second. The LED will flash a rainbow sequence to show Programming mode has been enabled.

3) Release the trigger and Power button at the same time, the LED will illuminate Purple. (Fire Mode)

4) Tap the trigger until the LED turns yellow. (Eye Delay Mode)

5) On Eye delay (Yellow LED) hold and release the trigger. This will flash the current setting.

6) Once the LED goes dark, tap the trigger equal to the desired value (Ex. 5 times equals 5 ms). The LED will then flash back the new setting.

7) Once the LED rainbow flashes. Hold the power button until the marker turns off.

Wireless Operation

The hardware on the VICI board was developed with three primary concerns: overall speed, computer synchronization, and wireless expandability. The VICI board comes equipped with a high-performance wireless transceiver which is fully capable of an almost unlimited array of wireless applications.

The VICI board is wirelessly compatible with all Empire Wireless loaders (Magna, Prophecy, LTD) and the VICI loader board. Please note: the VICI board will NOT work with HATER's SYMBIO wireless loader boards.

The VICI board comes pre-loaded with wireless Intelifeed software. To synchronize the VICI board with a wireless loader board:

1) Consult the manual provided by the loader board manufacturer for instructions on how to enter programming mode. Then enter the loader programming menu.

2) Enter the programming menu on the VICI gun board and scroll to the Wireless Sync (white LED).

3) Press and hold the trigger on the gun for one second, then release it. This action will provide a unique wireless ID for the loader board to synchronize with. The loader will may pulse to signify acceptance of the change and then enter normal wireless mode.

Configuration Sets

All VICI boards are capable of using multiple user defined configurations sets. Pressing the setup button allows the VICI board to change between custom programmed configurations on the fly. Configurations sets can only be programmed via the VICI PC software and cannot be accessed while the tournament lock is enabled.

\\ VICI PC Software

One of the most important features of the VICI platform of products is its integrated USB controller. The VICI board can be synchronized with any Windows XP or Vista enabled computer. For full instructions on the VICI PC software, please reference the VICI PC Software manual at <http://www.vicipaintball.com/manuals>.



\\ USB Connection

To program the VICI board via a computer follow these steps:

- 1) Make sure the VICI PC software is installed.
- 2) Launch the VICI PC software.
- 3) Using a 2mm allen wrench remove the RIGHT side grip panel to access the VICI board.
- 4) Make sure Dip Switch 2 is UP. If Dip 2 is DOWN, the board will lock out the USB port.
- 5) Plug one end of the provided USB cable into the VICI board and the other end into an available USB computer slots.
- 6) Press and hold the power button on the VICI installed marker for 1 second, the LED will blink BLUE.
- 7) After 1 second, the LED will become GREEN and VICI board will now be ready to accept new software.
- 8) Press the Setup button from your PC to load new software or access the programming options.
- 9) Exit the Setup or Update program and then unplug the USB cable. You may leave the VICI application running or exit.
- 10) If the USB cable is accidentally removed before exiting the Setup or Update programs, reset the board by pressing the reset button located next to the power button inside the frame. Close the Setup or Update program and then exit the VICI application.

\\ Definitions

ABS – The Anti-Bolt Stick feature increases the dwell of the marker's first shot after a period of inactivity. The ABS feature assists in eliminating first shot drop-off. The higher the ABS, the "harder" the marker's first shot.

AMB – An Anti-Mechanical Bounce feature assists in eliminating mechanical bounce. Mechanical bounce is caused by the marker recoiling. Increasing the AMB will assist in tuning your marker to pass those pesky slow pull tests.

This feature is also only used when the mechanical switch is selected.

Debounce – The VICI debounce algorithm assists in eliminating unwanted shots caused by "trigger noise", while simultaneously ensuring that every pull is read. The value of the debounce setting corresponds exactly to the amount of time the trigger must be depressed to register as a valid pull. If the marker has intermittent or continuous "full auto"

like fire, increase the debounce setting. The debounce setting is only used when the mechanical trigger is selected (the default).

Dwell – The amount of time that the solenoid is “charged.” A dwell that is too low may result in a gun that doesn’t fire, is inconsistent and/or has drop off. If the dwell is set too high, the overall rate of fire will decrease and the marker may become less air efficient. The factory default of 12ms should suffice for almost all Eclipse markers.

Eye Delay – The eye delay is the amount of time the gun will pause after sensing a ball before it will fire. The stock eye delay of 3 ms is a good setting. On most guns, the Eye Delay can be lowered until the user experiences chopping. When using an agitated loader, the eye delay should be set to 5 ms or higher. The higher the eye delay, the slower the marker and less chance of paint breakage.

Factory Default Reset - Resets all options back to their factory settings. Go to Flashing Teal in the programming mode. Once there press the trigger, on release the LED will flash and all setting will be automatically changed back to factory defaults.

Forced Shot – If the eyes are enabled, but the breach is empty, the user may force a shot by holding in the trigger for approximately one second. This feature is useful in the event that a ball has been pushed into the detents and is unreadable by the eyes. A forced shot will clear the breach and load the next paintball as normal.

Max ROF – This feature will cap the markers maximum rate of fire. Some leagues, such as the PSP, require that guns not exceed 10.5 or 12.5 bps. The Max ROF feature is adjustable from 10.0-39.9 bps.

IMPORTANT: We highly recommend leaving your Max ROF at 20 bps or below. Anything higher than this CAN damage the solenoid. Hater Paintball is not responsible for damaged solenoids.

Ramp Activation – This feature adjusts the ramp activation rate of fire for all ramping modes. Ramping will not kick in until this activation point has been reached. A lower ramp activation setting “kicks in” earlier than a higher activation setting.

IMPORTANT: The ramp deactivation always 2 bps less than the ramp activation. Think of the ramp activation as a threshold – it is the speed you must pull and maintain in order for ramping to activate.

Ramp Percentage - This applies to all ramping modes. The higher the setting, the faster your marker will shoot. Ramping percentage is a function of the set Max ROF. For example, having the Ramp Percentage set to 100% and pulling the trigger at 11 bps, the marker will shoot at 22 bps.

Trigger Sensitivity - Trigger sensitivity is the amount of time that the trigger has to be released before the next trigger pull is allowed. In some situations, too low of a value could cause the marker to begin to shoot too quickly.

\\ Illustrations

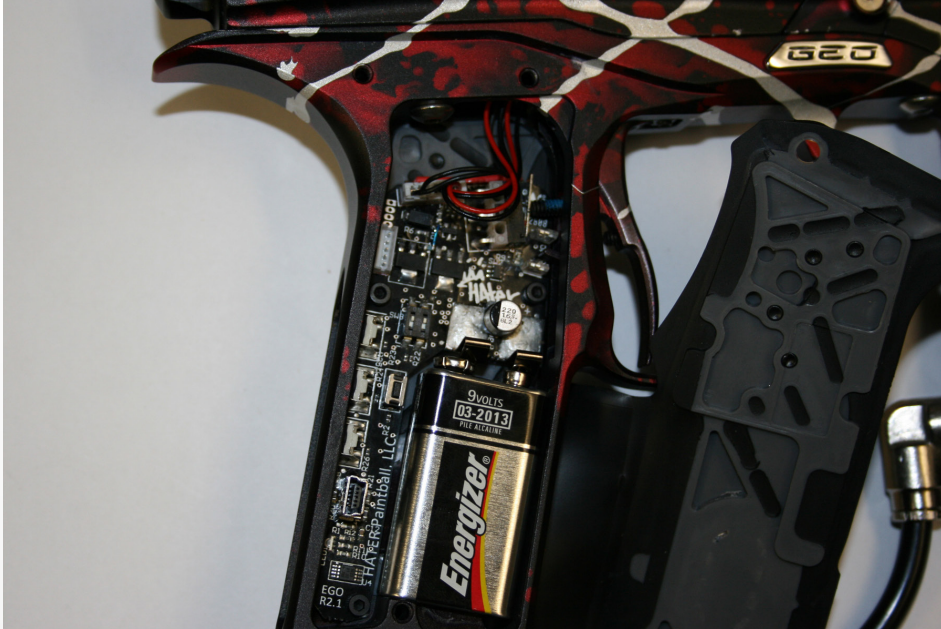
(Illustration #1) Remove the screws that secure the grips by using a 2 mm Allen wrench. This will expose the board.



(Illustration #2) Remove the mounting screws by using a 2 mm Allen wrench and then remove the old circuit board.



(Illustration #3) Carefully place the new VICI board into the frame making sure the buttons and switches are aligned properly before installing the mounting screws and battery.



(Illustration #4) Remove EGO rubber button pad from grip frame.



(Illustration #5) Insert the black plastic button pad back into the grip frame holes.



(Illustration #6) Peel the backing off from the HATER membrane pad and adhere to the grip frame.



\\ Warranty

The VICI gun board is warranted free from any and all manufacturing defects for a period of one year. Warranties are non-transferable.

Problems caused by customer negligence are not covered under warranty. "Negligence" includes, but may not be limited to, using batteries other than a single Alkaline 9V or VICI labeled power pack, breaking components off the board, and other improper usage

\\ Development Information

Developed By:

Hater Paintball LLC
2752 Michigan Avenue. Suite 4
Kissimmee, Florida 34744
United States

P) 317-354-5201
F) 317-203-0719

info@haterpaintball.com
www.haterpaintball.com



\\ Support Information

Tech Support Offered Through:
Paintball Solutions
800.220.3222
tech@paintballsolutions.com
www.paintballsolutions.com

Hater Paintball, LLC

VICI Upgrade Board

FCC ID: W7BKEE58705

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions; v(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Hater Paintball, LLC

VICI Upgrade Board

FCC ID: W7BKEE58705

IC: 8265A-58705

Model: VICI Ego/07/08 - Geo

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This device can only be fitted specifically to the Ego/07/08 - Geo markers.

Covered by or for use with one or more of the following U.S. patents: 5,881,707; 5,967,133; 6,035,843; 6,474,326; 6,637,421 and 7,100,593, marked under license. Patent Pending.