**Features:**

Designed from the ground up for the Bob Long Protégé and Bob Long Marq.

Fully compatible with both the BL 2C and 4C eye systems. The first ever paintball circuit board with a fully integrated wireless transceiver!

Fully compatible with all SYMBIO wireless products. Includes 22 firing modes including fully customizable ramp modes.

Proprietary multi-tasking algorithms continuously monitor all trigger and eye events to ensure that all pulled shots register and are processed.

**TEN TIMES** faster than the top-ranked competitor! This translates to 900,000 more operations per second than anyone else.

Fully adjustable ABS features add to the marker’s dwell to eliminate that pesky first shot drop-off. Anti-mechanical bounce (AMB) algorithms solve the problem of physical switch bounce. No need to worry when the refs pull that old slow trigger pull trick on your gun. A “forced shot” feature allows the user to clear the marker of eye faults. Instant on feature. After all, you wanna play now! Instantaneous battery status.

Tournament lock feature allows the user to “lock out” the programming mode in order to meet specific field/tournament guidelines.

**Installation:**

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

1. Remove the screws that secure the grips. This will expose the board.
2. Unplug the main wiring harness.
3. Unscrew the screws that mount your board in place.
4. Wiggle your old board out.
5. Slide your new HATRED board in. Do not force the board in. It may help to angle the board in microswitch first.
6. Be very careful to not break off the vertical component on the bottom of your HATRED board. This component is very fragile.
7. Plug your main wiring harness into your HATRED board.
8. Attach new battery.
9. Replace grips.

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**Power On:** The HATRED board comes equipped with an Instant On feature. Simply press the power button (top button) and your marker will instantly power on. As long as the power button is depressed, you will see a flickering GREEN or RED led. The GREEN indicates a good battery and the RED means replace the battery as soon as possible. Regardless of GREEN/RED battery indication, your marker WILL REGISTER YOUR FIRST TRIGGER PULL! Please be careful!

**Power Off:** To turn the marker off, press and hold the power button until the LED goes through a rainbow power down sequence. Please note that this particular rainbow LED sequence does NOT indicate that you’re entering the programming menu.

**Programming**

The bottom dip switch must be in the OFF position in order to enter the programming menu. If the bottom dip switch is ON, “tournament lock” will be enabled and the user will be unable to program the marker.

To enter the programming menu, hold the trigger down and THEN turn the marker on. The LED will inform the user that the programming mode has been accessed by flashing several colors rapidly.

<table>
<thead>
<tr>
<th>LED Color</th>
<th>Setting</th>
<th>Default Setting</th>
<th>Adjustable Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purple</td>
<td>Fire Mode</td>
<td>1</td>
<td>1-22</td>
</tr>
<tr>
<td>Green</td>
<td>Debounce</td>
<td>8 ms</td>
<td>1-50 ms</td>
</tr>
<tr>
<td>Red</td>
<td>Dwell</td>
<td>8 ms</td>
<td>5-35 ms</td>
</tr>
<tr>
<td>Blue</td>
<td>Max ROF</td>
<td>20 cps</td>
<td>10-35 cps</td>
</tr>
<tr>
<td>Teal</td>
<td>AMB</td>
<td>1 ms</td>
<td>1-60 ms</td>
</tr>
<tr>
<td>Yellow</td>
<td>Eye Delay</td>
<td>4 ms</td>
<td>1-20 ms</td>
</tr>
<tr>
<td>White</td>
<td>Wireless Address</td>
<td>1</td>
<td>1-32</td>
</tr>
<tr>
<td>Flickering Purple</td>
<td>ABS</td>
<td>10 ms</td>
<td>1-20 ms</td>
</tr>
<tr>
<td>Flickering Green</td>
<td>Ramp Activation</td>
<td>9 bps</td>
<td>6-15 bps</td>
</tr>
<tr>
<td>Flickering Red</td>
<td>Ramp Percent</td>
<td>10%</td>
<td>1-20 (10-200%)</td>
</tr>
<tr>
<td>Flickering Blue</td>
<td>Reset Defaults</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Eye Sensor Operation:**

When the HATRED Board is powered on, the eyes are enabled by default. To disable the eyes, press and hold the button on your marker. ➤When the eyes are disabled (blinking red LED), your ROF will default to the user programmed global ROF cap. ➤When there is an EYE FAULT (blinking blue LED), your ROF will automatically default to 15 bps.

**Eye Sensor: LEDs:**

- **Solid Blue:** Eyes on; Paint in breach.
- **Blinking Blue:** Eyes on with blocked/dirty error.
- **Solid Teal:** Top eye blocked, Bottom eye unblocked.
- **Solid Red:** Eyes on; No paint in breach.
- **Blinking Red:** Eyes disabled.

**Firing Modes:**

(These firing modes correspond exactly to the modes set in the menu.)

1. **Semi Auto/NPPL** – Fire 1 trigger pull = 1 shot fired. The gun will shoot in 3 shot bursts. This burst mode will continue as long as the trigger is being pulled. After a one second delay of trigger inactivity, the 3 shots semi-auto sequence will restart.

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**Programming Examples:**

To set the firing mode to PSP mode:

1. Turn the marker off.
2. Hold the trigger down; then turn the marker on. Once the LED flashes many colors, release the trigger.
3. Tap the trigger until the LED turns purple.
4. Hold down the trigger until the LED goes blank.
5. Tap the trigger 5 times.
6. Once the LED flashes many colors, turn the marker off.

To set the eye delay to 5 ms.

1. Turn the marker off.
2. Hold the trigger down; then turn the marker on. Once the LED flashes many colors, release the trigger.
3. Tap the trigger until the LED turns yellow.
4. Hold down the trigger until the LED goes blank.
5. Tap the trigger 5 times.
6. Once the LED flashes many colors, turn the marker off.

To set the max ROF to 15 bps.

1. Turn the marker off.
2. Make sure the ROF switch (dipswitch 1) is in the ON/UP position.
3. Hold the trigger down; then turn the marker on. Once the LED flashes many colors, release the trigger.
4. Tap the trigger until the LED turns blue.
5. Hold down the trigger until the LED goes blank.
6. Tap the trigger 15 times.
7. Once the LED flashes many colors, turn the marker off.

**Dip Switch Settings:**

<table>
<thead>
<tr>
<th>UP</th>
<th>DOWN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rof Cap On</td>
<td>Tournament Lock</td>
</tr>
<tr>
<td>Rof Cap Off</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

- Please be careful!
- Do not force the board off.
- Eliminate that pesky first shot drop off.
- Fully adjustable ABS features add to the marker’s dwell to eliminate that pesky first shot drop-off. Anti-mechanical bounce (AMB) algorithms solve the problem of physical switch bounce. No need to worry when the refs pull that old slow trigger pull trick on your gun.
- A “forced shot” feature allows the user to clear the marker of eye faults.
- Instant on feature. After all, you wanna play now! Instantaneous battery status.

**Installation:**

**MAKE SURE THE MARKER IS NOT CONNECTED TO AN AIR SOURCE AND DOES NOT HAVE PAINTBALLS IN THE BREACH DURING INSTALLATION!!!!!!**
The faster the SYMBIO loader board will load paintballs, the faster the SYMBIO loader board will load paintballs. Each and every HATRED gun board broadcasts that gun's current rate board:
The HATRED board comes pre just purchased is wholly capable of computer and PDA synchronization, the hardware on the HATRED board was developed with two prime 1.)

Wireless Operation:
The hardware on the HATRED board was developed with two prime concerns: overall speed and wireless expandability. Your HATRED board comes equipped with a high-performance wireless transceiver which is fully capable of an almost unlimited array of wireless applications. The board you just purchased is wholly capable of computer and PDA synchronization, wireless "intellect," and statistical transmission and analyses.

The HATRED board comes pre-loaded with SYMBIO SYNC loader board software. To synchronize your HATRED board with your SYMBIO loader board:

1.) Make sure your SYMBIO is fully powered off. Press and continue to hold the SYMBIO loader board’s button in until the LED flashes white. Release the button; the LED should now be solid white.
2.) Enter the programming menu on your HATRED gun board and scroll to the WIRELESS ADDRESS SELECT (white LED).
3.) Set your HATRED gun board to the desired wireless address. Your SYMBIO will pulse to signify acceptance of the change and then enter normal wireless mode.

Each and every HATRED gun board broadcasts that gun’s current rate of fire with every wireless transmission. Simply, the faster you shoot, the faster the SYMBIO loader board will load paintballs – an industry

 Definitions:
Debounce – The HATRED’s debounce algorithm assists in eliminating unneeded shots caused by "trigger noise," while simultaneously ensuring that every pull is read. If the marker has intermittent or continuous "full auto" like fire, increase the debounce setting.

Dwell – Dwell is 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 8ms should be considered a starting point for setting your dwell. Increase your dwell in 1ms increments until your velocity is no longer affected. For Marq’s and Protégé’s, your dwell should remain in the 6ms-13ms window.

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 4ms is a conservative setting. On most guns, the Eye Delay can be lowered until the user experiences choking. When using an agitated loader, the eye delay should be set to 5ms or higher. The higher the eye delay, the slower the marker on and less chance of paintbreakage.

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 – Anti-Mechanical Bounce feature assists in eliminating mechanical bounce. Mechanical bounce is caused by the marker recoiling.

EXTREMELY IMPORTANT. The AMB software in the HATRED Software Release 3 is different from any other AMB algorithm on the market. The AMB value which the user sets is actually the KICK IN TIME for the placement of an AMB window in the firing cycle. While the user sets the initialization value, the software automatically calculates the correct duration of the window itself. The faster the gun’s firing cycle (as in the faster the bolt travels forward and retracts), the lower the AMB time. 15 ms is an ideal time for Protégé’s whereas 25 ms is an ideal value for Marq’s. If your gun has bounce issues, please increase and decrease your AMB values by 2 ms increments until your AMB window is positioned correctly in your firing cycle and your bounce issues are eliminated. A higher AMB value does not mean the gun will bounce less!

Note: Setting your AMB value to 1 will disable AMB altogether.

Max ROF – This feature allows the user to cap the maximum rate of fire of their marker. Some leagues, such as the PSP, require that guns not exceed 15.4 bps. The Max ROF feature is adjustable from 10-35 bps in 1 bps increments.

Note: Dip switch 1 must be ON for your ROF cap to be enabled.

IMPORTANT: We highly recommend leaving your Max ROF at 20 cps or below. Anything higher than this CAN blow your solenoid. Hater Paintball simply cannot be responsible for damaged solenoids.

Factory Default Reset: To reset all settings back to their factory defaults, go into the programming menu and select the flickering blue LED. Click the trigger once to reset everything back to its factory default value.

Warranty:
The HATRED gun board is warranted free from any and all manufacturing defects or software bugs for a period of one year from the purchase date of the product. 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, breaking components off the board, and other improper usage.

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