Power:

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.

7. Plug in your eye and solenoid wires into the HATRED board.
8. Install fresh 9v battery. Make sure the positive terminal (smaller terminal) is closest to your power and eye buttons!
9. Replace grips.
10. Power on and play!

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.

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<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

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 two 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 top dipswitch (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:

Switch 1 (top)
- ROF Cap ON
- Tournament Lock
- Programming Mode

Switch 2 (bottom)
- Eye Sensor

Eye Sensor Operation:
When the HATRED Board is powered on, the eyes are enabled by default. To disable the eyes, press and hold the eye button on your marker.

LED Representation:
- Solid Blue: Eyes on; Paint in breach.
- Blinking Blue: Eyes on w/ blocked/dirty error.
- Solid Red: Eyes on; No paint in breach.
- Blinking Red: Eyes disabled.

Firing Modes:
(please note the firing mode order on the back of the HATRED box does not correspond to the actual order.)

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. Carefully remove the frame from your marker.
3. Unplug the eye and solenoid connectors from the board.
4. Remove the two mounting screws and then remove the old circuit board.
5. Carefully place the new HATRED board into your frame. Make sure all connections and microswitch align correctly before bolting the HATRED board to your frame.
6. Reattach frame. Be very careful not to pinch any of your eye or solenoid wires between the gun body and circuit board!
1. **Semi Auto/NPPL** – 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 a one second delay of trigger inactivity, the 3 shots semi-auto sequence will restart.
   ➤ The global ROF cap must be set to 13 to cap the marker at 13.33 bps to comply with PSP rules.
3. **NXL** – The first three shots are semi auto. On the 4th shot, the user may hold in the trigger and the gun will shoot in full auto until the trigger is released. After a one second delay of trigger inactivity, the 3 shots semi-auto sequence will restart.
   ➤ The global ROF cap must be set to 13 to cap the marker at 13.33 bps to comply with NXL rules.
4. **Millennium** – Ramp mode specifically designed for Europe’s Millennium Series.
5. **Ramping** – Uses a linear ramping algorithm to increase your rate of fire. You can choose when you want your marker to start ramping and how fast your marker will ramp.
   ➤ The ramp deactivation is always 2 bps lower than the ramp activation.
   ➤ Each ‘programming click’ corresponds to a 10% increase in ramping speed. Eg: 1 click = 10%, 10 clicks = 100%, 20 clicks = 200%
   ➤ The ramping percentage and ramp activation settings in the programming menu are GLOBAL settings. Any other firing mode which has a ramping subroutine will use the ramp activation and percentages as dictated by the programming menu.
6. **PSP Style Ramping** – The first three pulls are semi auto. On the 4th shot, the marker will fire in Auto Response mode. After a one second delay of trigger inactivity, the three shot semi-auto will restart.
7. **PSP Style Auto Response** – The first three pulls are semi auto. On the 4th shot, the marker will fire in Auto Response mode. After a one second delay of trigger inactivity, the three shot semi-auto will restart.
8. **Semi/Ramping Transition** – The first three shots are semi auto; the marker then converts to ramping mode.
9. **Ramping/Semi Transition** – For the first 300 pulls, the marker will be in ramping mode; after the 300th pull, the marker will convert to semi auto.
10. **Musket Ball Mode** – This is essentially a dwell ramp mode. The user must hold in the trigger to “charge” their marker. The gun actually fires on the trigger release. When the trigger is first pulled and held down, the software will start at the user set dwell (8 ms default) minus 10 ms. Over the course of five seconds, the software will add 2 ms of dwell up to the user set dwell for every second the trigger is continually depressed. After 5 seconds, the marker will be fully charged.
   ➤ If the user just pulls the trigger and immediately releases, the paintball probably won’t make it out of the barrel; if the user holds the trigger for 3 seconds, the velocity of the paintball will be extremely low, etc.

**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 communicating from computer and PDA synchronisation, wireless ‘intellifeeds,’ 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 first. The ROF transmissions allow your loader to infer EXACTLY how fast your marker is shooting and load paintballs accordingly. Your SYMBIO will never starve your marker and simultaneously will never overfeed and smash brittle paint.

The REVISION 2 HATRED gun board will send a wireless LOAD command on every shot fired – and on every trigger pull. If your eyes are on with no paint in the breech and you pull the trigger, the HATRED will assume you are trying to fill up the feedstack and will send a wireless LOAD command in an attempt to do so. This feature enables you run your loader dry and then refill without starving your marker.

**Deformations:**

**Debounce** – The HATRED’s debounce algorithm assists in eliminating unwanted shots caused by “trigger bounce” 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 18ms should suffice for almost all DYE 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 4 ms is a conservative 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.

**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.

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

**EXTREMELY IMPORTANT** – The AMBER software on the HATRED Software Release 3 is different from any other AMBER algorithm on the market. The AMBER value which the user sets is actually the KICK IN TIME for the placement of a AMBER window in the firing cycle. While the user sets the initiation value, the software automatically calculates the correct duration of the window itself. The faster your gun’s firing cycle, the lower the AMBER time. 25 ms is an ideal time for most DYE and Proto markers. If your gun has bounce issues, please increase and decrease your AMBER values by 2 ms increments until your AMBER window is positioned correctly in your firing cycle and your bounce issues are eliminated. A higher AMBER value does not mean the gun will bounce.

**Note:** Setting your AMBER value to 1 will disable AMBER 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.

**Ramp Deactivation** – This feature sets your ramp activation for all ramping modes. Your ramping will not kick in until this activation point has been reached. A lower ramp activation “kicks in” easier than a high activation.

**Ramp Percentage** – This feature sets your ramping algorithm to ramp faster or slower. The first three pulls are semi auto. On the 4th pull, the marker may become less air efficient. When using an agitated loader, the eye delay should be raised.

**Tech Support Offered Through**

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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.

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

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

**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 unreadable by the eyes. A forced shot will clear the breach and load the next paintball as normal.

**Ramp Activation** – This feature sets your ramp activation for all ramping modes. Your ramping will not kick in until this activation point has been reached. A lower ramp activation “kicks in” easier than a high activation.

**Ramp Percentage** – This feature applies to all ramping modes and tells your gun how fast to ramp. The higher the setting, the faster your marker will shoot.

**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.

**Technical Support:**

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