

DX5 Pro Launch Control Instructions And Tuning Tips



Overview

Available on DX5R and DX5 Pro Transmitters with firmware version 2.02.05 or higher is the option to setup a Launch Control. This mode allows the driver to control the duration of time it takes to reach full throttle as well as adjusting points in the throttles curve to effectively ramp the throttle to the user's preference.

When the Launch Control Mode is used, the driver can press or hold the "Start" button or trimmer for activation, once the Start button is released, the Transmitter will operate the throttle in a pre-programmed throttle duration and curve. Applying different levels of throttle over the pre-programmed time span. Used as a tuning aid in addition to motor, speed control and chassis settings, Launch Control can help to give a decisive advantage off the starting line.

Please Note: No one setting is perfect for all chassis, power, and track conditions. Like any other tuning aid. Please take your time to test and research how these settings can help you. Keep in mind that as conditions change, the Launch control may need to be adjusted for maximum effectiveness.

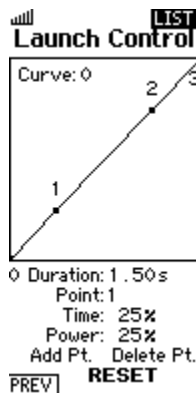
Setup Instructions

Launch Control consists of three screens:

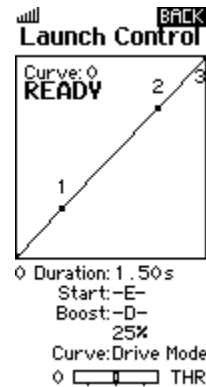
- The top-level switch selector screen
- The curve and duration editor
- The Launch Control status screen



A – Switch Selector



B- Curve and Duration Editor



C – Status Screen

The Launch Control Switch Selector Screen is accessed by selecting the Launch Control Option in the Function List.



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Start Option

"Start" is a pushbutton/trimmer that will be used to do the start and restart the Launch Control operation. There are two common ways to use the Start button/trimmer; (1) It can be used as your "hand brake". Press and hold the assigned button/trimmer to disable the throttle channel, once the button is release, throttle will operate and output along the curve and duration you assign. Once setup, we suggest holding the button, pulling full throttle, then once you release the button, launch control will take over, ramping throttle output along the assigned curve and duration. (2) The Start button/trimmer will start the Launch Control operation with a simple tap of the button, at that point it is waiting for your Throttle input. Once the race starts, pull the throttle trigger to begin the run. Once the operation is complete, throttle will work as normal with your throttle trigger position. Simply press or hold your start button to restart Launch Control operation.

Launch Control
LOSI DRAG

Start: -E-
Boost: -0-
25%
Curve: Drive Mode
Active: 0
Jump: Active
Alert: Vibe

RESET
ALL

Boost Option

"Boost" is a pushbutton/trimmer which, when pressed, adds a percentage of throttle to the output. Effectively boosting your throttle output between 0-25%. The percent shown below it is the percentage of throttle boost that is added when the button is pressed and held.

NEXT

Curve Option

"Curve" is an optional toggling input (not momentary) that allows the selection of a different Launch Control curve (each start curve is an individual sequence) per switch position. It may be configured by the user to as many positions as the switch supports, but it defaults to 2 positions. When set to Inhibit, the curve selected for execution is the curve specified in the Active field. If a switch is configured, then Active cannot be edited manually, but shall be displayed as the current position value of the Curve switch.

Alert Option

"Alert" is used to present the user with a tone or vibration that alerts the user when the Launch Control operation is active.

Jump Option

"Jump" controls whether the display will automatically jump to the Launch Control Status screen when the selected Start button is pressed. When active, pressing the Start button will immediately redirect to the Launch Control Status screen. When inhibited, you can only access the Launch screen by scrolling to it via the dashboard screen, as you would to scroll to different telemetry screens. The jump action is inactive whenever RF is disabled.

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Reset All Option

"RESET ALL" causes the entire Launch Control system to be reset to default values, including all the sequencer fields.

"NEXT" jumps to the curve and duration editor.

Launch Control Curve and Duration Editing Screen

The Curve and Duration editing screen displays the currently selected curve (noted in top left corner of graph) and the points that are defined in the curve. Note that there are at least three points and no more than 7, numbered 0 through 7. Points 0 and 7 are never editable and always correspond to the bottom left and top right corners. Points in between may be moved left, right, up, or down in 1% increments. If three points are defined, for example, they are numbered 0, 1, and 2 with points 0 and two being in the corners. A straight line connects adjacent points of the curve, which is only composed of line segments (never smoothed).

Duration Option

"Duration" is the time that it takes the throttle to run from end to end (horizontally from the left on the graph) when Launch Control is active. The units are from 0.02s to 5.00s in 0.01s increments.

Point Option

"Point" allows the user to select which point to edit. The point may be moved horizontally using the "Time" prompt, or vertically using the "Power" prompt. Both Time and Power are 1% increments on the display. Time and Power will change the position of the selected point on the curve.

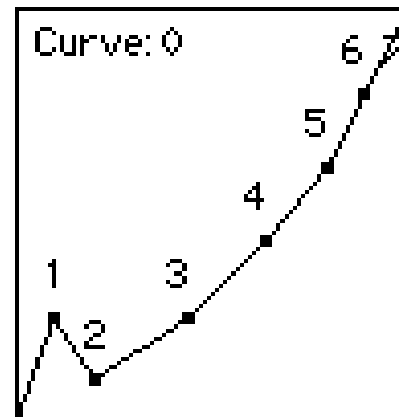
Add/Delete Pt Option

"Add Pt" and "Delete Pt" are used to add or remove points on the curve. When "Add Pt" is selected, the user specifies the line segment where it should be inserted (0-1, 1-2, 2-3, etc.) and the insertion is done midway between the two adjacent points and on the line. Note that you cannot add a point between two points already only 1% apart, as that would break the 1% increment rule. The launch control curve data is shifted right to make room for the new point, and the new point is inserted.

When "Delete Pt" is selected, the user selects the point to remove and the data in the sequencer is shifted left to remove it, and the last point is verified to be locked at 100% power, 100% time. The active steps in the curve is decremented to reflect the deletion.

"RESET" will change only the current curve to default values for the duration and curve points.

Launch Control LIST



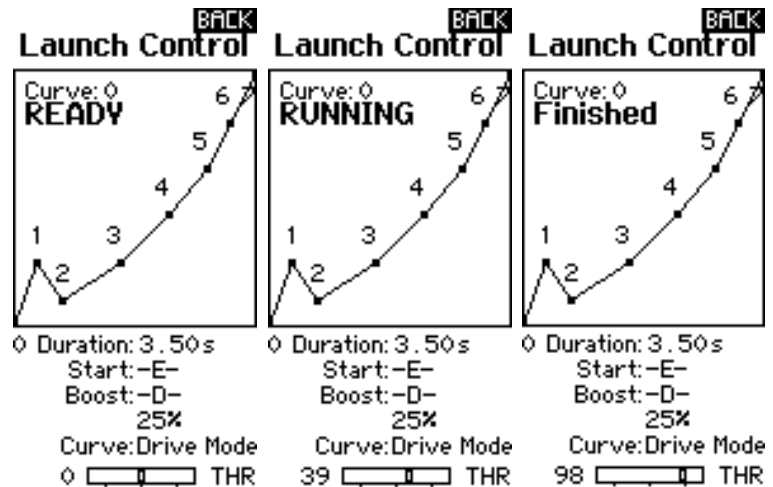
Curve: 0
○ Duration: 3.50s
Point: 1
Time: 10%
Power: 25%
Add Pt. Delete Pt.
PREV **RESET**

Launch Control Status Screen

The Launch Control Status Screen shows the same graph as shown in the Curve and Duration editor but adds a line of text showing the status of the Launch Control operation. This shows "READY" or "RUNNING" or "Finished" depending upon the status.

This screen is accessed by going to the main screen and scrolling down and then back up, as if you were scrolling thru telemetry display screens.

This screen provides the user with the current selected Launch Control Curve, the selected Start Button/Trimmer, the selected button/trimmer used for the Boost feature, as well as the current output throttle %.



Launch Control Setup and Tuning Tips for Drag Racing

Start: set to any available switch that is easily accessible. We suggest "E" as it's easy to access at the line. This is the button under the wheel. An easy way to select the switch is to choose the option and press the button/trimmer on your transmitter to automatically change it to the switch of your choice.

Boost: Up to the individual user's preference. It is tricky to set it correctly and use it during the short runs that drag racing has but it may be helpful in longer strips or slower models. Like the start switch, use a button/trimmer that is easy to reach.

Curve: set to Drive Mode to allow for up to 5 programmable throttle curves. Assign Drive Mode to an open switch in the Drive Mode menu and select how many drive modes you would like to use, before proceeding to assign it in the Launch Control menu. We use the "I" switch next to the knob as it's easy to toggle at the line and it is not easy to accidentally change.

Alert: This lets the driver know Launch Control is active without looking at the screen. We suggest the Vibe option to prevent any noise distractions when watching the Drag Race Tree.

Curve programming: This will require testing by the end user. We suggest using all available points in the curve as this allows for smoother response. Timing and Power of each point will be determined by making test runs. With "sensorless" systems it helps to have higher power settings at the start of the curve (above linear, depicted in the screen shots above) to help eliminate/reduce cogging off the line. The remainder of the curve is then set for maximum acceleration through the rest of the distance without wheelspin.

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Duration: longer duration makes the car 'feel' and run slower as it takes longer to transit the programmed curve. This is helpful on low traction surfaces like dusty parking lots and streets. Shorter duration is ideal for high traction surfaces to allow maximum acceleration.

Low traction duration – 1.2-1.5s suggested

High traction duration - .5-.9s suggested

- Final notes –

Launch Control must be activated before every run down the track so remember to hit the Start switch before every run. The fastest starts are achieved by holding down your Start button, holding Full Throttle on your Throttle Trigger, and once the race starts, release the Start button and continue to hold full throttle until you reach the finish line or if the run needs to be aborted. This method can help reduce the latency between your eyes and the start tree, but it also allows for less margin of error so it may not work for you if you need to apply steering to keep straight.

Pulling the throttle slowly will result in the car accelerating as programmed until it reaches the Duration setting, then it drops to wherever the trigger is held. This can cause the car to slow down halfway down the track or just before the finish line. Once the throttle trigger is returned to center OR the duration of the Launch Control duration is completed, launch control is deactivated until the assigned Start button is press again.

We hope these instructions have been helpful and look forward to seeing you at the drag strip!

Happy Racing!

~Spektrum RC