

Riding modes

The four SV controller modes: how they differ, how you switch them, and when the wheel lifts the pedals on its own. Firmware and controller by Alexander Smirnov (@Alexovik).

There is one button on the shell and no other controls. It cycles through four modes, each with algorithms baked into the firmware. The power stage is shared across all of them: 48 FET, 400 A. Official labels are letters (S / H / C / EXC).

MODE	PEDAL RESPONSE	USE
S SOFT	Soft, gentle delivery	Track and drag with a more forgiving feel. Handy while you get used to the wheel.
H HARD	Stiff, maximally locked-in; pedals hold the horizon with no sag	Track and drag at high speed. Switch to it once you ride confidently in a straight line.
C CROSS	Tuned for dirt and rough ground	Offroad, forest, gravel.
EXC EUC X CAMP	Always holds the pedal horizon	Flips, skatepark, euc-x-camp. For trained riders only.

Mode EXC

Added in December 2025 for backflips and frontflips. It raises the current ceiling (up to 300 A peak), enables the flip button, and the app setting sliders are active only in this mode. Do spins here: the horizon does not drift, so the wheel stays predictable in the air.

Why the pedals are stiff

The 40PL cells hold voltage under load without sag, so the wheel keeps the horizon flat. After softer wheels it feels like SV lifts the pedals slightly, when really it just does not sag. One mode is deliberately soft (a "spring") for aggressive acceleration; the middle one is the stiffest in the range.

How to select a mode

Modes switch with the power button, including on the move. The wheel confirms the current mode with beeps – for example, three beeps for the super-soft mode.

The developer never published a single "button number → letter" table, and the community worked out the lineup by testing. Confirm the exact mapping on your firmware in the app or with @Alexovik rather than trusting memory.

Pedal lift and safeguards

Pedal lift (tiltback) is how the wheel says "no further." Physically it feels like a jolt: from the motor's point of view it is a brief acceleration, and only as a result does the shell tilt back.

On charge, pedal lift is set at a calculated 3.0 V per cell. At a low charge percentage the wheel starts lifting the pedals noticeably in advance, leaving room to step off.

The second trigger is PWM: near the power limit the wheel beeps, and if the lower charge threshold is close at the same time, the pedal lift gets stronger.

Important about free spin

In the air, with no load, the wheel does not shut off. On a lifted wheel (free spin) the pedals will rise under throttle and the motor will spin up to high rpm. Before checking free spin, hold the wheel and bring it back to zero by hand.

→ How the wheel works: controller, battery, motor, charging

SOURCE

Compiled from the official @sv_euc channel and the @fc_sv fan club, including answers from the developer @Alexovik. This is a rider reference, not a factory manual. Confirm disputed details (exact mode numbering) with the developer.