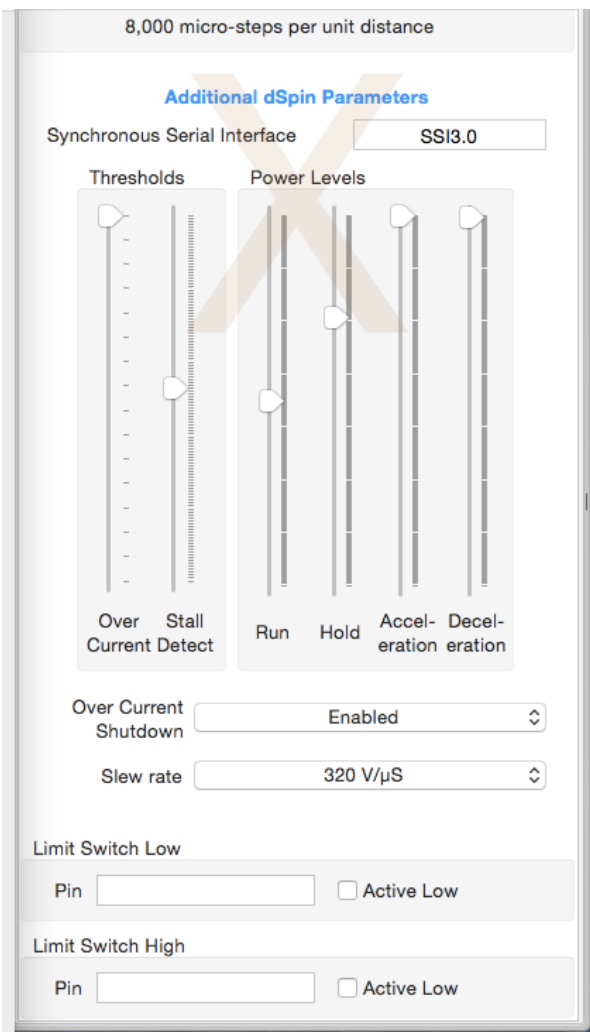


ST dSpin Setup

Note: With the recent release of the higher power and lower cost L6474 nicknamed the "PowerSpin01", the ST Microelectronics L6470 (dSpin) may be obsolete. RiceMotion will evaluate the L6474 for future support.

The ST microelectronics L6470 (dSpin) dual full H-bridge stepper driver IC integrates a micro-controller using SPI to communicate with the MCU. The chips directly drive low to medium powered bi-polar steppers with 1/128 micro-stepping accuracy. They will auto-switch to full step mode, both phases on, above a set speed threshold to increase maximum RPM.

The dSpin technology chips implement acceleration, deceleration and maximum speed parameters enabling them to respond to a RUN command. Although the MCU is relieved of step pulse generation, the MCU must monitor the motor progress for coordinated motion. This requires nearly as much processing time as the pulse generation.



If the selected interface type is dSpin, then additional parameters will appear as illustrated. The ST Microelectronics integrated motor drivers have a very flexible configuration via a Synchronous Serial Interface (SSI).

The dSpin drivers enable the applied motor voltage to be different for acceleration and deceleration. Due to the firmware algorithm used to coordinate motors by varying the speed, a fast deceleration will reduce off-tracking and increase accuracy. You may want to specify a high power level for deceleration and a lower level at other times to not overheat the motor.

It seems that not all advertised dSpin functionality is working properly in the current L6470 production chips. Only the default slew rate setting is available and the stall detection may work at all settings.