

# STSPIN™ Discovery

## Smoothness and precision was never so easy



## Comprehensive set of tools for exploring the extreme smoothness and precision of L6470/L6472 stepper motor drivers

STSPIN Discovery kits are ideal for both beginners and experienced users. Each kit includes a standalone evaluation board that can be used with a software interface or with a custom firmware thanks to the embedded STM32F1 microcontroller with its ARM® Cortex®-M3 core. The user-friendly GUI supplied with the evaluation software (STSW-SPIN002) makes it easy for the user to fully configure and evaluate application parameters. These plug-and-play tools offer high motor control flexibility thanks to their wide operating voltage range from 8 V to 45 V and current capability up to 3 A<sub>RMS</sub>. Each board is equipped with LED indicators for specific ready, busy, and error warnings.

### KEY FEATURES

- Plug-and-play solution embedding L6470 or L6472 stepper motor driver and STM32F1 MCU
- Compatible with SPIN family evaluation software
- Firmware library available
- Wide voltage range from 8 V to 45 V
- High phase current up to 3 A<sub>RMS</sub>
- Footprint optimized for external resonator or crystal
- Switch motor input control
- 3 push-button switches: start/left, stop/right and reset
- Ready, busy and error LED indicators

### KEY APPLICATIONS

- Two-phase bipolar stepper motors with microstepping
- Vending machines
- Automatic teller machines (ATM)
- Security cameras
- Stage lighting
- Office automation
- Antenna positioning
- Textile equipment
- Industrial automation



## DISCOVER STSPIN

Designing stepper motor applications becomes much easier using STSPIN Discovery kits to take advantage of the outstanding performance of ST's L6470 and L6472 stepper motor drivers.

The embedded motion engine allows the user to set a variety of application parameters, such as target speed, acceleration/deceleration, absolute and relative position by just using an SPI interface and without the need for an external MCU or DSP.

The STSPIN L6470 implements an innovative voltage mode with up to 128 microsteps that enables unprecedented smoothness in motion. The STSPIN L6472 uses an ST patented advanced current control technique that provides a cost-effective solution offering resolution of up to 16 microsteps while reducing the current ripple through auto-adaptive decay, eliminating the need for shunt resistors to sense the phase currents.

A rich set of protection features (thermal, low bus voltage, overcurrent and motor stall) allows the design of fully protected applications, as required by the most demanding motor control applications.

## QUICK START GUIDE

- 1 Download and install the "SPIN family" evaluation software (Ref: STSW-SPIN002) from: <http://www.st.com/stspin>
- 2 Connect the STSPIN Discovery board with a supply voltage between 8 and 45 V.
- 3 Connect the STSPIN Discovery board to your PC via USB cable.
- 4 The LEDs will start blinking in sequence.
- 5 Run the SPIN family evaluation software to exploit the power of STSPIN.
- 6 Enjoy!

System requirements:

- Windows® PC (XP, Vista, 7)
- USB type A to mini-B cable

## HARDWARE

Order code	Description	Driving mode	Resolution
EVAL6470H-DISC	STSPIN- L6470 Discovery	Voltage mode driving	Up to 1/128 microsteps
EVAL6472H-DISC	STSPIN- L6472 Discovery	ST patented innovative current mode	Up to 1/16 microsteps

## SOFTWARE

Order code	Description
STSW-SPIN002	STSPIN family evaluation software
STSW-SPIN004	Firmware library for L6470\72 Discovery board



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