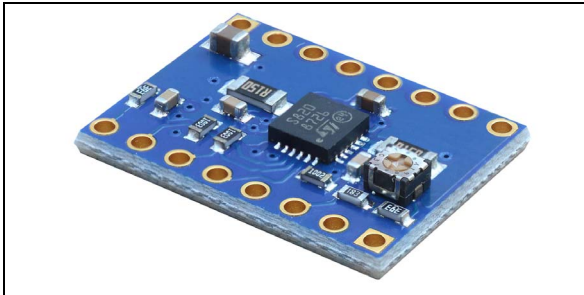


Compact evaluation board for STSPIN820 stepper motor driver

Data brief

**Features**

- Operating voltage: 7 V to 45 V
- Continuous current up to 1.5 A per phase
- Maximum current up to 2.5 A per phase
- Integrated low $R_{DS(ON)}$ power stages (HS + LS = 1 Ω typ.)
- Microstep resolution easily settable through jumpers: full-step, 1/2, 1/4, 1/8, 1/16, 1/32, 1/128 and 1/256 of step
- Simple step and direction control interface
- Adjustable current control through a potentiometer to set the ref. voltages
- Embedded PWM current control with selectable decay mode (fast or slow)
- Full set of embedded protections
 - Non-dissipative overcurrent
 - Undervoltage lockout
 - Thermal shutdown
 - Short-circuit
- Compatible with RAMPS and similar open source solutions for FFF 3D printers
- Very compact footprint: 15 x 20 mm

Applications

- 3D printers
- Medical equipment
- Textile and sewing machines

- CCTV, security and dome cameras
- Robotics
- ATM and cash handling machines
- Office and home automation
- POS

Description

The EVALSP820-XS is a compact and easy to use evaluation board for the STSPIN820, the world's smallest 45 V microstepping motor driver rated at 2.5 A.

It provides a very compact solution to evaluate the performance of the STSPIN820 stepper motor driver with a minimum set of additional equipment and without the need of additional devices.

The hardware is fully compatible to be used together with RAMPS or other similar FFF 3D printing platforms, representing a very fast drop-in replacement of similar solutions. Contrary to most other competitors solutions, the EVALSP820-XS helps customers to really exploit the benefits of working at high microstepping resolution.

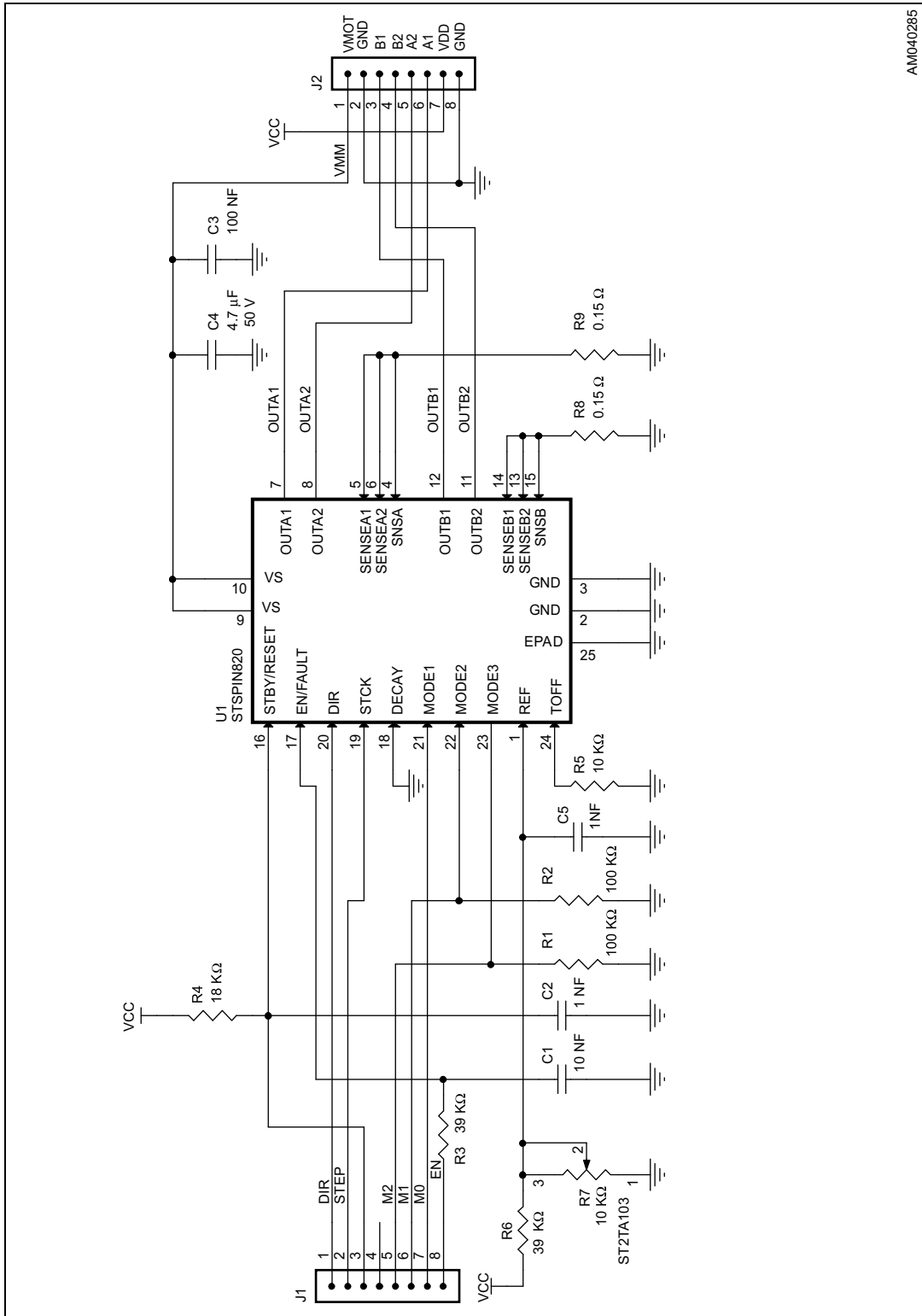
The microstepping resolution can be easily set to one of eight available values through M1, M2 and M3 inputs: full-step, 1/2, 1/4, 1/8, 1/16, 1/32, 1/128 and 1/256 of step.

It is simply controlled through step and direction ports and embeds the PWM current control algorithm with selectable decay mode (fast + slow or slow) and the adjustable reference voltage level through an embedded potentiometer.

The STSPIN820 features a full set of protections making it a bullet proof device for a wide range of industrial applications.

Schematic

Figure 1. Board schematic



AMD040285



Revision history

Table 1. Document revision history

Date	Revision	Changes
17-Jan-2018	1	Initial release.