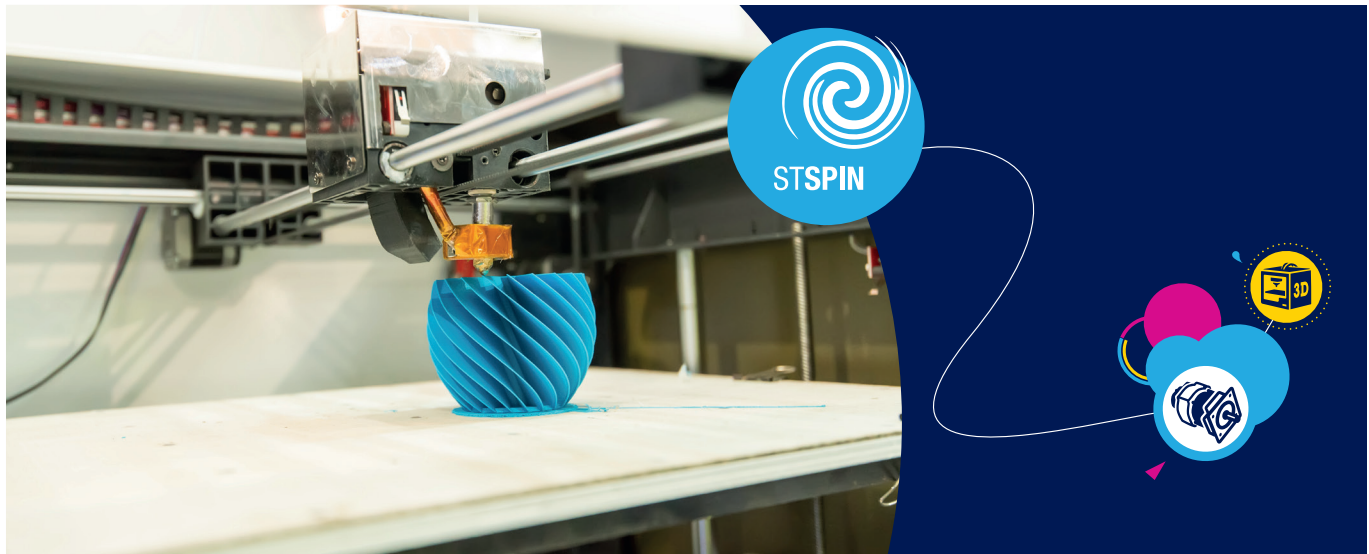


STEVAL-3DP001V1

Plug-n-play solution for 3D printers



From rapid prototyping to digital manufacturing using ST's reference design based on L6474 STSPIN motor drivers

The STEVAL-3DP001V1 is a reference design for 3D printers based 100% on ST's bill of materials and represents an easy-to-use solution to jump start driving your 3D printers. Thanks to new thermoplastic materials and printing architectures, fused filament fabrication (FFF) – the most diffused 3D printing technology is progressively pervading many sectors.

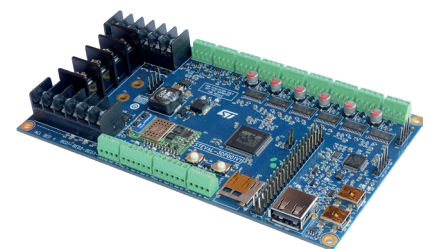
To keep up with this innovation race, FFF 3D printers are required to be intuitive, silent and fast, support multiple extruders, remotely controllable and support multi-zoned heated beds for large printing surfaces. The STEVAL-3DP001V1 fulfills all these requirements.

KEY FEATURES & BENEFITS

- Adaptable to any 3D printer mechanics
- Based on open-source Marlin firmware running on STM32
- Driving up to 6 axes (3 extruders) with programmable motor currents via firmware
- Controllable by portable devices thanks to embedded Wi-Fi module
- Controlling up to 3 hot ends and 3 fans
- Supports up to 3 heated beds
- Easy firmware customization thanks to embedded debugging tool and OpenSTM32 environment
- USB and microSD peripheral support

KEY APPLICATIONS

Fused filament fabrication (FFF) 3D printers used by professionals and hobbyists for: education and industrial prototyping.



PLUG AND PRINT 3D

The STEVAL-3DP001V1 is a complete and plug-n-play solution based on an STM32 microcontroller (32-bit ARM® Cortex®-M4 core) running the open-source Marlin firmware.

The prints can be performed via the UART, microSD or Wi-Fi interfaces.

The STEVAL-3DP001V1 supports up to 3 extruders with its low-noise and high-precision L6474 motor drivers, each programmable to deliver up to 3 A. The board is able to control up to 3 hot

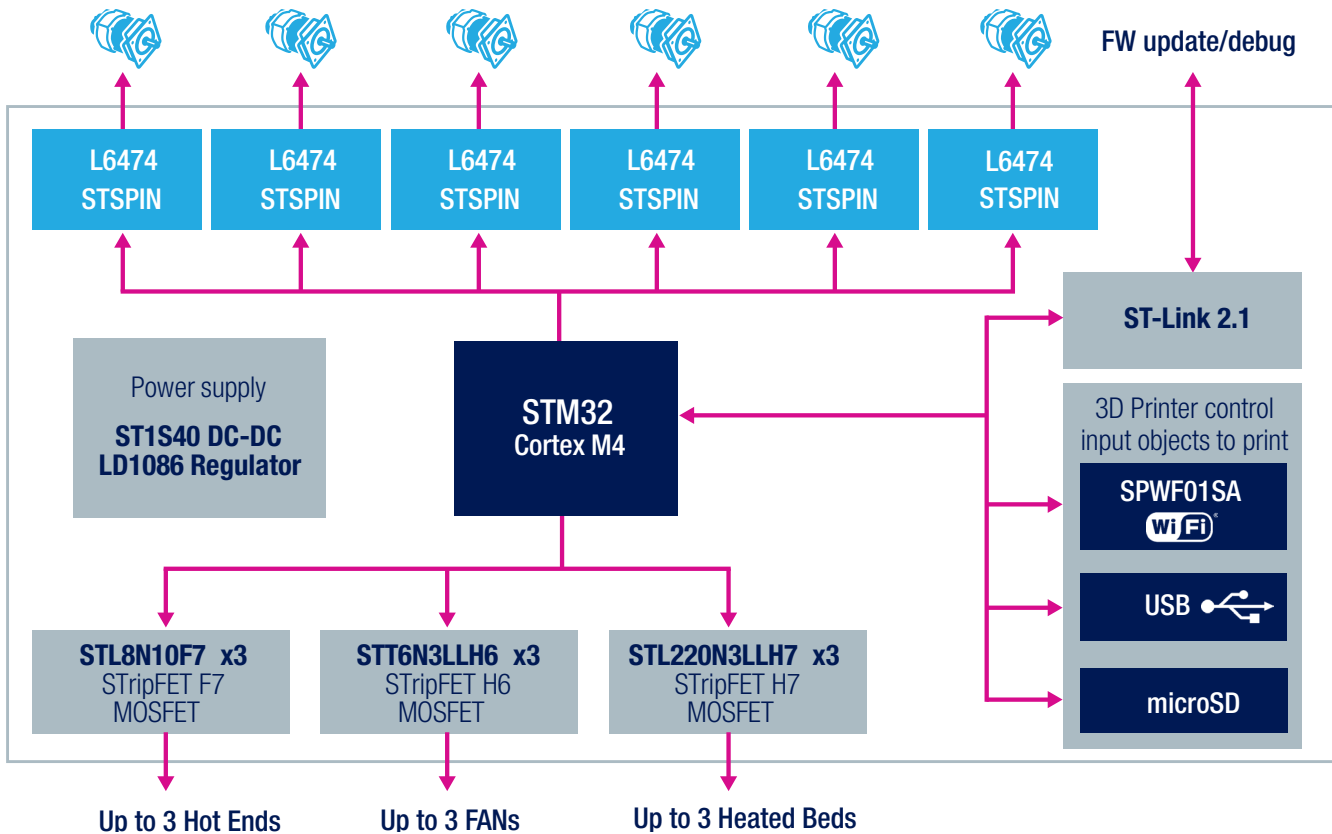
ends and 3 fans thanks to 6 embedded low RDS(on) MOSFETs and provides 3 additional high-current (32 A) heater drivers, fitting the need for temperature-controlled multi-zone heated beds. The STEVAL-3DP001V1 features integrated Wi-Fi connectivity, enabling the user to drive a 3D printer using a smartphone or tablet.

For each of the six axes, a digital end stop input is provided allowing the use of positioning sensors; up to two per X, Y and Z axis if necessary. Mechanical, optical or

magnetic sensors are supported and the board can also power them.

Moreover, the board includes a complete debugging solution (STLINK-V2), a tool appreciated by developers. The STEVAL-3DP001V1 allows connections to another board, for example the Raspberry Pi, offering features including a user-friendly web interface, easy firmware upgrades or controlling the printing progress using a camera.

MAIN BLOCKS



PRODUCT TABLE

Order code	Description	Core Products
STEVAL-3DP001V1	3D printer reference design	STM32 microcontroller; L6474 STSPIN monolithic motor driver; STL8N10F7 and STL220N3LLH7 STripFET™ MOSFETs, SPWF01SA Serial-to-Wi-Fi modules ST1S40 DC-DC and LD1086 power management devices



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