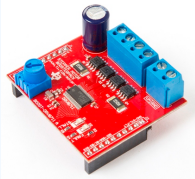


BoosterPack Ecosystem



**DRV8301 Motor Driver
BoosterPack**
- Spin Any Three Phase Motor!
- 6-24V Supply Input
- 10A Continuous/14A Peak
Only \$49



**DRV8711 Stepper Motor
Driver BoosterPack**
- Design your own CNC or 3D
printer!
- 8-52V Supply input
- 4.5A Continuous/15A Peak
Only \$25

>> See them all @ ti.com/boosterpacks

Software Tools



Energia
A simple open-source &
community-driven code
editor.

Easy-to-use functions for
blinking LEDs, buzzing
buzzers & sensing sensors.
>> www.energia.nu

Professional Software tools

LaunchPad is also supported by professional
IDEs that provide industrial-grade features
and full debug-capability. Set breakpoints,
watch variables & more with LaunchPad.

www.ti.com/ccs



Code Composer Studio™ IDE

www.ti.com/motorware



MotorWare™ Solution
Software

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Resources

ti.com/launchpad

Code examples
Open Source Design Files
Documentation
Example projects
Videos
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Other TI products

Meet the
TMS320F28069M

LaunchPad Development Kit

Part Number: LAUNCHXL-F28069M



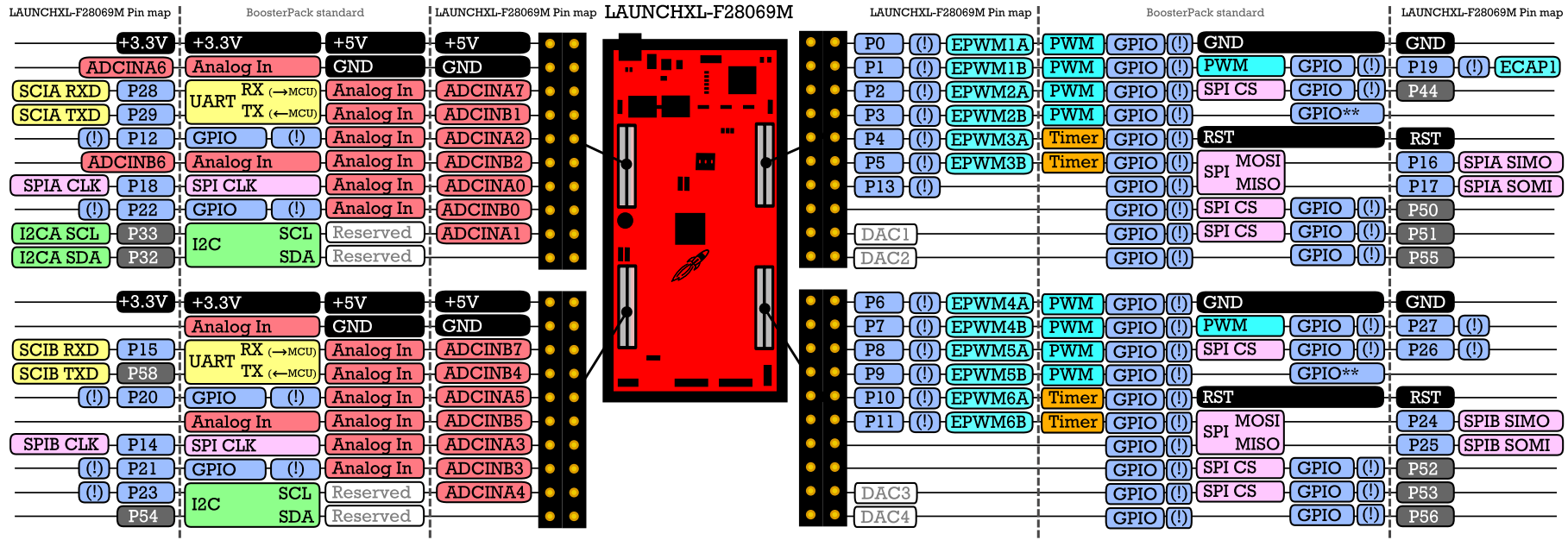
Below are the pins exposed @ the BoosterPack connector.

Also shown are functions that map with the BoosterPack standard.

* Note that to comply with the I2C channels of the BoosterPack standard, a software-emulated I2C must be used.

** Some LaunchPads do not 100% comply with the standard, please check your LaunchPad to ensure compatibility

(!) Denotes I/O pins that are interrupt-capable.



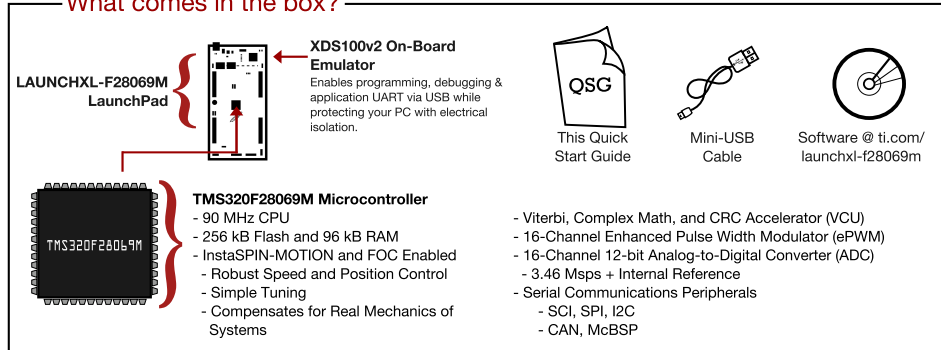
A closer look at your new LaunchPad Development Kit

Featured microcontroller: TMS320F28069M

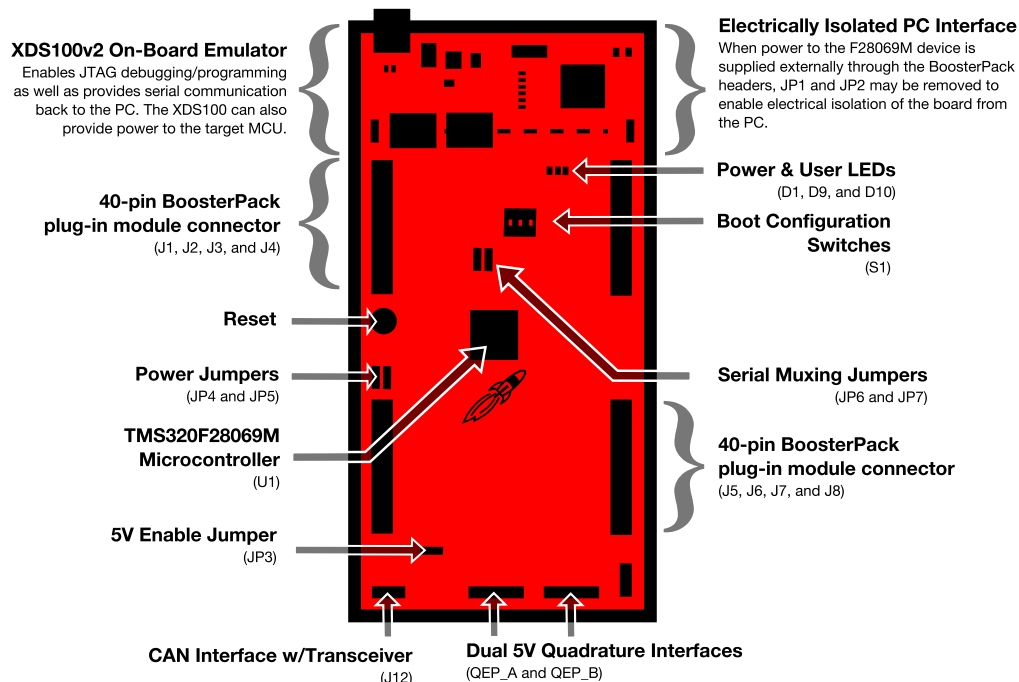
This LaunchPad is great for...

- Evaluation of InstaSPIN™-FOC and InstaSPIN-MOTION for three phase motor control, including encoder and sensorless based torque, velocity, and servo position control
- Experimentation with power conversion control including DC-AC, AC-DC, DC-DC, and MPPT algorithms
- Power Line Communications and Metering
- Industrial sensing and interface
- DSP, sensing, and capture applications including radar, Doppler, infrared, and time-of-flight

What comes in the box?



LAUNCHXL-F28069M Overview



Out-of-box Demo

For more detailed instructions refer to the user's guide @ ti.com/launchxl-f28069m

1. Connecting to the Computer

Connect the LaunchPad using the included mini-USB cable to a computer. Two green power LEDs should illuminate. For proper operation, drivers are needed. It is recommended to get drivers by installing an IDE such as TI's CCS. Drivers are also available at ti.com/xds100drivers.

2. Running the Out-of-box Demo

When connected to your computer, the LaunchPad will power up and flash the red and blue LEDs for approximately 3 seconds. After the LEDs complete flashing the LaunchPad goes into a temperature measurement mode.

Temperature Mode

This mode provides a simple thermometer application. Using the on-chip temperature sensor, a reference temperature is recorded when this mode is entered. Once a second thereafter, the device's temperature is measured and compared to the reference temperature.

If the temperature has increased the red LED (D9) will light, and will increase in intensity for each degree above the reference the temperature is.

Conversely, if the temperature has decreased the blue LED (D10) will light, and will increase in intensity for each degree below the reference the temperature is.

Temperature data is also sent serially to the PC through the USB cable using a virtual COM port. The data can be viewed in a terminal using these settings: 115200 baud, 8 data, no parity, and 1 stop bit.

InstaSPIN™ Technology

Find more information @ ti.com/instaspin

TI's InstaSPIN sensorless, three-phase motor solutions make designing motor control applications easier whether you have a simple application or a complex design.

InstaSPIN™-MOTION

TI's InstaSPIN-MOTION is powered by SpinTAC™ from LineStream Technologies. SpinTAC provides robust control across dynamic speed, position, and load ranges of the system. SpinTAC significantly slashes setup time by replacing hard-to-tune PID controllers with simple, single-parameter tuning. InstaSPIN-MOTION is ideal for applications that require accurate speed and position control, minimal disturbance, and for applications that undergo multiple state transitions or experience dynamic changes.

InstaSPIN™-FOC

TI's InstaSPIN-FOC (field-oriented-control) technology enables designers to identify, tune, and fully control any type of three-phase, variable speed, sensorless, synchronous, or asynchronous motor control system in just minutes.

This new technology removes the need for a mechanical motor rotor sensor to reduce system costs and improve operation using TI's new software encoder (sensorless observer) algorithm, FAST™ (Flux, Angle, Speed, and Torque). This enables premium solutions that improve motor efficiency, performance, and reliability in all variable-speed and load motor applications.

Getting Started with InstaSPIN™

To get started download MotorWare from www.ti.com/motorware. After MotorWare is installed, run MotorWare.exe and follow the User's Guide for the F28069M LaunchPad.

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