Avnet Product Brief

Xilinx Spartan®-6 FPGA Motor Control Development Kit

DESIGNED BY AVNET

Designed in collaboration with Xilinx, Inc., the Spartan-6 FPGA Motor Control Development Kit enables engineers to prototype motor control designs for a wide range of applications. The kit includes free introductory HDL reference designs and a demonstration of a powerful set of modular building blocks for Sensorless Field Oriented Control (SFOC) from third-party IP provider Qdesys. As a companion to the Xilinx Spartan-6 LX75T FPGA base board, Avnet's Motor Control FMC Module features the Low Pin Count (LPC) form factor, enabling attachment to any Avnet or Xilinx FMC-enabled platform. Each Avnet Motor Control FMC can drive one Stepper, two Brushed DC (BDC), two Brushless DC (BLDC) or two Permanent Magnet Synchronous Motors (PMSM).
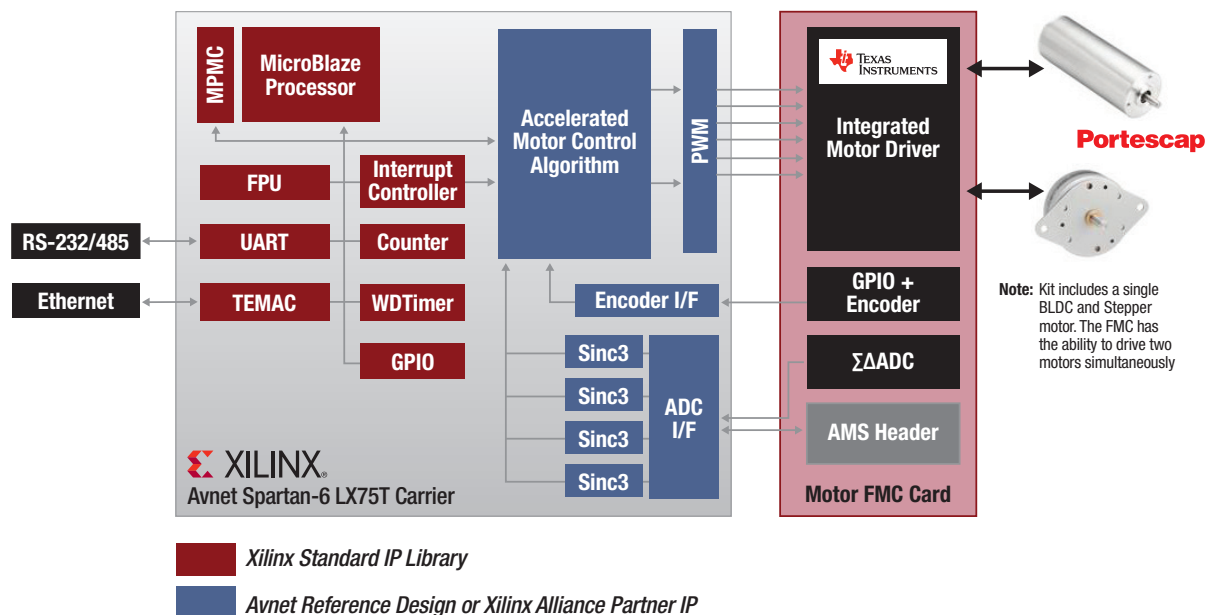
Kit Includes

- Spartan-6 LX75T base board
- Motor Control FMC Module
- Two Portescap motors - 1 BLDC and 1 Stepper
- 12 V power supply
- USB and Ethernet cables
- JTAG HS1 programming cable
- One license voucher for ISE® Design Suite: System Edition

- Introductory reference designs to spin the motors
- Sensorless Field Oriented Control (SFOC) demo from Qdesys
- Getting Started Guide and User's Guide
- Schematics, BOM and PCB files

To purchase this kit, visit www.em.avnet.com/spartan6motor

Features

- Xilinx Spartan-6 LX75T FPGA Base Board
  - Spartan-6 FPGA XC6SLX75T-3FGG676C
  - Dual 128 MB DDR3 SDRAM banks
  - 32 MB Parallel Flash
  - 128 Mb Multi-I/O SPI Flash
  - PCIe x1 edge connector
  - 10/100 Ethernet PHY
  - LPC FMC expansion header
  - Two 2x6 PMOD expansion ports
  - GPIO header with LVDS support
  - 16-bit ADC / 10-bit DAC
- Motor Control FMC Module
  - Low Pin Count (LPC) form factor
  - Plugs into any Avnet or Xilinx FMC-enabled platform
  - Drive Stepper, Brushed DC (BDC), Brushless DC (BLDC) and Permanent Magnet Synchronous Motors (PMSM)
  - Spin two motors (12-24V) simultaneously under FPGA control
  - Texas Instruments Integrated Motor Drivers
  - Texas Instruments Delta-Sigma ADCs for high precision sensing
  - Xilinx XADC header enables low-cost 7 series FPGA integration
  - Hall Sensor / Encoder and GPIO ports
  - User prototyping area
  - Powered from FPGA base board or external source

Target Applications

- Industrial automation
- Consumer electronics
- Medical diagnostics
- Robotics

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Note: Kit includes a single BLDC and Stepper motor. The FMC has the ability to drive two motors simultaneously

■ *Xilinx Standard IP Library*

■ *Avnet Reference Design or Xilinx Alliance Partner IP*

Featured Manufacturers

Ordering

Part Number	Hardware	Resale
AES-S6MC1-LX75T-G	Xilinx Spartan®-6 FPGA Motor Control Development Kit	$1,095 USD
AES-FMC-MC1-G	Motor Control FMC Module and Two Portescap Motors	$499 USD

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