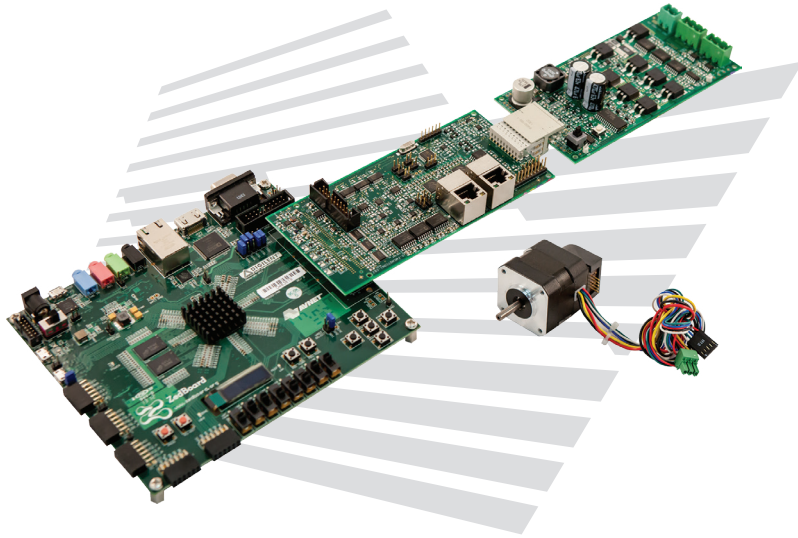# Avnet Product Brief

Xilinx® Zynq®-7000 All Programmable SoC/Analog Devices Intelligent Drives Kit

DESIGNED BY AVNET

Combining the Xilinx Zynq®-7000 All Programmable SoC ARM® dual-core Cortex™-A9 + 28 nm programmable logic with the latest generation Analog Devices high-precision data converters and digital isolation, this kit enables high performance motor control and industrial networking connectivity. Also included is a Zynq reference design of Field Oriented Control featuring Analog Devices Linux framework to provide an ideal infrastructure for quickly adding custom control algorithms. Model-Based Design for Zynq is supported using Simulink®, Embedded Coder®, and HDL Coder™ from MathWorks.

Kit Includes

- » Avnet ZedBoard 7020 baseboard
- » Xilinx Vivado™ Design Edition voucher
- » Analog Devices AD-FMCMOTCON1-EBZ Module
- » 8 GB SD card programmed with application
- » Linux drivers, applications software, HDL source, reference designs, full schematics and Gerbers
- » Brushless DC motor: 24 V, 4000 RPM, Hall Sensors and 1250 CPR indexed encoder
- » MathWorks Motor Control Design Package (optional)
- » Dynamometer dynamic load to test Zynq motor control performance with interface to MATLAB® (optional)

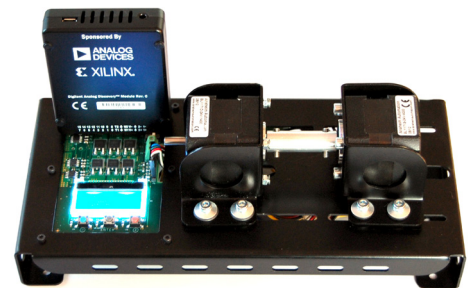**To purchase this kit, visit www.em.avnet.com\zynq7000idk**

Features

- » Analog Devices AD-FMCMOTCON1-EBZ module
- » Drive BLDC / PMSM / Brushed DC / Stepper motors up to 48 V @ 18 A
- » AD7401A Isolated 20 MHz Sigma-Delta modulator
- » AD8251 Programmable Gain Amplifiers for full-scale current measurement
- » ADuM5000/7640 power and digital signal isolation
- » Dual Gigabit IEEE1588 Ethernet PHYs for high speed industrial communication
- » Xilinx XADC interface
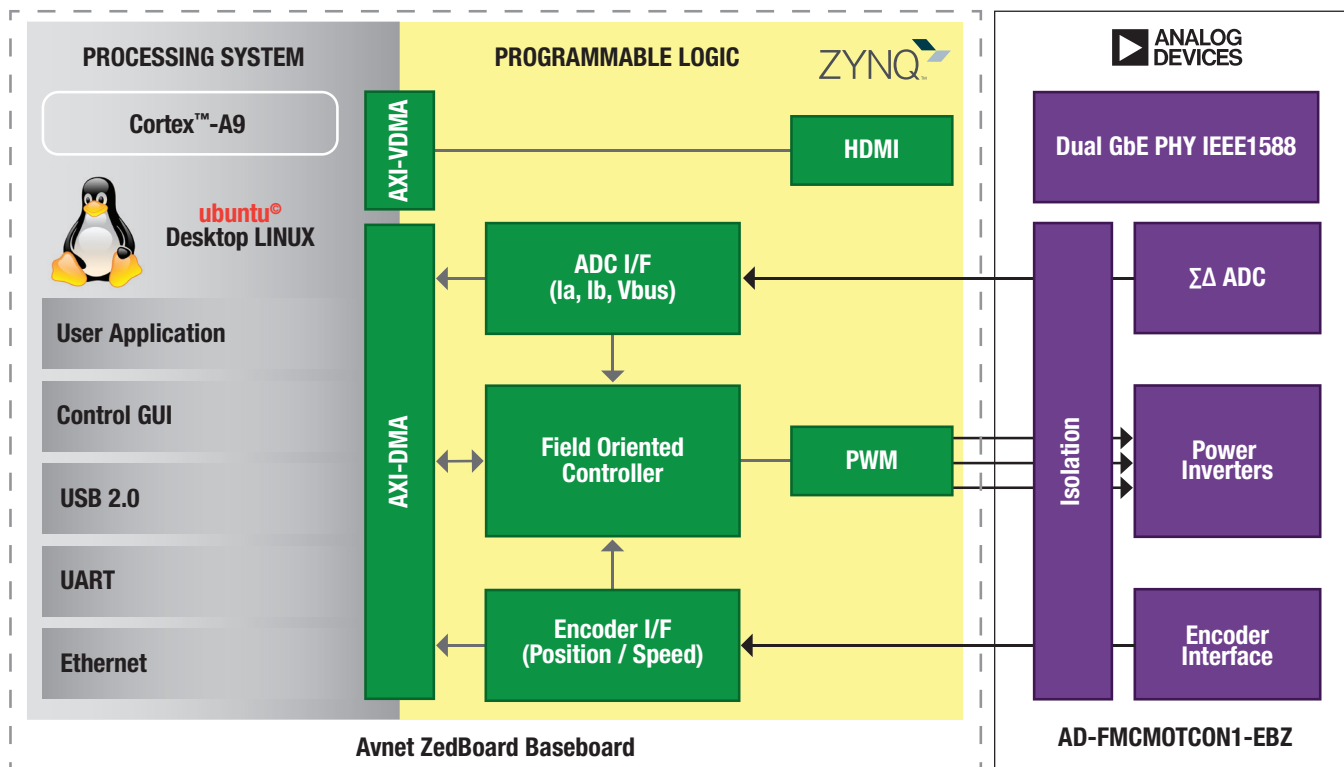- » Sensored or sensorless position measurement

Target Applications

- » Industrial servos and drives
- » Manufacturing, assembly, and automation
- » Medical diagnostic
- » Surgical assist robotics
- » Video surveillance and machine vision
- » Power efficient drives for transportation

Optional Dynamometer Electronic Test Load

electronics marketing

Accelerating Your Success™

PROCESSING SYSTEM | PROGRAMMABLE LOGIC | ZYNQ

Cortex™-A9

ubuntu© Desktop LINUX

- User Application
- Control GUI
- USB 2.0
- UART
- Ethernet

AXI-VDMA

AXI-DMA

Avnet ZedBoard Baseboard

HDMI

ADC I/F (Ia, Ib, Vbus)

Field Oriented Controller

PWM

Encoder I/F (Position / Speed)

ANALOG DEVICES

Dual GbE PHY IEEE1588

ΣΔ ADC

Isolation

Power Inverters

Encoder Interface

AD-FMCMOTCON1-EBZ

Featured Manufacturers

XILINX — ALL PROGRAMMABLE™

ANALOG DEVICES

MARVELL®

samtec

Ordering

Part Number	Hardware	Resale
AES-ZIDK-ADI-G	Zynq-7000 AP SoC/Analog Devices Intelligent Drives Kit	$995 USD
AES-ZIDK-ADI-DYNO-G	Zynq-7000 AP SoC/Analog Devices Intelligent Drives Kit with Dynamometer	$1,695 USD
AES-ZIDK-ADI-DYNO-G-MATW-ANUL	MathWorks DSP Design Package - Annual License for Zynq Intelligent Drives Kit with Dynamometer	$19,215 USD
AES-ZIDK-ADI-DYNO-G-MATW-PERP	MathWorks DSP Design Package - Perpetual License for Zynq Intelligent Drives Kit with Dynamometer	$45,495 USD

To purchase this kit, visit www.em.avnet.com\zynq7000idk

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