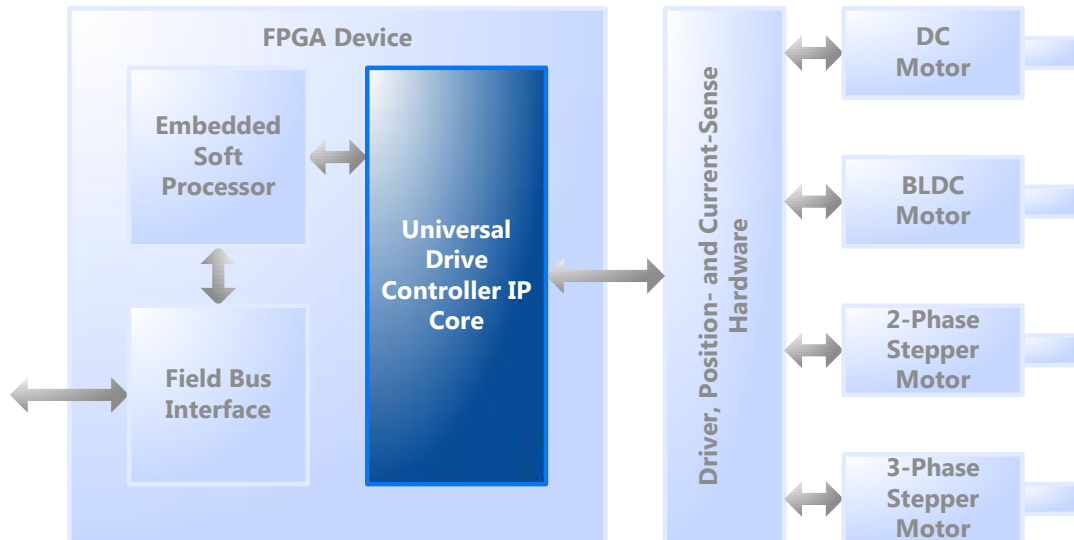




Universal Drive Controller IP Core



Overview

The Enclustra Universal Drive Controller IP Core enables the easy addition of drive control capabilities to existing or future FPGA designs. There is no need for an extra drive controller chip that would consume precious PCB space and unnecessarily extend the project BOM.

With its modular design and strong scalability, the Universal Drive Controller IP Core perfectly fits the system requirements without wasting any FPGA resources. These unique features will also simplify the reuse of the Universal Drive Controller IP Core in future projects.

Selecting Enclustra's Universal Drive Controller IP Core for the drive control needs of future projects will significantly reduce time to market as well as the overall system cost.

Benefits

- Significantly lower CPU load thanks to completely autonomous control loops
- Easy integration, lowest solution cost
- Plenty of parallel processing power, zero jitter
- Well-defined interfaces for galvanically isolated power stages
- Great reusability thanks to configurable controller structure

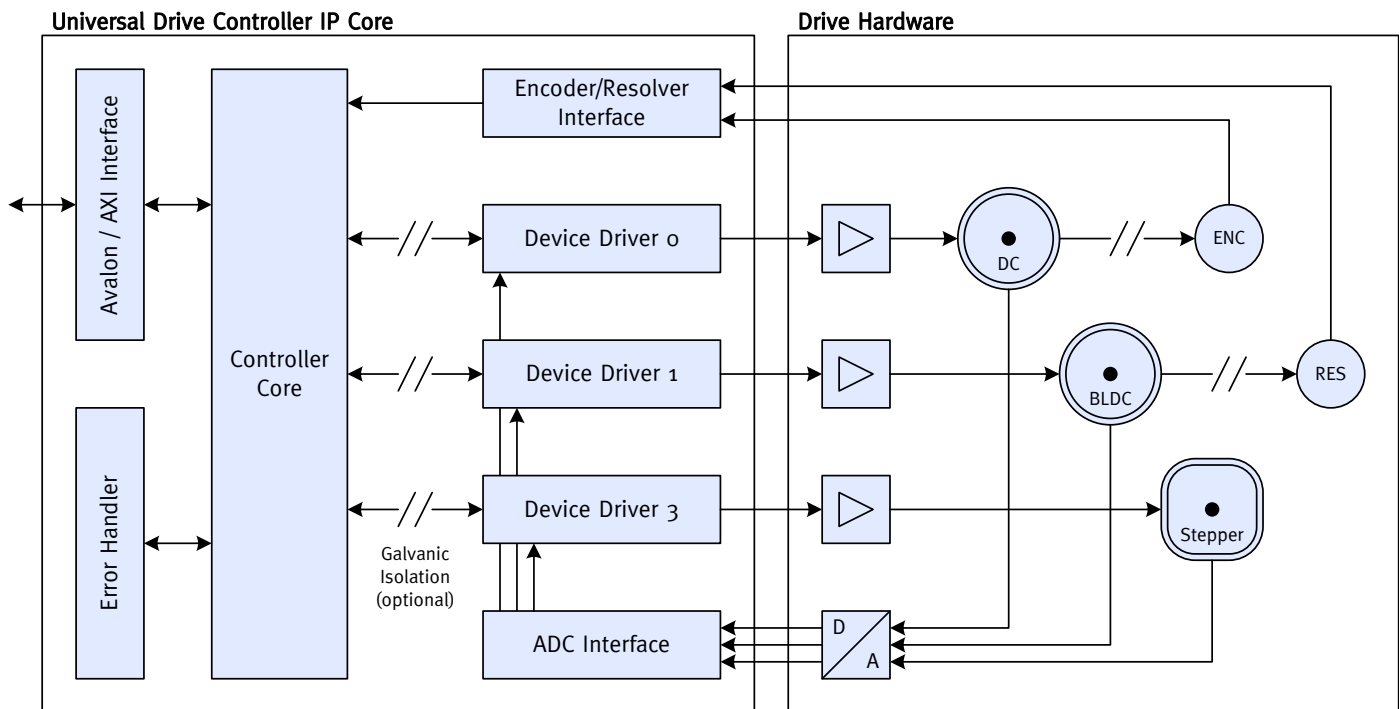
Highlights

- Support for DC, BLDC, 2- and 3-phase stepper motors
- Support for encoders and resolvers
- Field oriented control (FOC) for BLDC motors
- Completely autonomous error handling
- Support for ADC-sharing between different devices
- Single chip solution (fieldbus access, CPU and drive controller within the same chip)
- Optimized for lowest total solution cost

Features

- Up to 8 drives per controller
- Up to 4 PID controllers per drive (position, velocity, current(s)) at up to 200 KHz control rate
- Velocity- and acceleration-feed-forward
- Voltage, current and temperature supervision
- Separate PWM clock domain for high-resolution PWM
- Vendor-independent implementation
- Available with Avalon or AMBA-AXI interface

Core Architecture



Site License Model

- The license is granted to an "authorized site", meaning a single geographic location with radius < 5 km in which the licensee conducts business.
- The licensed material can be used for unlimited projects and/or end products developed at the authorized site.

Deliverables

- Universal Drive IP Core
 - Device-specific netlist
 - Test bench including pre-compiled simulation library for Modelsim
 - User Manual
- Universal Drive API
 - C object and header files
 - Application software example
 - User manual

Target Applications

- Industrial Automation
- Medical Testing
- Servo Control
- Robotics

Related Products

- Enclustra Advanced Velocity Estimator IP Core
- Enclustra FMC DR2 Drive Evaluation Board