

Firmware for Servo Drive solution enabling position control through EtherCAT Protocol

Applications	Motor Control	Microcontroller configuration EtherCAT top layer API
	Serial Communication	
Middleware	EtherCAT stack protocol	Motor Control Library
Drivers	STM32Cube Hardware Abstraction Layer (HAL)	Board Support Package (BSP)
	STM32F767ZI, IPS160H, CLT03-2Q3, STDRIVE101, STH270N8F7-2, TSV991ILT, ST3485EI	
Hardware	STEVAL-ETH001V1	

Features

- Position control algorithm based on [X-CUBE-MCSDK](#)
- Supported EtherCAT slave protocol (V.5.0.8)
- Firmware compliant with [STM32Cube](#) framework
- BSP support for digital actuation interface
- RS485 interface support

Description

The [STSW-ETHDRV01V1](#) firmware package for the [STEVAL-ETH001V1](#) servo drive solution, implements position control algorithm with real-time communication running on the [STM32F767ZI](#) microcontroller. It can manage connectivity, servo drive actuation and digital input/output interface at the same time.

The connectivity includes real-time communication with EtherCAT protocol stack (V. 5.0.8) for the slave node and [RS485](#) communication to interface the hardware with a PC or digital encoder supporting BiSS, EnDat and SSI protocols.

The servo drive actuation implements a position control algorithm using the [X-CUBE-MCSDK](#) motor control library to control a PMSM motor rotor position via EtherCAT communication remote control.

Digital actuation interface management is supported by a set of routines, able to manage the [IPS160H](#) digital output state according to the information received from the [CLT03-2Q3](#) digital inputs and the command received from the PC through [RS485](#) connection.

Product summary	
Firmware for servo drive solution enabling motor control position through EtherCAT protocol	STSW-ETHDRV01V1
Servo drive solution for multi-axial position control	STEVAL-ETH001V1
Triple half-bridge gate driver	STDRIVE101
STripFET F7 Power MOSFET	STH270N8F7-2
Arm Cortex-M7 MCU	STM32F767ZI
Applications	3-phase field oriented control Industrial servo drives

Revision history

Table 1. Document revision history

Date	Version	Changes
07-Apr-2021	1	Initial release.
20-Apr-2021	2	Updated cover page description. Minor text changes.
27-Jul-2021	3	Updated cover image.

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