SuperCAT

Software-defined EtherCAT Motion Controller

Highlights

- Software EtherCAT MainDevice combines EtherCAT protocol, IO control, and motion control with short lead time
- Supports 125μs EtherCAT control cycle, and up to 128 axes motion control with one PC
- Fast and stable application run in real-time environment
- Run MCP2 & application at the same time to fine tune m/c UPH

Key Features

- EtherCAT open standard protocol CIA402 compliance for motion control
- Support 2D coordination bias compensation for high precision movement
- App management and execution in real-time environment via process download function and GUI
- 16D linear interpolation and 3D spiral
- Real-time processing and EtherCAT MainDevice achieved by allocating one CPU core, memory and LAN port
- Supports APS SDK for machine automation, compatible with ADLINK motion controller products
- Lowest jitter <20μs by fine tuning CAT-PAC controller

Introduction

ADLINK SuperCAT is a software-defined EtherCAT motion controller able to support up to 128 synchronized axes and over 10,000 points simultaneously. SuperCAT fully supports the ECAT-4XMO series for EtherCAT to pulse train conversion and diversified pulse control. SuperCAT also supports the ECAT-TRG4 series with comparison triggers used for AOI/ dispensing machines. Optimum jitter control is provided in minimal cycles of 125μs to optimize synchronous I/O performance for vertical automation applications in the semiconductor and electronics manufacturing industries, among others.

SuperCAT provides an out-of-shell application-ready (APS) function library to generate multi-dimensional, highly synchronized, time-deterministic event-triggered motion and I/O control. A wide range of compatible 3rd party SubDevice are easily controlled with ADLINK's APS function library. ADLINK's MotionCreatorPro 2™ utility is fully compliant with the Microsoft® Windows™ environment, allowing complete EtherCAT motion and I/O configuration and function evaluation as well as process download functions.

System Requirements

- Windows 10/11 32/64-bit
- x86 Atom (EHL)/Core-i/Xeon
- 100/1000 Ethernet port

Ordering Information

- **EM-xP00**
  SuperCAT virtual license for Class version

- **EM-xC00**
  SuperCAT virtual license for Premium version

- **EM-xA00**
  SuperCAT virtual license for Ultimate version

- **EM-xP00D**
  SuperCAT dongle license for Classic version

- **EM-xC00D**
  SuperCAT dongle license for Premium version

- **EM-xA00D**
  SuperCAT dongle license for Ultimate version

Note:
x = 2: supports 16 axes motion control   x = 8: supports 64 axes motion control
x = 4: supports 32 axes motion control   x = F: supports 128 axes motion control

Specifications

Function	Mode	Classic EM-xP00	Premium EM-xC00	Ultimate EM-xA00
Single Axis motion	P2P	V	V	V
	Position/Velocity override	V	V	V
	Blending mode	V	V	V
	Homing	V	V	V
	Motion IO mapping	V	V	V
Multi-Axes Motion	Linear interpolation	V	V	V
	2D circular interpolation	-	V	V
	Circular/Spiral/Helical	-	V	V
	Gantry/E-Gear	-	V	V
	Gantry/E-Gear homing	-	V	V
	Blending mode	V	V	V
	Continuous interpolation	Line Only	Line+2D circular	V
	PVT	-	V	V
Speed Profile	T curve	V	V	V
	S curve	-	V	V
Compensation	Pitch error compensation	-	V	V
	Backlash compensation	-	V	V
	2D mesh compensation	-	-	V