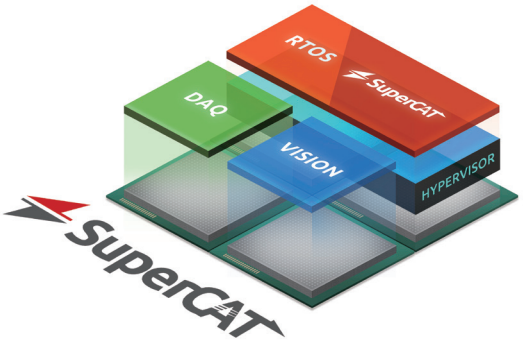
# SuperCAT

## Super-performance Soft EtherCAT Controller




## Highlights

- Enhanced computing power and ultra-low system latency ensure superior motion execution performance
- Supports 125µs EtherCAT control cycle, up to 128 devices synchronous motion control
- Real-time performance guaranteed with verification by ADLINK computing platforms
- ADLINK Soft-motion framework (user task) in RTOS for user motion process execution
- ADLINK RTOS development environment for user program execution
- Dual-master supported for independent cycle times and load balancing

## Key Features

- EtherCAT Cyclic Synchronous Mode supported: CSP / CSV / CST
- Point-table for continuous move (contouring) applications
- 2/3D dynamic error & orthogonal system compensation
- Programmable interrupt control: Axes & System factors
- EtherCAT utility supported: ECAT-Configurator & Third-party IO Mapping
- EtherCAT diagnostic tools supported: Frame loss, Bus loading and Slave device alive check
- Master jitter measurement and visualization in RTOS-Configurator tool
- User-defined I/O data sequencing, supporting up to 65,536 points separately

## Introduction

ADLINK SuperCAT is a Super-performance Soft EtherCAT Controller capable of supporting up to 128 synchronized axes and over 10,000 points. SuperCAT fully supports ADLINK EtherCAT subdevices for high-speed trigger, latch, I/O, and pulse train motion control, designed for laser and semiconductor applications. It features a built-in software trigger and latch function operating at up to 4 kHz for applications such as AOI, dispensing, and EMS manufacturing. Optimal jitter control is achieved with minimal cycles of 125µs, enhancing synchronous I/O performance for vertical automation applications in the semiconductor and electronics manufacturing industries, among others.

SuperCAT provides an off-the-shelf 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 third-party subdevices can be easily controlled using ADLINK's APS function library. ADLINK's Motion Creator Pro 2™ utility is fully compliant with the Microsoft® Windows™ environment, allowing comprehensive EtherCAT motion and I/O configuration, function evaluation, and process download functions.



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## System Requirements

- Operating System: Windows 10/11 64-bit
- Processor: x86 Atom, Core i, or Xeon
- Network Interface: 100/1000BASE-T Ethernet port

## Ordering Information

- **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 = 4: supports 32 axes motion control
x = 8: supports 64 axes motion control
x = F: supports 128 axes motion control

The SuperCAT are available for different platforms.
The SuperCAT performance is dependent on the configuration and the technical data of the ADLINK IPC (including the processor).
125us EtherACT control cycle only guaranteed with ADLINK-specific platforms.

## Specifications

| | | Classic | Premium | Ultimate |
|---|---|---|---|---|
| Control Mode | CSP (Cyclic Synchronous Position) | V | V | V |
| | CSV (Cyclic Synchronous Velocity) | - | V | V |
| | CST (Cyclic Synchronous Torque) | - | V | V |
| | HM (Homing Mode) | V | V | V |
| | PT / PVT Motion Mode | - | V | V |
| Motion | Speed & Position Override | V | V | V |
| | Linear / Circular / Helical Interpolation | V | V | V |
| | E-Gear / Gantry | V | V | V |
| | Point-table for Continuous Move | - | V | V |
| | Linear & Rotary Coordinates Supported | V | V | V |
| | Backlash & Pitch Error Compensator | V | V | V |
| | 2D Position Error Compensation | - | V | V |
| | 2D / 3D Dynamic Error Compensation | - | - | V |
| Application | Contouring Synchronized DO Control | - | V | V |
| | Position Comparison Trigger Output | V | V | V |
| | Position Latch Function | V | V | V |
| | Interrupt Control | V | V | V |
| | User Task Framework (by API supported) | V | V | V |
| | User RTOS Application Dev. Environment | - | - | V |
| Utility & GUI | Sampling Function | V | V | V |
| | API & RTOS Log and Viewer | V | V | V |
| | EtherCAT Utility & Diagnostic Tools | V | V | V |
| | IO Address Mapping | V | V | V |
| | Simulation Axis and IO | V | V | V |
| | Master Jitter Measurement Tools | V | V | V |

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