

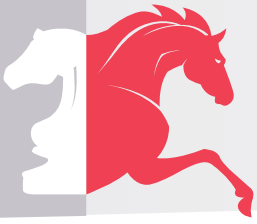


High-Performance OEM Motion Control Solutions

Better Throughput | Higher Accuracy | Faster Development | Greater Flexibility




ACS
MOTION CONTROL



Our Story

ACS MOTION CONTROL

Since 1985, original equipment manufacturers in semiconductor, electronics assembly, laser processing, flat panel display, biomedical, and other high-tech industries have trusted ACS Motion Control to improve machine performance, enhance design flexibility, accelerate application development, and minimize time to market.

With headquarters in Israel, subsidiaries in the United States, Germany, China, Asia, and a global network of distributors and partners, our organization is structured to meet the needs of OEMs operating globally. Since 2017, we are a proud member of The Physik Instrumente (PI) Group.

We are always ready to rise to the challenge to deliver smart, best-performing motion control solutions for the most demanding applications, developed and supported in partnership with you and in-line with your needs.



Standard Products, Tailored Solutions

ACS and its partners tailor motion control solutions with standard products to meet your unique requirements.

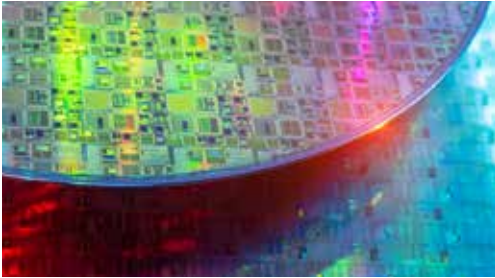
- Motion controllers
- Motion controllers with integrated drives
- Motor drives
- Drive interfaces
- Laser interfaces
- Auxiliary products

Competencies to Address Challenging Applications

Our unique mix of competencies enables you to solve the toughest motion control challenges of today and tomorrow.

- Advanced servo control algorithms and motor drive technology
- Sophisticated motion profile generation algorithms
- Motion-to-process event synchronization
- EtherCAT-based control systems
- Extensive application development tools and libraries
- Expert application and support engineering

The Markets We Serve & Advance



Semiconductor

Inspection and metrology
Hybrid bonding, die bonding
Lithography
Photonics assembly and test



Electronics

Inspection and metrology
Assembly and test
Dispensing and coating
Laser direct imaging



Laser Processing

TGV drilling
PCB drilling and cutting
Laser cutting, welding, micromachining
Laser-based additive manufacturing



Biomedical Systems

Genome sequencing
Pathology and imaging
Precision lab automation



SPiiPlus Platform

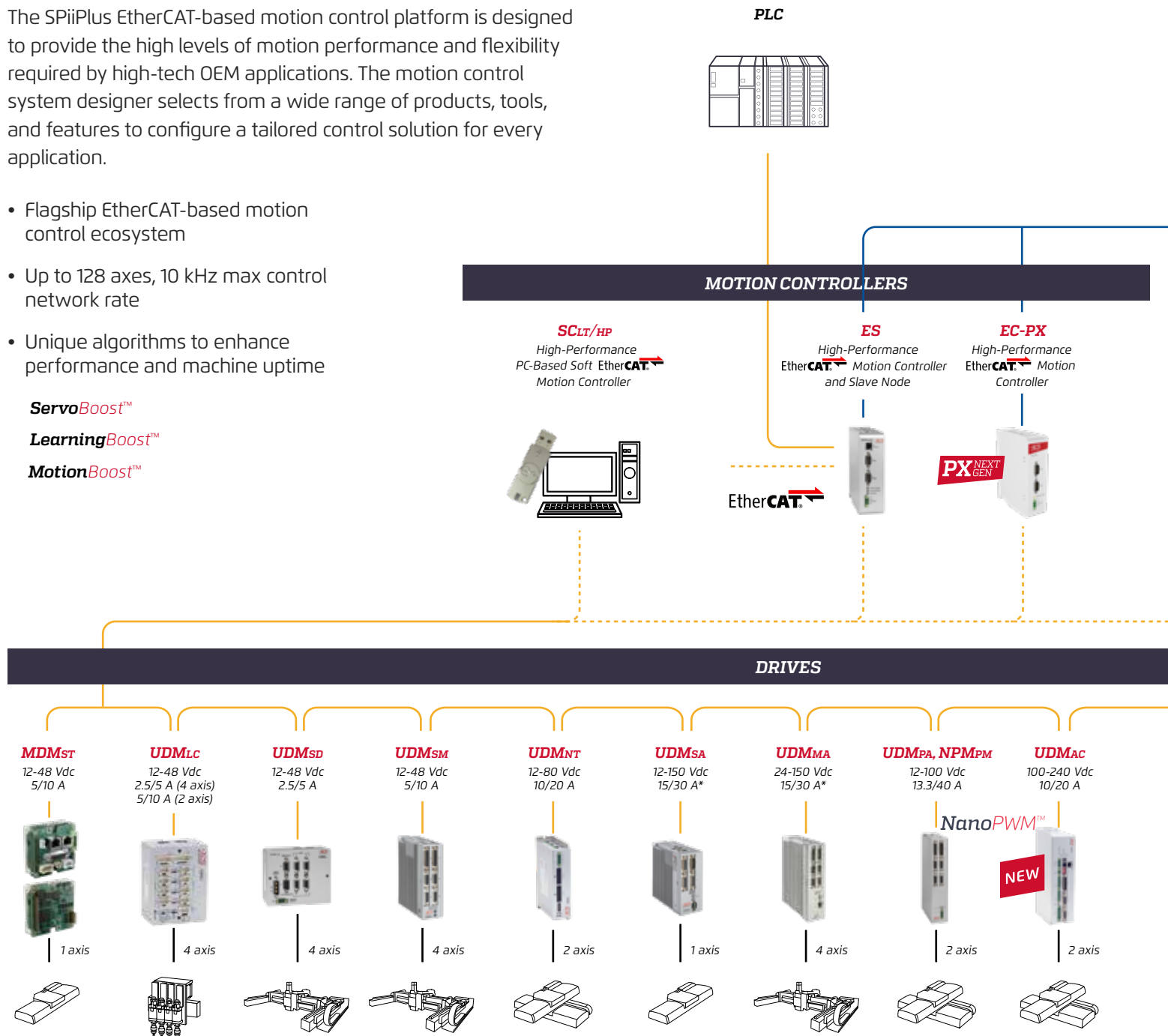
The SPiiPlus EtherCAT-based motion control platform is designed to provide the high levels of motion performance and flexibility required by high-tech OEM applications. The motion control system designer selects from a wide range of products, tools, and features to configure a tailored control solution for every application.

- Flagship EtherCAT-based motion control ecosystem
- Up to 128 axes, 10 kHz max control network rate
- Unique algorithms to enhance performance and machine uptime

ServoBoost™

LearningBoost™

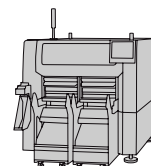
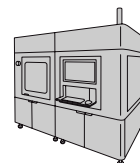
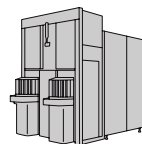
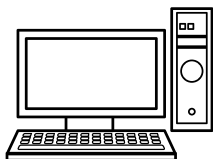
MotionBoost™



* Max current not available for all configurations / axes



Host PC/PLC



Ethernet TCP/IP & UDP



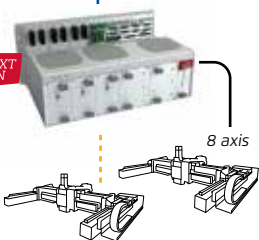
For High-tech OEM machines with demanding throughput and accuracy requirements

MOTION CONTROLLERS WITH INTEGRATED DRIVES (CONTROL MODULES)

MC4U-PX

100-240 Vac
20/40 A

NanoPWMPlus™



CMac

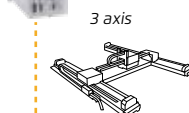
100-240 Vac
10/20 A

NEW



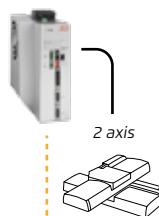
CMxA

100-240 Vac
15/30A



CMHv

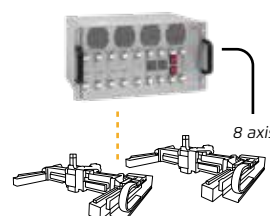
185-240, 400-525 Vac
15/30 A (480Vac)
20/60 A (230Vac)



MP4U

100-240 Vac
13.3/40 A

NanoPWM™



DRIVE INTERFACES

I/O & LASER CONTROL

UDMdX

100-240,
360-440 Vac
15/30 A



UDMxA

85-265 Vac
15/30 A



UDMHv

185-250,
400-525 Vac
15/30 A (480Vac)
20/60 A (230Vac)



PDICL

Pulse Direction
command interface



UDILT/HP

+/-10 V
command interface



IOMNT

32/32 digital
(source type)



IOMPS-ED

32/32 digital
(sink type)



IOMPS-EA

4/0, 0/4 analog
(+/-10 V)



LCI

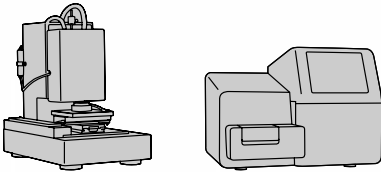
High-speed digital
and analog I/O for
laser and measurement
device control



Connect.
Command.
Control.

Economical Control Module (ECM) Series

- All-in-one motion controllers with integrated drives
- For cost- and space-sensitive OEM machines up to 4 axes



Host PC/PLC



Ethernet TCP/IP & UDP



VALUE

Achieve excellent performance
at an economical price



FLEXIBILITY

Control various motion
stage technologies



INTEGRATION

Minimize design effort
with all-in-one industrially
packaged solution

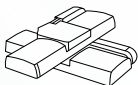
MOTION CONTROLLERS WITH INTEGRATED DRIVES

ECMAc

100-240 Vdc
10/20 A



2 axis

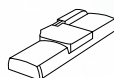


ECMSa

12-150 Vdc
15/30 A*



1 axis

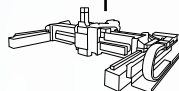


ECMSm

12-48 Vdc
5/10 A



4 axis

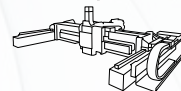


ECMma

24-150 Vdc
15/30 A*



4 axis

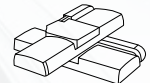


ECMDx

100-240,
360-440 Vac
15/30 A



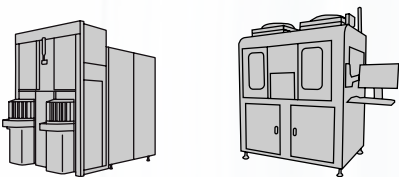
2 axis





Intelligent Drive Module(IDM) Series

- DS402 EtherCAT drives for high-precision motion stages
- For OEM machines with demanding motion requirements





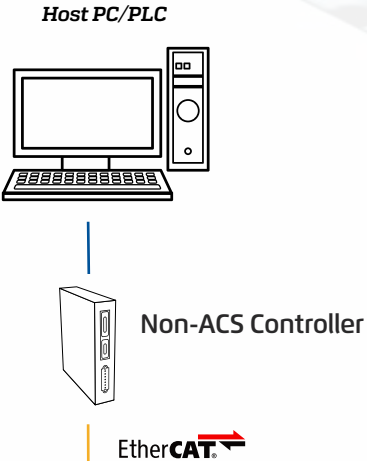
CONFIDENCE
Leverage 35+ years
of high-performance
motion control expertise



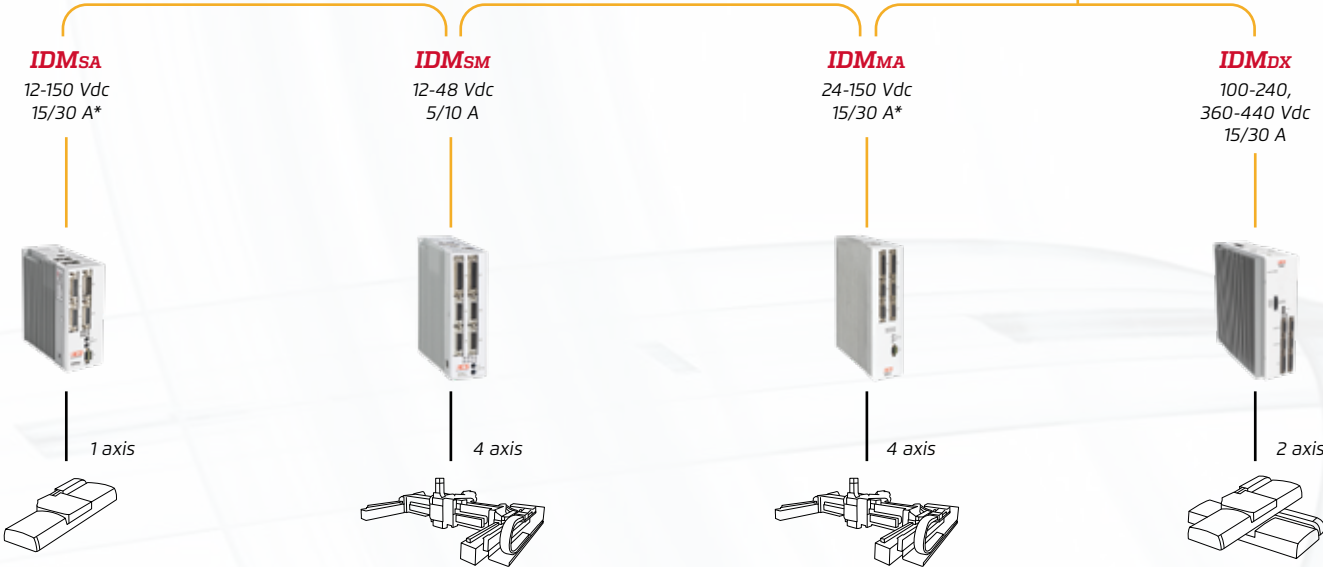
FLEXIBILITY
Control various motion
stage technologies



PERFORMANCE
Achieve a competitive advantage
with higher throughput and accuracy



DRIVES



One Common Set of Development Tools

The SPiiPlus ADK Suite

All three product families are supported by our SPiiPlus ADK Suite, which integrates all the development tools, software libraries and product resources you need to design, deploy and maintain your motion control application over the course of a machine's lifespan.

This comprehensive package includes our MMI Application Studio, which provides powerful, easy-to-use tools for configuring, tuning, programming, and measuring motion performance.

MMI Application Studio tools include:

- **Frequency Response Function (FRF) Analyzer**, offering sophisticated frequency domain measurement, analysis and design capabilities necessary for maximizing servo stability and bandwidth.
- **Smarter Autotuning**, helpful to both the novice and expert, this flexible tool accelerates motor tuning procedures.
- **3D Scope** for visualizing motion and analyzing data in three dimensions, streamlining development in pick-and-place, 3D inspection, metrology and other applications.
- **System Setup Tools** for single-click EtherCAT network configuration.
- **Adjuster Wizard** for step-by-step axis configuration and tuning.



SPiPlus Simulator

The SPiPlus Simulator accelerates application development at the controller and host levels without having to connect to any hardware. Using a robust simulation of your machine and motion control system, you can more quickly develop and debug process recipes, emulate responses to inputs and fault conditions and much more.

- *Significantly reduce development and programming effort.*
- *Develop and test host applications in C, C++, C#, .NET, Linux, Python, MacOS, LabView, and more.*
- *Develop and test controller applications in ACSPL+ or G-code.*
- *Simulate machine input and fault conditions for more robust error handling.*

Host Application Development Libraries

Reduce your time to market by taking advantage of our powerful host application libraries that work seamlessly with all controller models including the SPiPlus Simulator. Available libraries include C/C++, COM, .NET, MATLAB, Linux, Python, MacOS, and low-level socket.

If you need to implement motion system measurement, design, and reporting functionality into your host application, leverage our FRF Analyzer Library's ready-made frequency response measurement and analysis capabilities to minimize software development effort.

ACSPL+ Real-Time Programming

All of our motion controllers support ACSPL+, a powerful yet easy-to-use high-level real-time programming language with over 20 years of improvements designed to reduce complexity of multi-axis motion and machine control application development. Develop sophisticated algorithms efficiently with real-time C functions.

- *Easily synchronize motion with events to maximize machine throughput*
- *Create customized data structures and functions to implement unique machine functionality*
- *Collect, gather, and process large amounts of data at high update rates*



We Support:



Motion Profile Generation

SmoothPath

Increase throughput in advanced contour motion applications

SmoothPTP

Reduces motion-induced resonances enabling higher velocity and acceleration

MotionBoost™

Increase throughput and accuracy in rapid short duration moves

Segmented Motion

Multi-axis contour motion profile mode with lines and arcs

Motion Process Synchronization

Position Event Generation (PEG)

High speed, on-the-fly event triggering synchronized to precision positioning

Position MARK Capture

High speed, on-the-fly position capture synchronized to event trigger

XL SCAN

Synchronized motion stage and galvo scanner control

Multi-axis Position-Based Triggering

Improve precision of fixed beam laser processing systems

Servo Control Technology



Auto compensates for changing loads & resonances in precision motion systems

ServoBoost™

Improve motion system performance with unique servo algorithms



Tracking error (position error in multiple colors) is reduced during successive point-to-point motions (velocity profile in yellow)

LearningBoost™ & LearningBoost Plus™

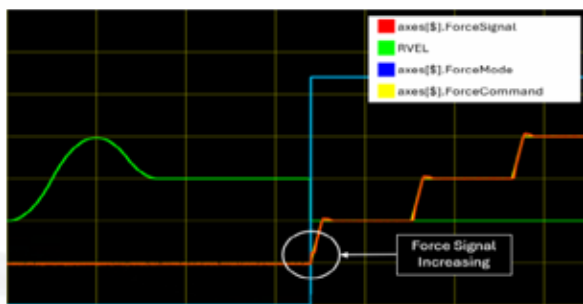
Learning algorithm improves repetitive motion performance. AI powered algorithm (Plus) achieves higher control bandwidth for non-repetitive processes.



Optimize motion system performance for nanometer resolution applications

NanoPWM™ & NanoPWM Plus™

Advanced servo drive and algorithm technology for sub-nanometer precision. Improved EMI performance (Plus) for noise sensitive measurement systems.



High-tech applications (such as Semiconductor Advanced Packaging) require highly accurate control of forces applied by precision motion stages during a contact-based process.

Force Control

Precision force control with on-the-fly contact detection



Visit us online to learn more.

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