HIWIN®
Motion Control and System Technology

# HIMC

## *Multi-Axis Motion Controller*

Multi-axis motion control master with versatile programming capabilities for demanding industrial applications


- Up to **16** fully synchronized slaves
- Controller cycle time **250** µs
- **10/100/1000** Mbps TCP/IP host communication
- Multi-task HMPL programming with maximum **64 user tasks**
- Software library supported for **C/C++/C#** host programming
- Support all **mega-ulink over EtherCAT** (**MoE**) compatible drives and I/O modules
- **CE/UL** approvals

**HIMC**, HIWIN motion controller, is the real-time **multi-axis** motion controller to meet your specific requirements in industry automation. It is able to synchronize all **MoE** compatible motor drives and I/O modules, and perform various tasks through highly-customizable scripting language, **HMPL**, and high-level host programming via **C/C++/C# API libraries**.

The HIWIN **mega-ulink over EtherCAT** protocol featuring distributed clocks enables the high network synchronization cycle time of 250 µs for all motor axes and I/O modules. The real-time digital control architecture renders your machine fast and responsive enough for a variety of demanding applications.

For sophisticated motion requirements, synchronized single and multi-axis trajectories, including **point-to-point**, **jogging** and **2D/3D linear and circular interpolation** are readily available. Furthermore, the built-in **dynamic geometric compensation** algorithms help enhances the positioning accuracy of your machine.

The HIMC is complemented by the **iA Studio**, a software package comes with various tools including **Motion Manager**, **HMPL Editor** and built-in **simulator**, providing a smooth and interactive experience in configuring and deploying your own industrial applications.

*The key to HIWIN motion control **total solution***

# Specifications

### Number of slaves

- Up to 16 slaves. (including motor drives and I/O modules)

### Motion types

- Single axis motion: point-to-point, jog
- Group interpolation: multi-axis linear and circular interpolation
- Trapezoidal motion profile with smooth factor from 0 to 500 milli-second

### Dynamic error compensation

- One-dimensional geometric compensation for increasing positioning accuracy

### Programming

- HMPL (HIWIN Motion Programming Language) High-level multi-tasking environment
- Up to 64 simultaneously running user tasks
- Up to 512,000 double precision user defined variables
- User program size: 10 MB of source code

### Software Library

- library for C/C++/C#/python... etc.

### Communication

- Ethernet port :10/100/1000 Base-T Ethernet with TCP/IP x2
- Cycle time: 250 μs for up to 16 slaves

### Supported slave modules

- All HIWIN mega-ulink over EtherCAT compatible motor drives (D1, D2T, D1-N) and HIOM I/O modules

### Computational capability

- Processor: Intel® Celeron® Bay Trial J1900
- Memory: 2GB DDR3L 1333 MHz SDRAM
- Storage: mSATA SSD 32G

### Built-in I/O

- General Purpose Input: 8 Opto-isolated 24V, delay time within 1ms. (sinking input, PNP)
- General Purpose Output: 8x Opto-isolated 24V, delay time within 1ms.
- GPIO current: 100 mA. (max. 0.8 A per bank of 8).

### Power

- Main power Input: DC 24V/0.6A
- Power consumption: max. 14.4W
- LED status indicator

### Mechanical characteristics

- Size (Width x Height x Depth): 57 x 180 x 140 $mm^3$
- Weight: approx.1200g
- Mounting: DIN rail

### Chassis construction

- Extruded aluminum alloy for fan-less support

### Environment

- Protection class: IP30
- Operating temperature: 0°C to 50°C
- Storage temperature: -20°C to 85°C
- Operating altitude: up to 2000 m.
- Ventilation: fan-less convection cooling
- Humidity: 5% - 95%, non-condensing
- Vibration: Random: 5-500Hz, 2G. Sine: 10-500Hz, 5G Shock: duration: 11ms

### Certifications

- EMC: EN61000-6-2, EN61000-6-4
- Safety: UL61010-1, UL61010-2-201, EN61010-1, EN61010-2-201, ISO 14971

# Ordering Information

Model: MC - 16 - 01 - 00 - 00
*1. 2. 3. 4.*

Options:

***1. Maximum number of axes***

**16**: Up to 16 synchronized slaves

***2. Hardware options***

**01**: Intel® Celeron® Bay Trial J1900

***3/4. Additional features***

**00-00**: General Functions

**Others**: (when available)

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