

# iQ

## Automation Platform

### QDS Motion CPU

More than just motion



Significantly increase machine performance with accelerated processing speeds



Easily combine motion with PLC, CNC and robot control if necessary



Compatible with all iQ Platform parts, MR-J4 servos



Quickly develop & maintain motion systems

# Multi-talented



Use the QDS motion CPU to tackle your toughest application challenges

needed more quickly and perform to higher standards. Alternatively, the focus can be narrowed to address complex motion applications. Either way, the benefits are simpler engineering by use of a single platform, and elimination of integration problems. Valuable engineering time and skills can be freed to concentrate on the application itself.

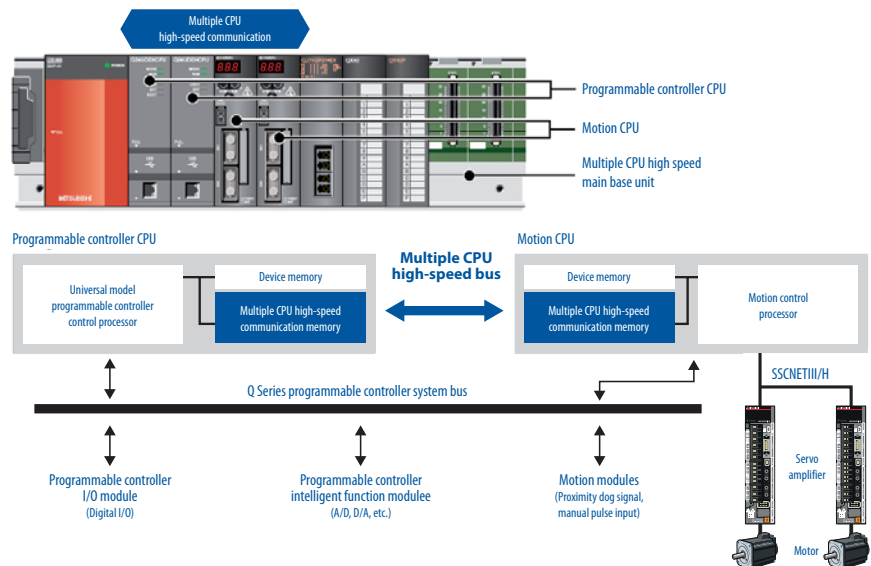
## Don't miss the bus

The QDS motion CPU is specifically designed to integrate with other iQ control disciplines, providing up to 32 axes of motion that can be operated harmoniously with PLC, CNC and robot control if necessary. Add additional QDS CPUs for a fully scalable solution to large system designs. The key enabling technology for this is Mitsubishi Electric's unique high speed bus that allows dedicated, secure communication between multiple iQ CPUs. This effectively allows them to share data and function as a single system. Furthermore, the operation of this bus is transparent to the designer and has no impact on motion cycle times or PLC scan times. Hence all control processes run in parallel, providing a true multi-processing capability for maximum performance.

# iQ Platform

## Another face of the iQ Platform

The iQ Platform has established itself as groundbreaking technology. The toughest application challenges with multiple types of control can easily be handled by a single iQ controller incorporating a QDS motion CPU alongside other CPU types. Hence large systems such as transfer lines can be engi-



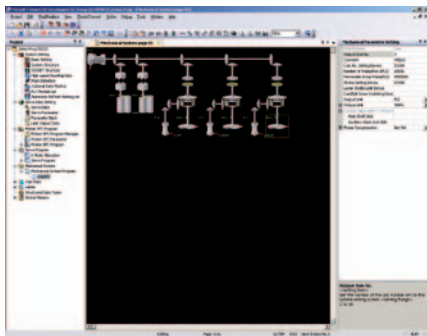
Unique bus technology removes potential system communication bottlenecks

## Motion at the speed of light

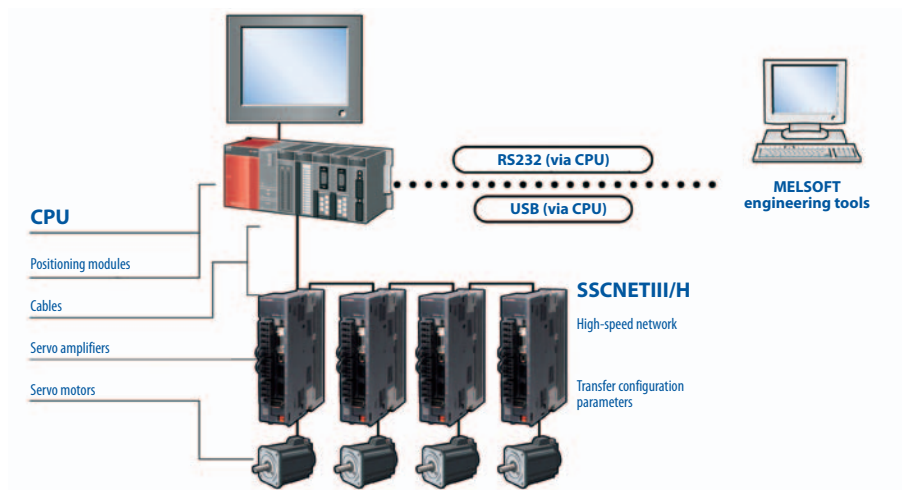
The QDS motion CPU takes full advantage of Mitsubishi Electric's SSCNETIII/H motion control network. This high bandwidth optical fiber network has become a leading choice for motion system designers. It reduces costs by using a simple daisy chain connection directly from the CPU to the amplifiers, while insuring reliability with noise immune optical communications. SSCNETIII/H also permits full transparency of the amplifier configuration and data, allowing simplified monitoring, set-up and maintenance. The network is compatible with the full range of MR-J3-B and MR-J4-B amplifiers & motors, ranging from 50 W to 55 kW (200 V and 400 V).

## Higher productivity

While able to communicate at high speed with other iQ CPUs, of course the QDS is also designed for maximum motion performance. Both axis control cycle time and motion program execution are up to four times faster than previous Mitsubishi Electric designs. This means that any mechanical system has the potential to offer



Mechanical support language allows systems to be described with familiar mechanical components



SSCNETIII/H: Simple connections, lowered cost, high performance

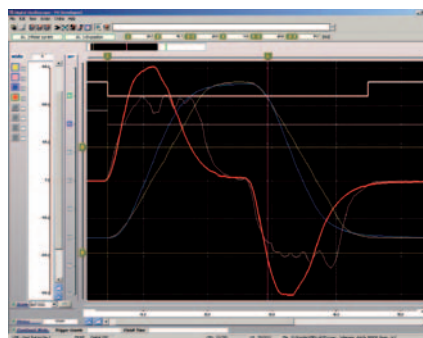
significantly increased productivity just by incorporating an QDS based iQ motion system.

The CPU also benefits from a range of specialist I/O modules that solve specific application issues, such as interrupt signals and manual pulse generator inputs.

## Intuitive engineering

Without a suite of intuitive and efficient engineering tools, hardware performance would provide an incomplete solution. The QDS CPU is backed up by the next generation MT Works2 engineering suite to provide a full set of tools for system development, testing and maintenance.

In addition to engineering tools, the CPU can also use custom operating systems that allow its capabilities to be tailored to the needs of specific application types.

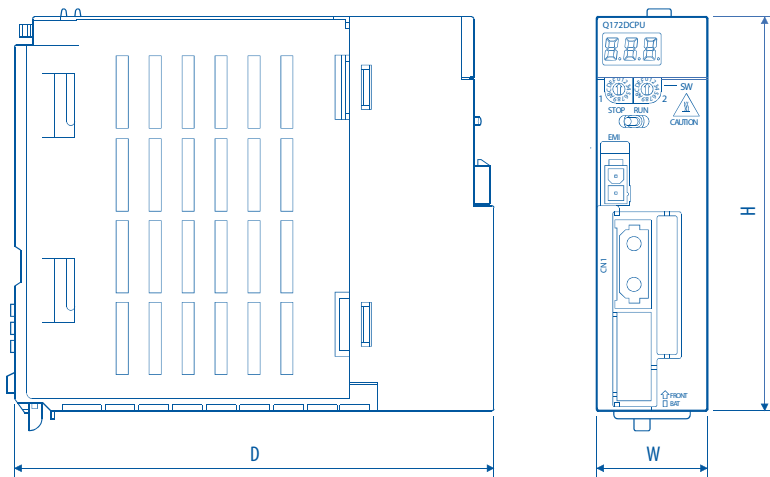


A digital oscilloscope allows system problems to be found quickly

# Specifications

Specifications	Q172DSCPU	Q173DSCPU
Number of control axes	16	32
Processing speed	SV13 0.22 ms (1.–4. axis), 0.44 ms (5.–10. axis), 0.88 ms (11.–16. axis)	0.22 ms (1.–4. axis), 0.44 ms (5.–10. axis), 0.88 ms (11.–24. axis), 1.77 ms (25.–32. axis)
	SV22 0.44 ms (1.–6. axis), 0.88 ms (7.–16. axis)	0.44 ms (1.–6. axis), 0.88 ms (7.–16. axis), 1.77 ms (17.–32. axis)
Interfaces	SSCNETIII (USB, RS232C via PLC CPU)	
Compatible PLC CPUs	Universal model (QnUD(E)(H)CPU)	
Compatible main base units	Multiple CPU high speed main base units (Q35DB, Q38DB, Q312DB)	
Shared memory capacity with PLC CPU	Up to 14 k/16 k words transferred in 0.88ms	
Axis communication	Via SSCNETIII/H (daisy chain connection)	
Compatible amplifiers	MR-J3-B/MR-J4B	
Available motion input modules	Q172DLX (for external servo signals), Q172DEX (for absolute encoders), Q173DPX (for manual pulse generators)	

# Dimensions



Dimensions	D	W	H
Q172DSCPU/ Q173DSCPU	120.3 mm	27.4 mm	120.5 mm

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