

QUANSER MECHATRONIC SYSTEMS BOARD

Prepare Students for Engineering Systems Design and Integration

Mechatronic systems are all around us from industrial robot arms and autonomous cars, to home washing machines. Fundamentally, mechatronic systems are a collection of software, mechanical, and electronic subsystems that form a cohesive functional unit. Unfortunately, these type of systems are often either too complex, abstracted, or dangerous to be used for education. The Quanser Mechatronic Systems Board is designed to provide hands-on experience with a complete mechatronic system in a safe, and academically appropriate setting. The system is composed of two DC motors which direct drive a five-bar linkage. At the end of the manipulator linkage is a downward-facing camera. Together these parts allow the user to delve into the operation of a mechatronic system at every level, from motor interfacing all the way to a complete line following autonomous robotic system. Designed exclusively for the NI ELVIS III platform and LabVIEW™, the board also exposes students to industry-grade instrumentation, image processing and control fundamentals.

Features



NI Part No. 786517-01
NI ELVIS III sold separately



Complete System

Complete mechatronic system from sensor integration and motor control, to image processing and state machines.



Open and Customizable

Access and customize the interfacing and control software using LabVIEW FPGA



Comprehensive Courseware

Includes comprehensive ABET-aligned course resources and LabVIEW files



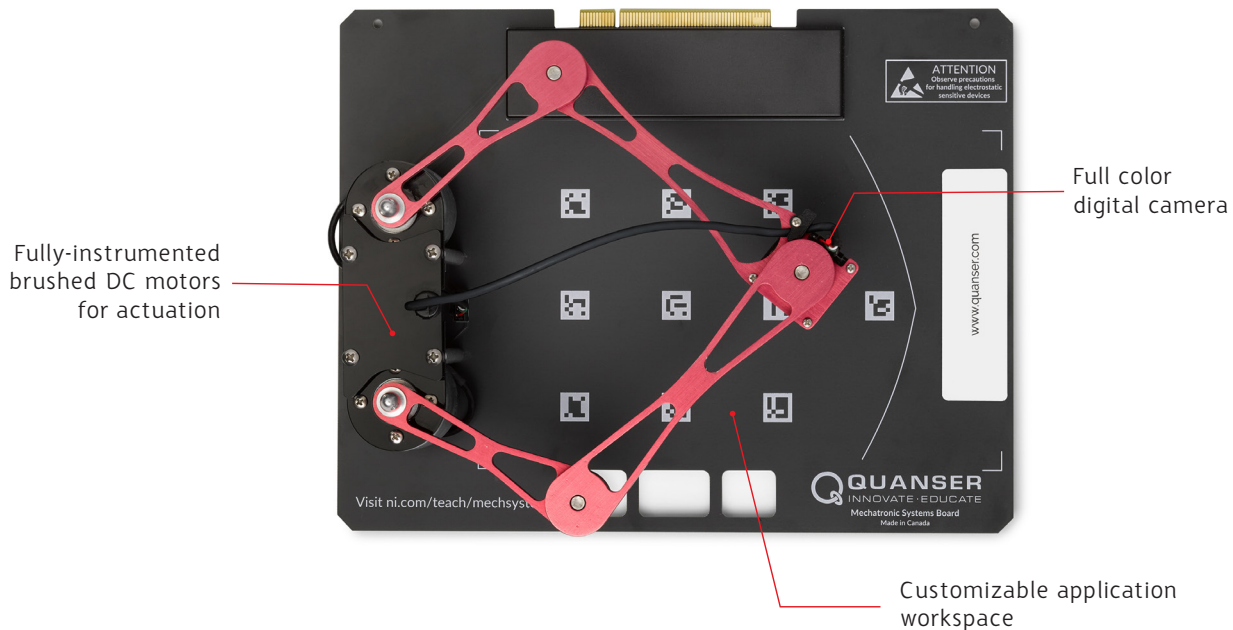
Accelerate Discovery

Learn the fundamentals of interfacing, manipulator control, image processing, and state machines

Courseware

- **Manipulator Control:** Motor interfacing, forward and inverse kinematics, PID motor control
- **Processing Images:** Image thresholding, blob detection, pattern matching
- **System Level Control:** State machines, task-space control, goal directed line following

Product Details



Device Specifications

- Two brushed DC motors with high-resolution encoders
- Full-color digital camera with support for NI-IMAQ tools
- Customizable application workspace with magnetic paper holder

ACCELERATE DISCOVERY WITH THE NI ELVIS III PLATFORM

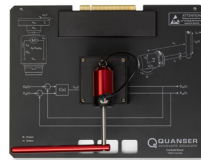
For the full range of Quanser application boards, visit www.ni.com



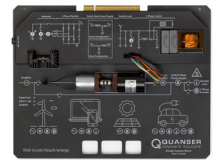
Mechatronic Sensors



Mechatronic Actuators



Controls



Energy Systems

About Quanser:

Quanser is the world leader in education and research for real-time control design and implementation. We specialize in outfitting engineering control laboratories to help universities captivate the brightest minds, motivate them to success and produce graduates with industry-relevant skills. Universities worldwide implement Quanser's open architecture control solutions, industry-relevant curriculum and cutting-edge workstations to teach Introductory, Intermediate and Advanced controls to students in Electrical, Mechanical, Mechatronics, Robotics, Aerospace, Civil, and various other engineering disciplines.

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