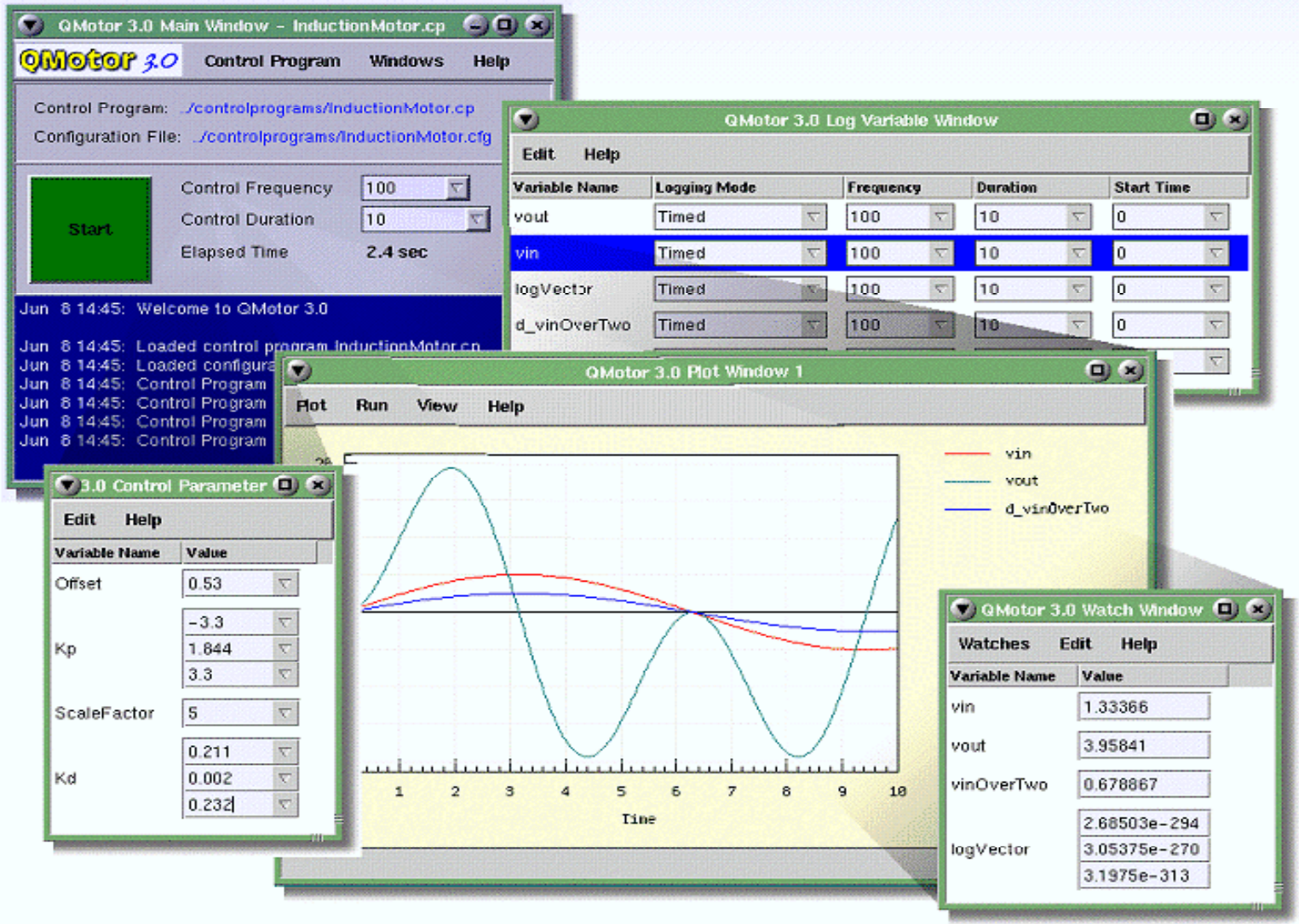
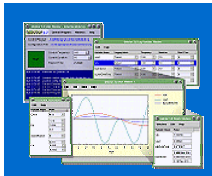
QMotor 3.0

A PC Based Real-Time Multitasking
Graphical Control Environment



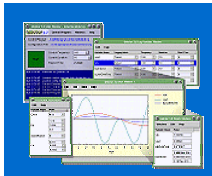


QMotor 3.0

A PC Based Graphical Control Environment

Outline

- Introduction
- Advantages Of The QMotor Design
- Client/Server Architecture
- The QMotor Development Cycle
- Live Demonstration



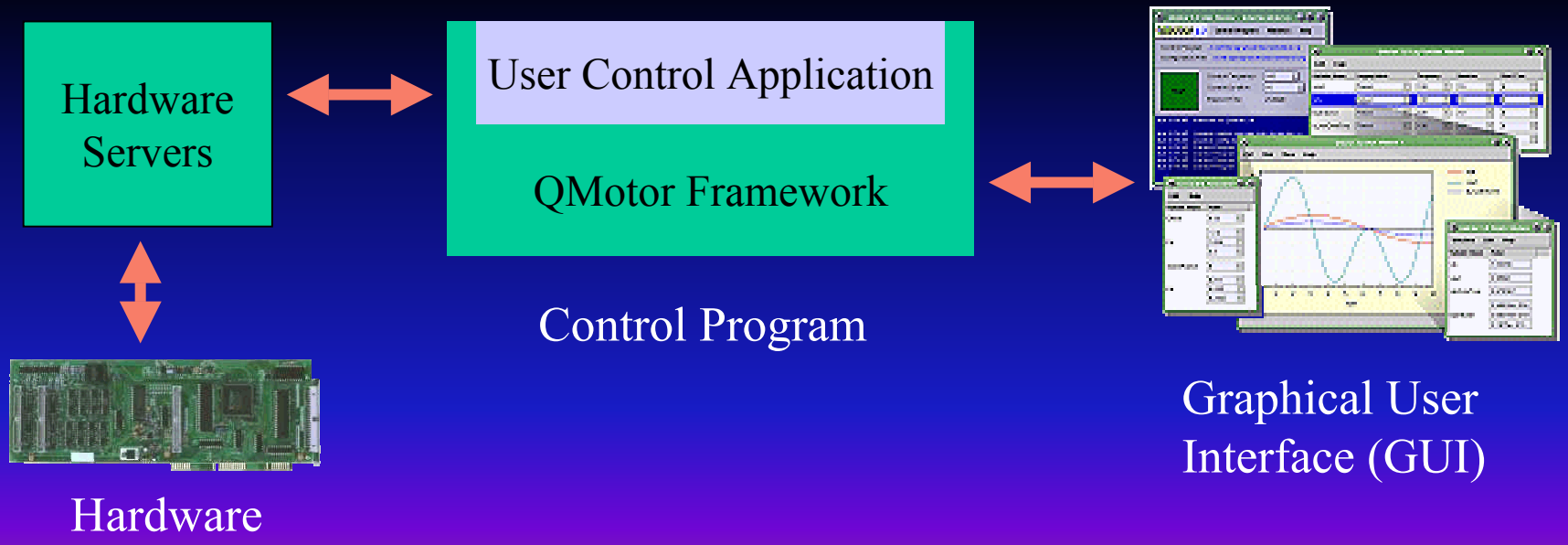
QMotor 3.0

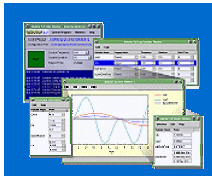
A PC Based Graphical Control Environment

Introduction

QMotor 3.0 is an environment for control development.
It consists of three parts, which run as separate programs:

- The *Control Program* (using the QMotor C++ framework) implements the user control application
- The *Hardware Servers* to access hardware components
- The *Graphical User Interface (GUI)* for control testing and tuning





QMotor 3.0

A PC Based Graphical Control Environment

Advantages of the QMotor 3.0 Design

Hardware Sharing: Multiple Control Programs can share the hardware of a board

Security: The control program doesn't need privileged access to the systems hardware.
Standalone Mode: Running control programs without the GUI

Timing: The GUI can not delay the control program as it runs at a lower priority

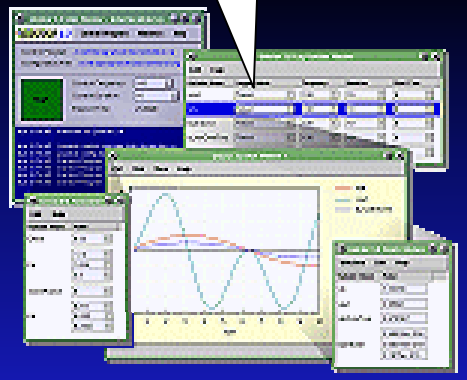
Hardware Servers

User Control Application

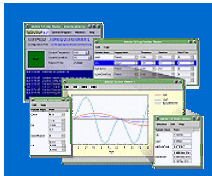
QMotor Framework

Control Program

Hardware



Graphical User Interface (GUI)



QMotor 3.0

A PC Based Graphical Control Environment

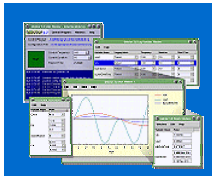
Advantages of the QMotor Concept

Maximum Flexibility

- QMotor is not limited to specific hardware
- The control program can run standalone
- Extensive logging options

Pure PC Based Solution

- No need for DSP boards
- Low hardware costs (PC and hardware boards)
- The PC is a technically advancing technology (speed, availability of hardware and software components)
- Runs on QNX, a high quality real-time operating system



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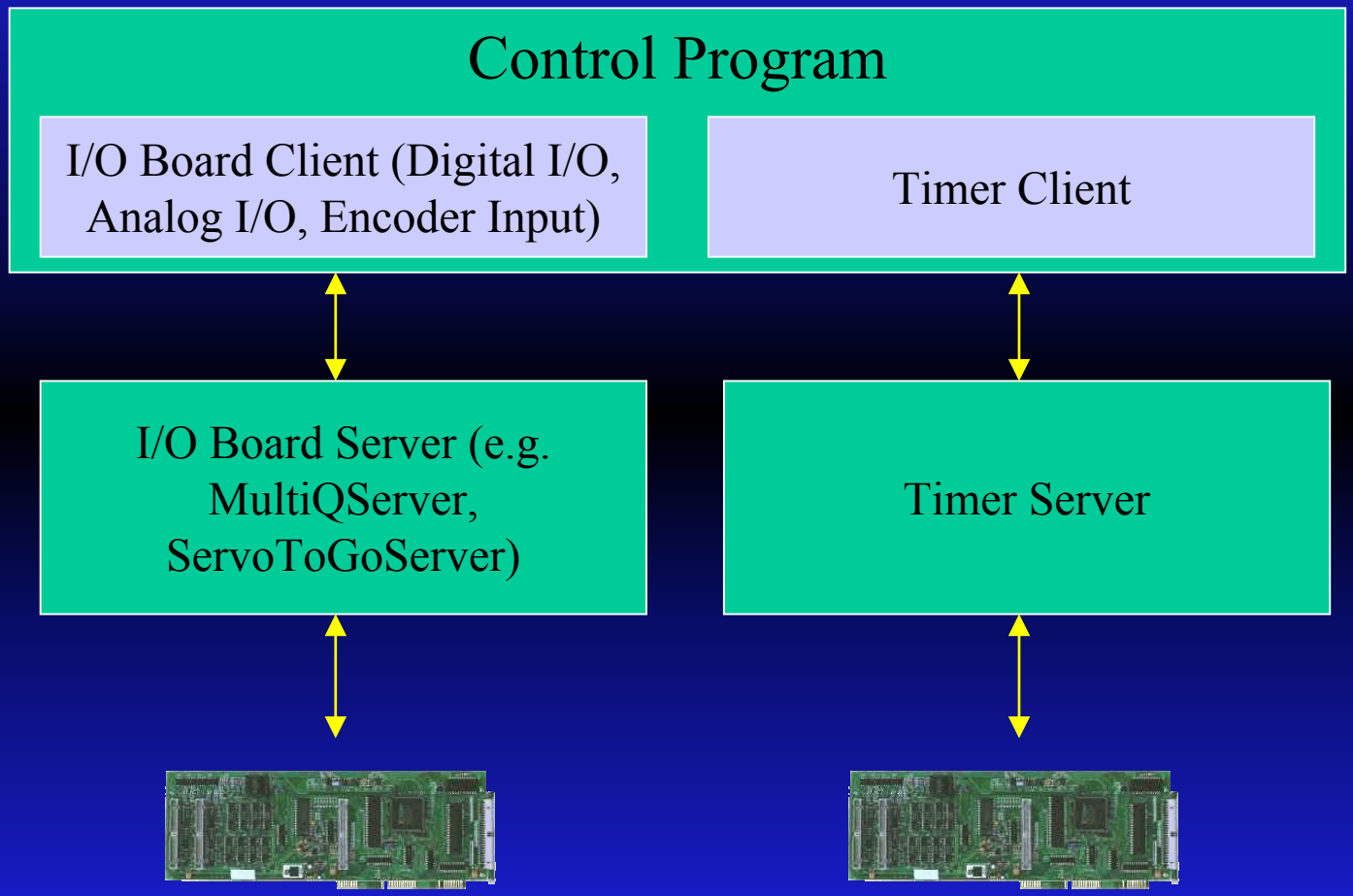
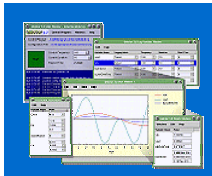
A PC Based Graphical Control Environment

Client/Server Architecture





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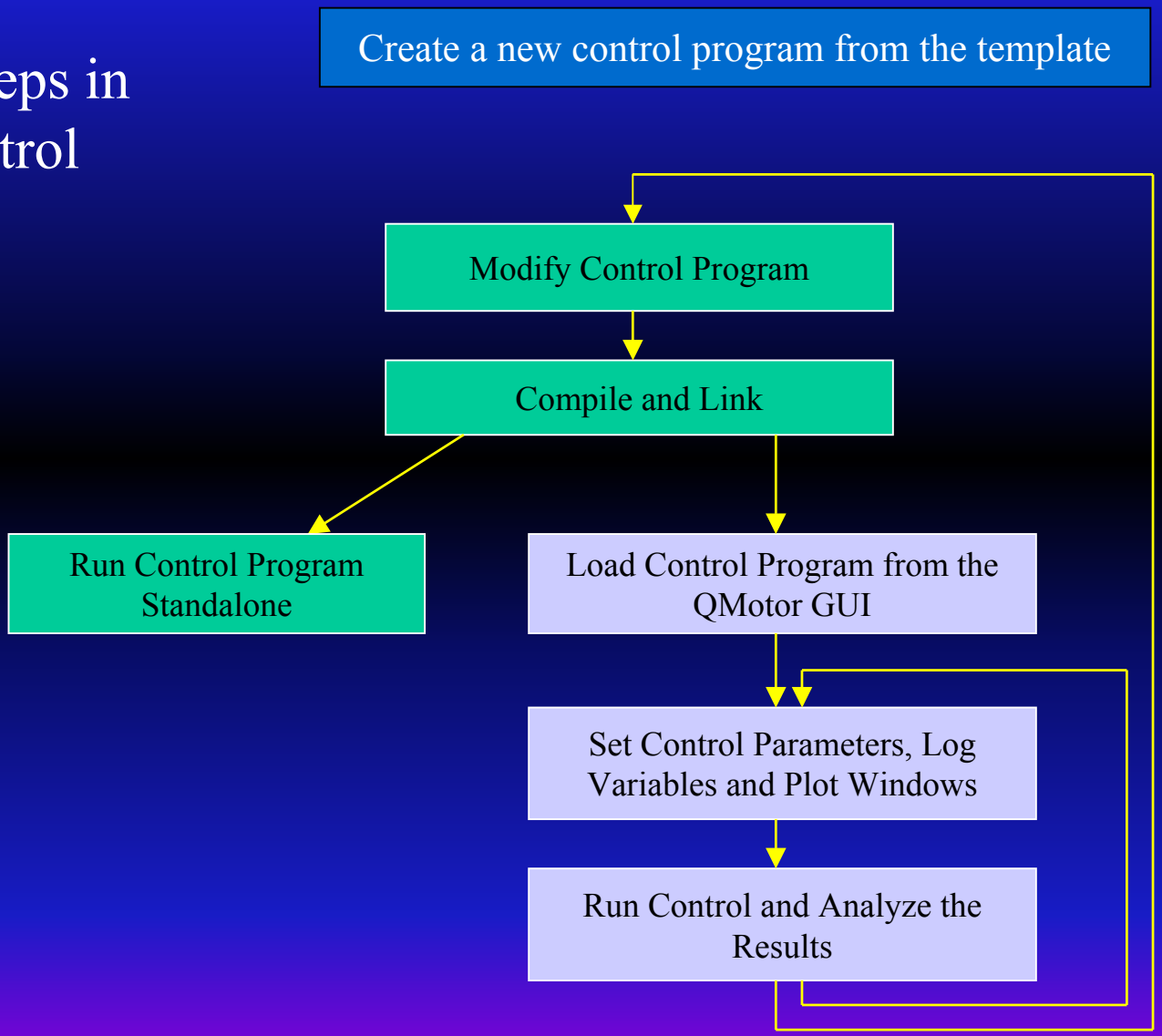
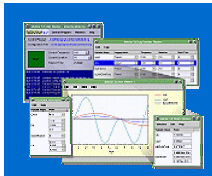
QMotor Development Cycle

What are the steps in developing control programs with QMotor?

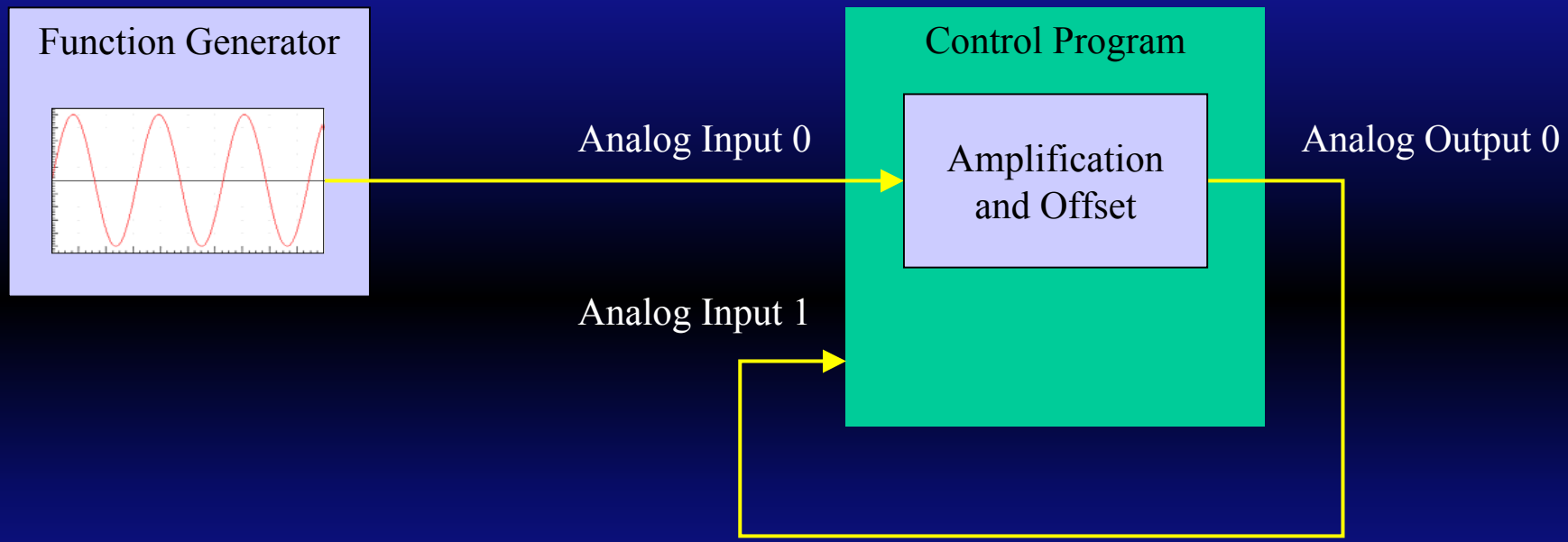


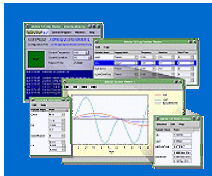


QMotor 3.0

A PC Based Graphical Control Environment

Live Demonstration





QMotor 3.0

A PC Based Graphical Control Environment

The Control Program

Constructor

- Connect to the hardware servers
- Register control and log variables

Start

startControl()

- Initialize variables

control()

Cycle

- Hardware input
- Control calculations
- Hardware output

Stop

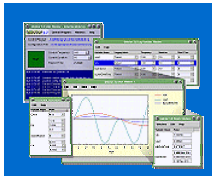
stopControl()

- Zero analog outputs

...or time runs out

Destructor

- Disconnect from the hardware servers



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A PC Based Graphical Control Environment

More Information...

Quality Real-Time Systems

http://qrts.com

info@qrts.com

Online Manual

http://qrts.com/products/qmotor/manual/main.html

QNX Helpviewer