







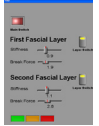
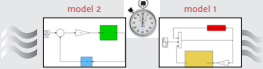



BLOCKSET *	SUGGESTED RESEARCH APPLICATIONS	DESCRIPTION	TECHNICAL CAPABILITIES AND SPECIFICATIONS	
KUKA ROBOT 	<ul style="list-style-type: none"> • Robotic manipulation • Teleoperation 	<p>Using the KUKA Robot Blockset you can control any KUKA robot equipped with RSI (Robot Sensor Interface) through the interactive Simulink® environment without tedious hand coding and cumbersome hardware interfacing.</p> <p>This blockset is not included in the standard QUARC license and is sold separately.</p>	<ul style="list-style-type: none"> • Payload 5 kg • Number of axes 6 • Repeatability <math>\leq \pm 0.02\text{ mm}</math> • Weight 28 kg • Mounting positions floor or ceiling • Controller KR C2sr • Max speed 8.2 m/s 	<ul style="list-style-type: none"> • Ability to command either Cartesian or joint velocity set points • Ability to measure the Cartesian positions, joint angles and joint torques • Ability to set either Cartesian or the joint minimum and maximum velocity limits • KUKA built-in safety checks are still enabled for safe operation
WII REMOTE 	<ul style="list-style-type: none"> • Teleoperation • Robotic manipulation 	<p>The Wiimote (Wii Remote) block reads the state of the Wiimote and outputs the button, acceleration, and Infra Red (IR) camera information. Using this blockset you can easily interface the Wiimote into the controller.</p> <p>This blockset is included in the standard QUARC license.</p>	<p>Data provided as output:</p> <ul style="list-style-type: none"> • X, Y, and Z axis accelerations • Button states • X coordinates of up to four IR points detected by the wiimote IR camera. Valid values range from 0 to 1023 inclusive 	<ul style="list-style-type: none"> • Y coordinates of up to four IR points detected by the wiimote IR camera. Valid values range from 0 to 767 inclusive. • A compatible Bluetooth device must be installed on the PC
SENSABLE PHANTOM® SERIES 	<ul style="list-style-type: none"> • Force feedback virtual reality • Haptically-enabled medical simulations • Teleoperation • Precise robotic manipulation 	<p>The PHANTOM® Blockset lets you control the series of PHANTOM® haptic devices via Simulink®. For added flexibility researchers can combine the Phantom Blockset and Visualization Blockset to enjoy seamless haptics rendering of virtual environments.</p> <p>This blockset is not included in the standard QUARC license and is sold separately.</p>	<p>Supported devices:</p> <ul style="list-style-type: none"> • SensAble PHANTOM Omni • SensAble PHANTOM Desktop • SensAble PHANTOM Premium • SensAble PHANTOM Premium 6DOF 	<ul style="list-style-type: none"> • Send forces and torques in Cartesian or joint space • Read encoder values, position, and joint angles • Send commands in two different work spaces to the Phantom device • The block outputs the gimbal angles of the device plus the values associated with the buttons and the 7 DOF available on the device (thumb-pad or scissors)
NOVINT FALCON 	<ul style="list-style-type: none"> • Force feedback virtual reality • Haptically enabled medical simulations • Teleoperation 	<p>The Novint Falcon Blockset is used for implementing control algorithms for the Falcon haptic device. Using the Blockset significantly simplifies the task of designing controllers for the Falcon.</p> <p>This blockset is included in the standard Quarc license.</p>	<p>Data provided as output:</p> <ul style="list-style-type: none"> • Position: X, Y, and Z position in Cartesian coordinates • Button information: Whether a button is currently pressed or not • Force: X, Y, and Z forces applied by the Falcon end-effector 	
VISUALIZATION 	<ul style="list-style-type: none"> • Virtual reality rendering • Game and medical simulation • Simulation of mechanical components • Data fusion • Real-time status displays of physical hardware • Virtual cockpit for aerial vehicles 	<p>The Visualization Blockset creates 3D visualizations of simulations or actual hardware in real-time. By combining meshes and textures, you can create objects to seamlessly integrate high-performance graphics with real-time controllers. Comprehensive documentation and examples along with additional content are provided to help new users get started and master this blockset quickly. QUARC Visualization blockset is used in the Virtual Plant Simulation of selected Quanser plants such as SRVO2 and Active Suspension.</p> <p>This blockset is included in the standard QUARC license.</p>	<ul style="list-style-type: none"> • Remotely connect to a visualization server with multiple clients • No interference with the operation of your real-time controller • Plugins provided for Blender and Autodesk's 3ds Max 2008, 2009 and 2010 • Set different material properties such as diffuse color, opacity, specular color, shininess, and emissivity. • Texture map support for png, jpg, tiff, and bmp. 	<ul style="list-style-type: none"> • X3D support • Configurable mouse and keyboard interface for manually navigating around the environment • Performance far exceeds TMW's Virtual Reality toolbox
NATURAL POINT OPTITRACK 	<ul style="list-style-type: none"> • Image-based control and localization • Autonomous navigation and control • Fault detection 	<p>The OptiTrack Blockset allows motion capture and tracking by using 3 or more synchronized infrared (IR) cameras that capture images containing reflective markers within a workspace. The blockset can be used to track either individual markers or rigid bodies. This Blockset makes it easy to conduct vision-based control experiments in real-time, especially for objects that were previously difficult to track, such as indoor autonomous vehicles.</p> <p>This blockset is not included in the standard QUARC license and is sold separately.</p>	<ul style="list-style-type: none"> • Up to 16 cameras can be connected and configured for single or multiple capture volumes • Capture areas up to 400 square feet • Single point tracking for up to 80 markers, or 10 rigid-body objects • Typical calibration time is under 5 minutes • Position accuracy on the order of mm under typical conditions 	<ul style="list-style-type: none"> • USB 2.0 connectivity to ground station PC • Up to 100 fps tracking
PGR CAMERAS 	<ul style="list-style-type: none"> • Image-based control and localization • Autonomous navigation and control • Image recognition • Mapping • Obstacle detection and avoidance • Visual servoing and tracking • Vision feedback 	<p>The Point Grey Research (PGR) Blockset is used to acquire images from some of the Point Grey Research cameras. QUARC also provides image processing blocksets that can be used to find objects of a given color within a source image or convert images from one format to another.</p> <p>This blockset is included in the standard QUARC license.</p>	<ul style="list-style-type: none"> • Support for Draganflyer 2 HI-COL and the FireflyMV • Frame rate selection from 7.5 fps to 60 fps • Resolutions from 640 x 480 to 1024 x 768, • Color or grayscale, and custom image (subimage) sizes supported for faster framerate 	
GPS 	<ul style="list-style-type: none"> • Localization • Autonomous navigation and control 	<p>The GPS Blockset allows GPS receivers to be easily accessed, thereby adding GPS localization to an experimental platform. This Blockset integrates with Ublox GPS devices as well as NMEA compliant GPS devices.</p> <p>This blockset is not included in the standard Quarc license and is sold separately.</p>	<p>Data provided as output,</p> <ul style="list-style-type: none"> • GPS position (latitude, longitude, altitude) • Number of visible satellites (dilution of precision data) • Accuracy information (dilution of precision – DOP) <p>Typical accuracy 1-3m (WAAS)</p>	
ALTIA 	<ul style="list-style-type: none"> • GUI Design [e.g. Cockpit] 	<p>The Altia Design Blockset enables the user to interact with the real-time code from Altia GUIs. Unlike the MATLAB® GUIs, MATLAB® and Simulink® are not required when using Altia GUIs. This blockset gives you the tools you need to generate complete production systems without writing a single line of code.</p> <p>This blockset is included in the standard QUARC license.</p>	<ul style="list-style-type: none"> • Enables the deployment of real-time executables with GUI • Support for setting and getting values [e.g., knobs, displays, scopes, and other inputs and outputs] 	<ul style="list-style-type: none"> • Support for setting values [i.e. Meters and other outputs] • Features the Quanser Plot library for Altia
DYNAMIC RECONFIGURATION 	<ul style="list-style-type: none"> • Mission reconfiguration [e.g., for Unmanned Vehicle Systems] • Fault recovery • Safety watchdog 	<p>The Dynamic Reconfiguration Blockset lets you dynamically switch models on the target machine within a sampling interval. A running model may be replaced with another model while ensuring continuity of states between both with no interruptions [i.e. no skipped sample]. For a demo and tutorial on the Dynamic Reconfiguration blockset request a free trial of QUARC at www.quanser.com/QUARC.</p> <p>This blockset is not included in the standard QUARC license and is sold separately.</p>	<ul style="list-style-type: none"> • Continuity of states between the model being switched-out and the model being switched-in, as a necessary condition to the system stability • Switching within one sampling interval, as a necessary condition to the system stability • Dynamic reconfiguration can be triggered either automatically [e.g., from a supervisory model] or manually 	<ul style="list-style-type: none"> • Dynamic Reconfiguration can be triggered either locally or remotely [i.e., on a remote target]
DENSO ROBOT 	<ul style="list-style-type: none"> • Robotic manipulation • Teleoperation 	<p>Using the Denso Robot Blockset you can control the articulated Denso robot through the interactive Simulink® environment without tedious hand coding and cumbersome hardware interfacing.</p> <p>This blockset is not included in the standard QUARC license and is sold separately.</p>	<ul style="list-style-type: none"> • Supported Model VP6242G • Payload 2 kg • Number of axes 6 • Repeatability = $\pm 0.02\text{ mm}$ • Weight 4 kg • Mounting positions floor or ceiling • Controller Quanser Open-Architecture Controller • Max speed 3.9M/sec 	<ul style="list-style-type: none"> • Ability to command joint position or velocity and controller gains to the robot • Ability to read robot joint positions and robot status • Ability to set either Cartesian or the joint minimum and maximum velocity limits • Denso built-in safety checks are still enabled for safe operation

* Please note that prices for blocksets may vary. For more information or to request a quote please contact sales@quanser.com.