

Q2-USB, Q8-USB, & QPIDE

Data acquisition boards optimized for real-time measurement and control

Quanser's ground-breaking data acquisition technology delivers reliable real-time Hardware-in-the-Loop (HIL) performance. With an integrated terminal board and USB connectivity, our Q2-USB and Q8-USB DAQs offer easy and quick access to signals. Closed-loop rates of up to 2 kHz, low I/O latency times, and easy connectivity make the Q2-USB and Q8-USB ideal for teaching controls concepts. Alternatively, the PCI-based QPIDE offers researchers a precise way to acquire large amounts of data. The QPIDE is suitable for complex controls applications such as aerospace and haptics where sampling rates of 10 kHz can be achieved due to ultra-low I/O latency and simultaneous sampling of each I/O type.

With a wide range of inputs and outputs, you can easily connect and control a variety of devices instrumented with analog and digital sensors, including encoders. Quanser data acquisition devices are fully supported in Simulink® by a QUARC® Simulink blockset - the most efficient way to develop, deploy and validate real-time applications on hardware. Furthermore, the Quanser HIL SDK provides APIs for C, C++, .NET, and MATLAB®.

Features



Q2-USB

Q8-USB



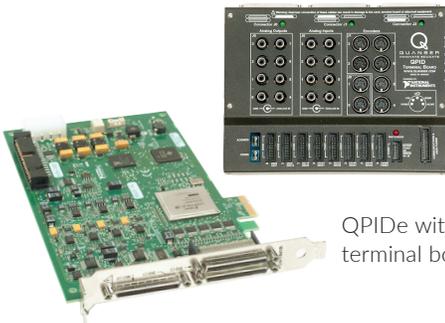
Cost effective

Processing via CPU rather than expensive and inflexible DSP



Precise

Optimized for real-time control performances



QPIDE with terminal board



Simple

Quick-connect terminal board supporting a wide range of analog and digital IO



Open

Design in MATLAB®/Simulink® via QUARC®, C, C++, or .NET on Windows

Device Specifications

| | Q2-USB | Q8-USB | QPIDe |
|---|------------------|------------------|----------|
| Connectivity | USB 2.0 | USB 2.0 | PCIe |
| Analog Inputs | | | |
| Number of channels | 2 | 8 | 8 |
| Resolution | 12-bit | 16-bit | 16-bit |
| Input range | +/- 10 V | +/-5 V, +/-10 V | +/- 10 V |
| Analog Outputs | | | |
| Number of channels | 2 | 8 | 8 |
| Resolution | 12-bit | 16-bit | 16-bit |
| Output range | +/- 10 V | +/-5 V, +/-10 V | +/- 10 V |
| Encoder Inputs | | | |
| Number of channels | 2 | 8 | 8 |
| Max count frequency in X4 quadrature decoding | 10 MHz | 99 MHz | 40 MHz |
| Digital IO | | | |
| Number of channels | 8 (DI) 8 (DO) | 8 (DI) 8 (DO) | 56 (DIO) |
| PWM Outputs | | | |
| Number of channels | 2 | 8 | 8 |
| Resolution | 16-bit | 16-bit | 16-bit |
| Output low (max) | 0.40 V | 0.55 V | 0.40 V |
| Output high (min) | 2.40 V | 4.50 V | 2.40 V |
| Min frequency | 2.4 Hz | 24 Hz | 9.6 Hz |
| Max frequency | 40 MHz | 49 MHz | 20 MHz |
| SPI | | | |
| Max data rate | - | - | 10 MHz |
| Bit width range | - | - | 1-32 bit |
| General Purpose Counter/Timers | | | |
| Number of channels (16-bit) | - | - | 2 |
| Resolution (16-bit) | - | - | 800 ns |
| Number of channels (32-bit) | - | - | 2 |
| Resolution (32-bit) | - | - | 25 ns |

About Quanser:

For 30 years, Quanser has been the world leader in innovative technology for engineering education and research. With roots in control, mechatronics, and robotics, Quanser has advanced to the forefront of the global movement in engineering education transformation in the face of unprecedented opportunities and challenges triggered by autonomous robotics, IoT, Industry 4.0, and cyber-physical systems. Quanser is unique in its approach. Deploying an extensive portfolio of advanced technology and IP, Quanser has distinguished itself as the only commercial organization that offers a comprehensive, academically sound platform for delivering programs in these emerging fields in a timely and rational way. Increasingly Quanser is playing a leadership role within the global community of engineering Deans, and the progressive education leadership as our academic achievements have positioned the company as true colleagues as opposed to conventional vendors.

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