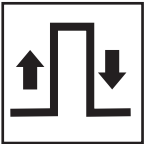


Firmware Modules

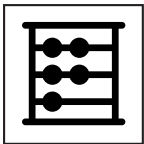
The PICOSCALE provides a number of unique firmware modules that can be linked almost arbitrarily. Ultra-fast response times are realized as all modules directly run on the controller itself to easily set up complex experiments without programming software code.



Advanced Trigger

Fast Trigger Pulse Processing for:

- Synchronization with master clock of external devices
- Triggered data acquisition
- Alert system in case of unforeseen events, e.g. loss of optical signal, to be used as an emergency stop of external motion systems



Calculation System

Real-time Data Processing for:

- Calculation of angles
- Scaling of results
- Output of position data via the GPIO interface within control loops
- Output of functions based on user defined look-up tables



Signal Generator

Arbitrary Function Generator for:

- Basic signal generator functionality (sine, square, sawtooth, custom)
- Excitation of targets and analysis of their frequency response with 1 MHz to 2.5 MHz



Clock Generator

Generate Your Own System Clock for:

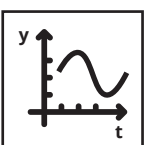
- Timing of internal or external processes
- Generation of periodic trigger events with 1 MHz to 10 MHz



Counter

Counter Module Used for:

- Counting of user defined trigger events
- Counting the clock pulses between trigger events
- Counting of system clock pulses for absolute timing of data



Stream Generator

Configuration of Data Stream to User PC:

- Up to 10 MHz data rate
- Many options to filter data
- Connected to trigger module for synchronized data acquisition