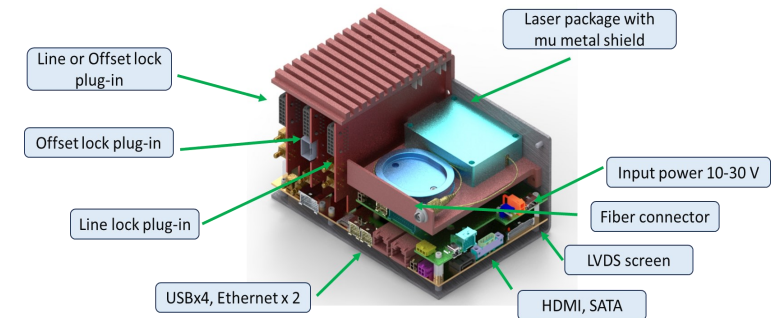


The **Universal platform for quantum applications** enables precise control of multiple lasers used for Position, Navigation and Time measurements or Atomic clocks. It builds Redwave Labs' Universal Platform for Spectroscopic Instrumentation, adding capabilities to lock lasers to atomic or molecular transitions, control precise laser frequencies by **offset locking**. It retains all power, data processing, signal acquisition and control, data storage and external communications features.

- All laser control modules are powered from a single 10-30V power source provided by backplane with integrated charging capabilities.
- Up to **three line lock and offset lock modules** can be combined

Linux based Kontron CPU (COM Express) with additional high end FPGAs and MCUs allows to process all signals in real time.



Applications

Position, Navigation and Time measurements, Atomic clocks, Laser frequency stabilization, Portable laser instruments

The full system has the following parts:

1. Com Express Type 10 CPU, with dedicated FPGA with synchronous 2MS/s 16 bit DAC and ADCs, 24 bit ADC with 1 kS/s. Integrated digital PID controller if required
2. Line lock controller including DDS, mixer, FIR and demodulator. Digital PID control for lock. Includes low noise laser and temperature controller
3. Offset lock controller including DDS, mixer, PLL and precise oscillator. Hybrid PID loop. Full digital access to clock and DDS. Includes low noise laser controller and temperature controller. Frequencies up to 10GHz.
4. Full power management with integrated battery charger. 10-30 DC input voltage.
5. Linux OS with full set of libraries and extensive examples.