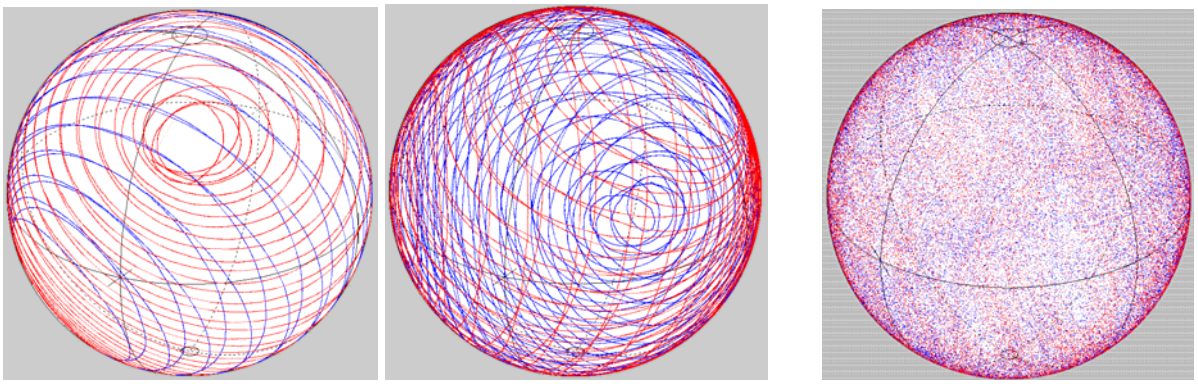
EPS1000 series

Polarization Scramblers

- Ultrafast endless optical polarization scrambling with **40 ns updating intervals**
- Continuous, quasi-steady endless polarization trajectories 0.01 rad/s ... **10000 krad/s** (20000 krad/s with reduced accuracy). **Small steps, e.g., 0.02 rad at 500 krad/s.**
- Six (or four) electrooptic quarterwave plates (QWP) and one halfwave plate (HWP) with adjustable rotation speeds (QWP: −999999.99 ... +999999.99 rad/s; HWP: −10000.00 ... +10000.00 krad/s)
- Optical frequency and wavelength can be preset for most accurate waveplate operation, at least from C band to L band (186.2 ... 196.0 THz, 1529 ... 1610 nm).
- Low power consumption: ~10 W (+5 V from included power supply 100 ... 240 V)
- Differential group delay (DGD) sections consisting of polarization-maintaining fibers (PMF) can likewise be delivered for the setting up of PMD emulators. By the usage of several EPS1000 and DGD sections PMD is emulated highly realistically.
- Available as a standalone unit in desktop case, as a plug-in card or as an intellectual property core
- Operation of standalone unit via control buttons or USB (software is included). Several standalone units can be controlled simultaneously by the graphical user interface (see p. 2) or by Matlab™. Speeds of rotating and positions of stopped waveplates can be set, saved and loaded.
- Serial Peripheral Interface (SPI) permits realtime operation.
- In synchronous scrambling mode, user-generated tables with sets of waveplate positions can be loaded. Following an external trigger event (3.3 V LVCMOS signal applied at BNC connector, or SPI command) the sets are executed sequentially at specified instants (granularity: 40 ns; minimum delay until next execution instant: 200 ns). This is useful for recirculating loop experiments.
- In triggered scrambling mode, the sets are executed cyclically one by one upon external trigger events or USB commands (minimum delay until next execution instant: 200 ns). An application example are polarization-dependent loss (PDL) and Mueller/Jones matrix measurements.
- Contact us for special needs.



Slow HWP operation — Fast HWP operation

Exemplary output trajectories on Poincaré sphere

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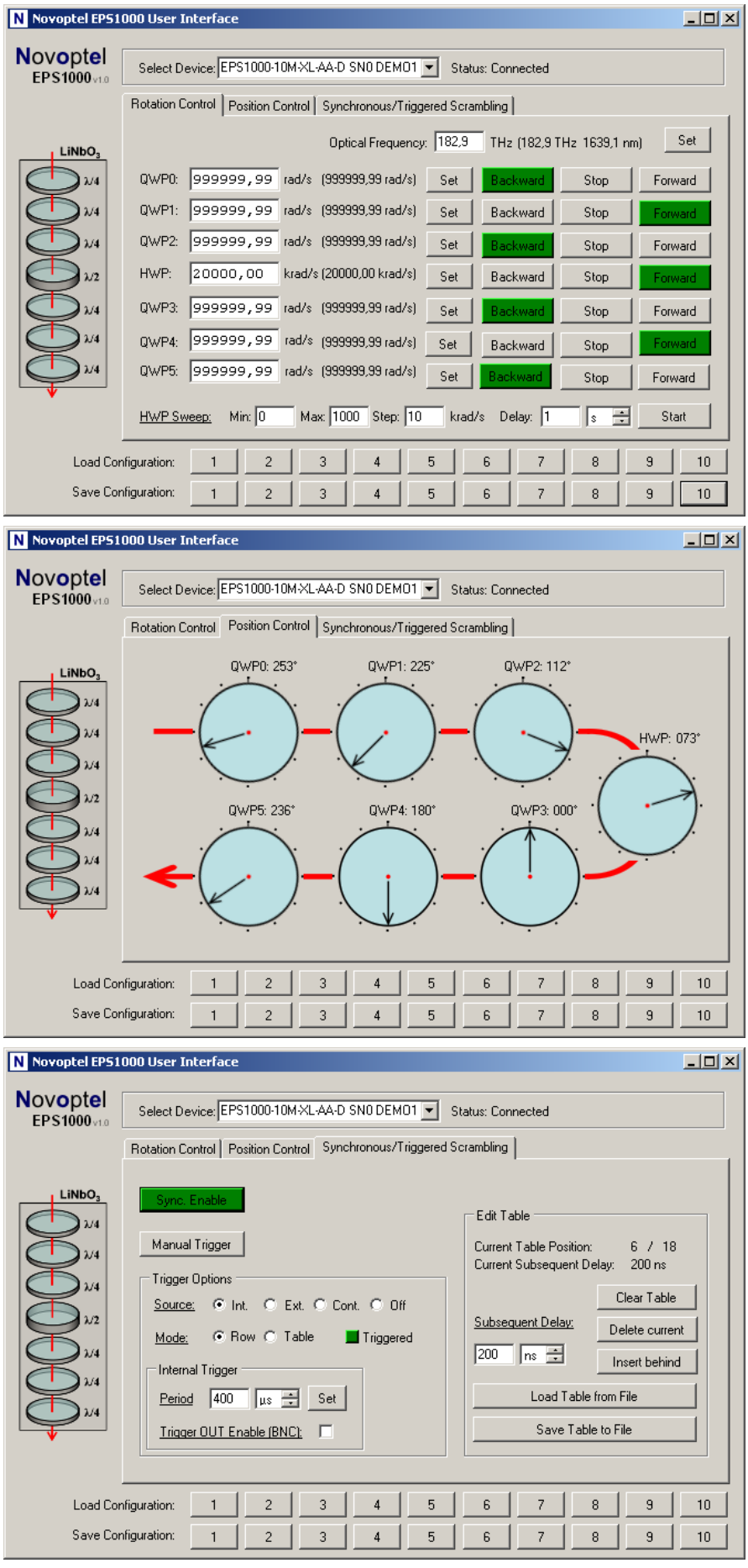

USB-operated graphical user interface with various operation modes