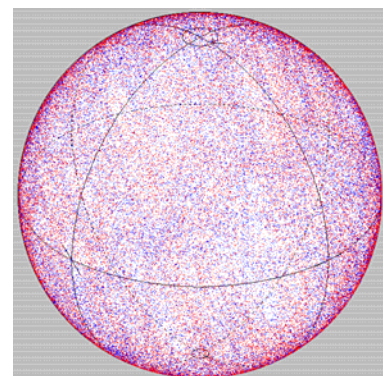
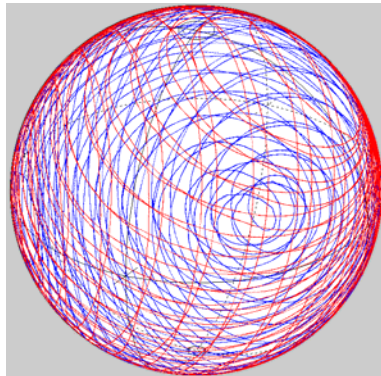
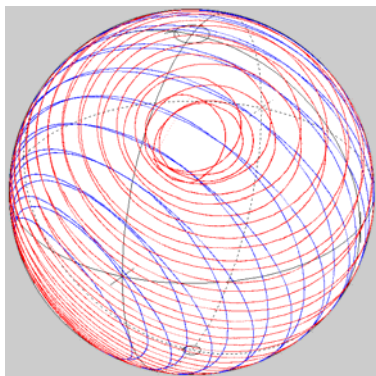


EPS1000 series Polarization Scramblers

- 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.**
- 6 electrooptic quarterwave plates (QWP) and 1 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.
- **NEW: EPX1000 = cost-saving desktop unit with combined functionalities of EPS1000 and 40...100 krad/s polarization controller and demultiplexer EPC1000**
- Contact us for special needs.



Slow HWP operation

Fast HWP operation

Exemplary output trajectories on Poincaré sphere



Ordering Information:



800 Village Walk #316
Guilford, CT 06437
Ph: 203-401-8093

Email orders to: sales@xsoptix.com
Fax orders to: 800-878-7282

Novoptel GmbH
EIM-E
Warburger Str. 100
33098 Paderborn
Germany
Tel. +49 5251 60 2245
Fax +49 5251 60 5827
www.novoptel.com
info@novoptel.com

Novoptel EPS1000 User Interface

Select Device: **EPS1000-10M:XL-FF-D SN1 DEM01** Status: Connected

Rotation Control | Position Control | Synchronous/Triggered Scrambling

Optical Frequency: **193.2** THz (193.2 THz 1551.7 nm) **Set**

| | | | | | |
|-------|-----------------------------------|-----|----------|------|---------|
| QWP0: | 999999,99 rad/s (999999,99 rad/s) | Set | Backward | Stop | Forward |
| QWP1: | 123456,78 rad/s (123456,78 rad/s) | Set | Backward | Stop | Forward |
| QWP2: | 214365,87 rad/s (214365,87 rad/s) | Set | Backward | Stop | Forward |
| HWP: | 20000,00 krad/s (20000,00 krad/s) | Set | Backward | Stop | Forward |
| QWP3: | 876543,21 rad/s (876543,21 rad/s) | Set | Backward | Stop | Forward |
| QWP4: | 785423,12 rad/s (785423,12 rad/s) | Set | Backward | Stop | Forward |
| QWP5: | 432109,87 rad/s (432109,87 rad/s) | Set | Backward | Stop | Forward |

HWP Sweep: Min: **0** Max: **1000** Step: **10** krad/s Delay: **1** s **Start**

Load Configuration: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

Save Configuration: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

Novoptel EPS1000 User Interface

Select Device: **EPS1000-10M:XL-AA-D SN0 DEM01** Status: Connected

Rotation Control | Position Control | Synchronous/Triggered Scrambling

Optical Frequency: **193.2** THz (193.2 THz 1551.7 nm) **Set**

Schematic Diagram:

- QWP0: 253°
- QWP1: 225°
- QWP2: 112°
- HWP: 073°
- QWP5: 236°
- QWP4: 180°
- QWP3: 000°

Load Configuration: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

Save Configuration: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

Novoptel EPS1000 User Interface

Select Device: **EPS1000-10M:XL-AA-D SN0 DEM01** Status: Connected

Rotation Control | Position Control | Synchronous/Triggered Scrambling

Sync. Enable

Manual Trigger

Trigger Options:

Source: Int. Ext. Cont. Off

Mode: Row Table Triggered

Internal Trigger

Period: **400** μ s **Set**

Trigger OUT Enable (BNC):

Edit Table

Current Table Position: **6 / 18**

Current Subsequent Delay: **200** ns

Clear Table

Subsequent Delay: **200** ns **Delete current**

Insert behind

Load Table from File

Save Table to File

Load Configuration: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

Save Configuration: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

USB-operated graphical user interface with various operation modes