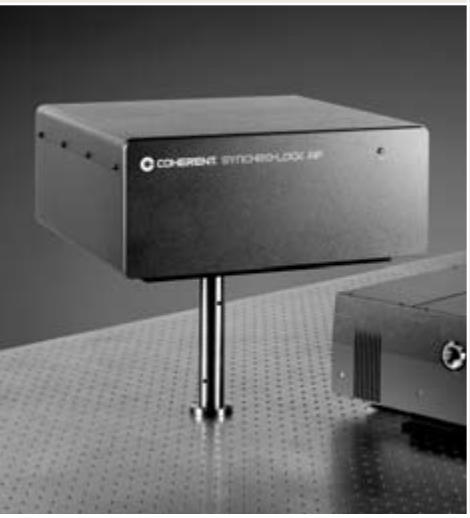
Synchrolock-AP

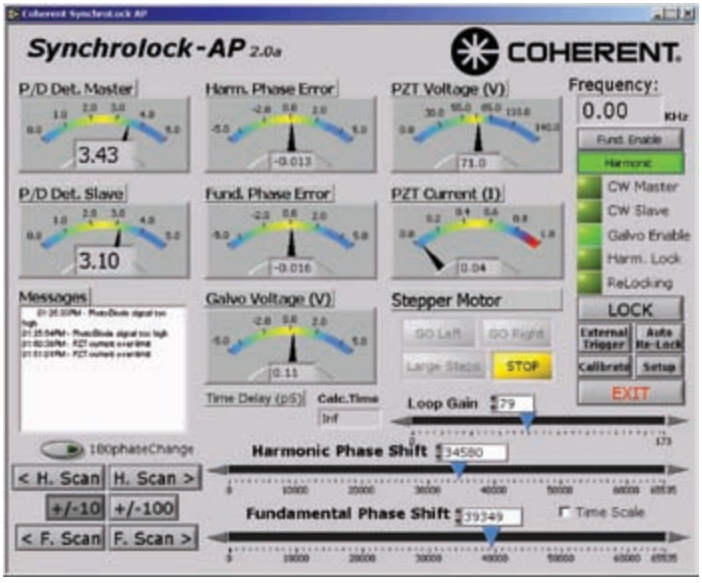
Synchronization Accessory for Mira and Micra Ti:Sapphire Oscillators



Features

- The Synchrolock-AP accessory locks the pulse repetition rate of one "Slave" Mira or Micra laser to another "Master" Mira or Micra laser, or to a "Master" external RF source
- Femtosecond (Mira and Micra) and/or picosecond (Mira only) operation
- Three cavity length actuators provide jitter stabilization over a broad bandwidth and large dynamic range
- User adjustable delay between locked pulse trains of up to 13 ns with around 22 fs resolution (for a 76 MHz cavity)
- Simple fiberoptic coupling of slave output beam to the Synchrolock AP detection system results in minimal losses and ease of use
- Unique feedback locking mechanism locks to the 9th harmonic of the input signal for enhanced signal to noise performance and tighter synchronization between slave and master oscillators

GUI for Synchrolock-AP



Superior Reliability & Performance

Synchrolock-AP

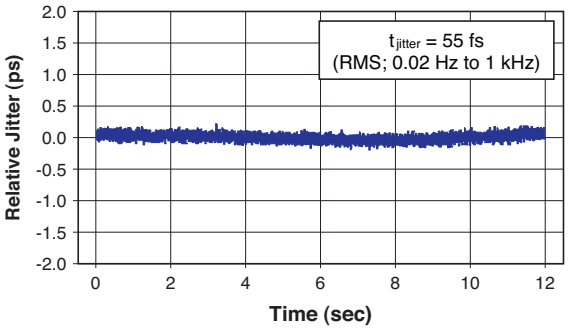
Synchronization Accessory for Mira and Micra Ti:Sapphire Oscillators

Specifications[1,2,3,4,5]

	Slave Oscillator Jitter		
	Mira (fs)	**Mira (ps)**	**Micra**
Master Oscillator			
Mira (fs)	<250	<250	<250
Mira (ps)	<250	<250	<250
Micra	<250	<250	<250
rf Source[6,7] (low harmonic content)	<550	<750	<550
rf Source[7,8] (high harmonic content)	<300	<500	<300

[1] Jitter specification is RMS (.02 to 160 Hz) over 1 minute acquisition time assuming Gaussian statistics. Jitter values are in femtoseconds.
[2] Jitter values are measured using the time-averaged cross-correlation between slave and master optical outputs with the Synchrolock-AP operating in harmonic lock.
[3] Specifications are based on use of isolation optical table, solid-state chillers, and Verdi oscillator pumping.
[4] Specifications apply to an oscillator (laser or external) synchronization signal between 70 MHz and 90 MHz.
[5] Mira specifications apply to X-Wave tuning range (700 nm to 980 nm). Specifications cover mixed wavelength systems in the X-Wave range.
[6] Electronic external sync signal (low harmonic content) into optional slow trigger/oscillator board.
[7] Fundamental external electronic sync signal input requirements: 0 to +10 dBm amplitude into 50Ω, <-100 dBc/Hz phase noise at 1 KHz from carrier.
[8] Electronic external sync signal (9th harmonic content >-20 dBm) into "COMB IN" input of the controller.

Example showing relative jitter between pulse trains from two synchronized Mira-900 lasers



Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all Synchrolock-AP accessories. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative.

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