UOC Series

ULTRAFAST OPTICAL CLOCKS

PriTel's UOC Series of Ultrafast Optical Clocks are easy-to-use actively-mode-locked fiber lasers that provide high pulse-repetition frequencies and high average output powers for 1550 nm time-division-multiplexed communications R&D.

An internal micro-computer monitors the optical pulses and maintains mode-locking. After initial setup, the UOC requires no supervision.

The Quick-Change Pulsewidth feature is standard on all UOC models, enabling the user to change the operating pulsewidth of the UOC within minutes just by replacing a self-aligning cartridge.

A kit of all four standard cartridges is available at a discount. Please inquire about cartridges for special pulsewidths.

PriTel

Specifications

UOC

Pulse repetition rate	1, 2.5 fixed; 5-14, 5-20, 38-43 GHz, tunable	
Average output power	Varies with pulsewidth and pulse repetition rate (e.g., >10 mW at 2.5 ps and 10 GHz)	
Sideband suppression	>70 dB	
Pulsewidth (ps)*	*Spectral width (nm)*	*Tunable wavelength (nm)*
≤1.6	1.7	1545-1560**
≤2.5	1.0	1540-1560
≤5.0	0.5	1530-1560
or ≤10.0	0.3	1530-1560
Optical		
Gain medium	Er-doped silica fiber	
Pump source	Diode laser	
Connectors	FC/APC (other connectors available on request)	
Environmental		
Operating temperature	+15 to 30°C	
Storage temperature	-20 to 50°C	
Electrical/ Mechanical		
Operating Voltage	85-264 VAC at 47-63 Hz	
Power consumption	<250 W	
Dimensions (2U)	9 cm x 48 cm x 38 cm	
Weight	15 kg	

The UOC Series provides front-panel wavelength tuning, clock synchronization, and three secondary optical outputs for monitoring system performance by a photodiode, optical spectrum analyzer, or power meter. Normal operation of the UOC Series requires an external RF synthesizer or clock, supplied by the customer.

* All four pulsewidths are included in the optional Quick-Change Filter Cartridge kit.

** The UOC will operate from 1535-1560 nm, but the pulsewidth will vary from the specified value at wavelengths below 1545 nm.

PriTel, Inc.
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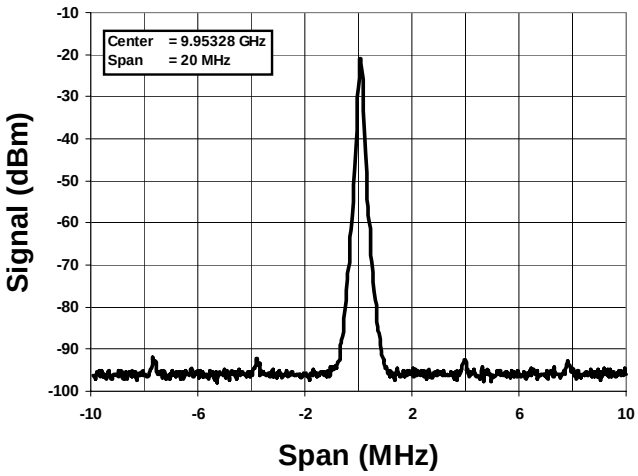
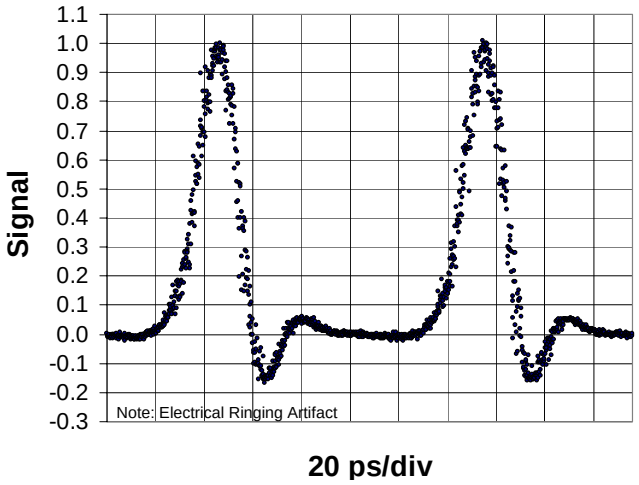
Typical Performance of PriTel's UOC Ultrafast Optical Clock at 10 GHz

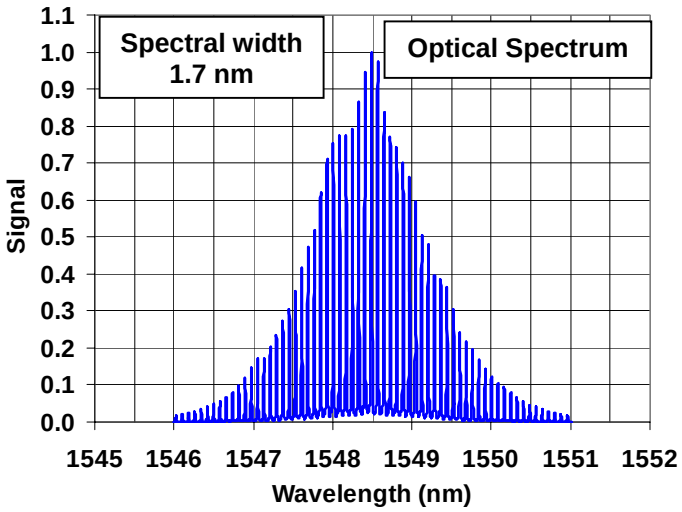
RF spectrum of 10 GHz pulse train near center frequency



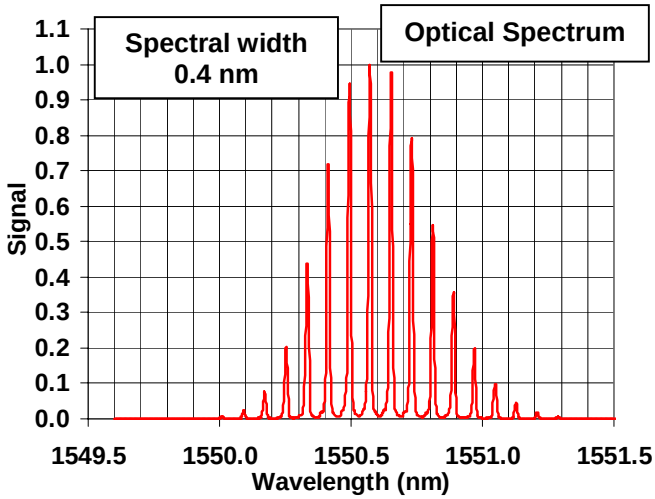
Sampling scope trace

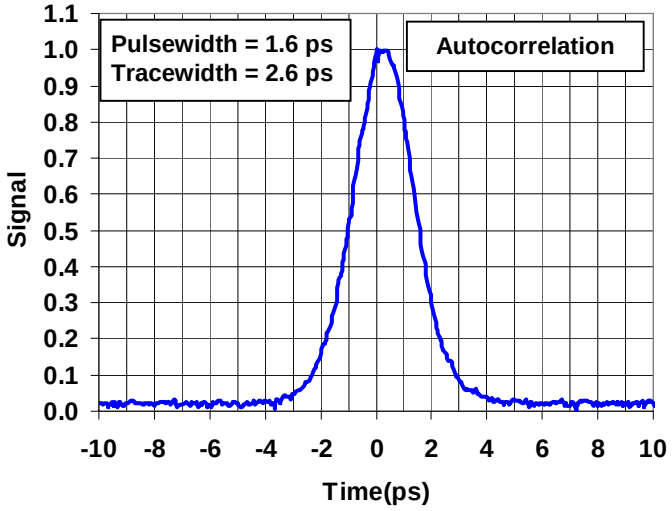


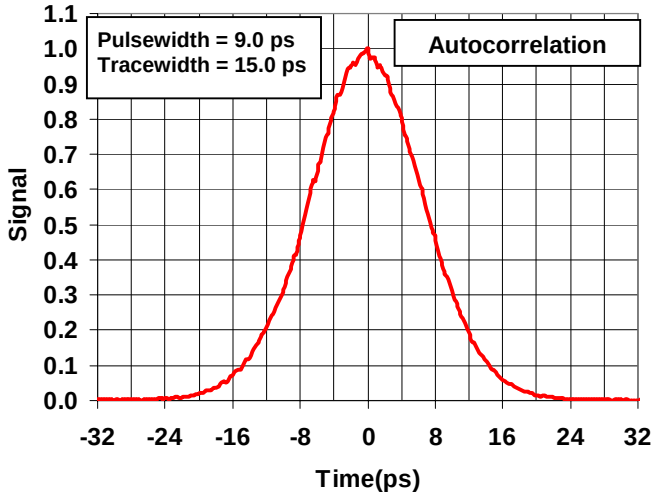
Optical spectrum and Autocorrelation at 10 GHz, pulsewidth 1.6 ps



Optical spectrum and Autocorrelation at 10 GHz, pulsewidth 9.0 ps







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