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 microcomputer 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.

SPECIFICATIONS

UOC

Pulse repetition rate	1 GHz, 5-14 GHz, 5-20 GHz, or 38-43 GHz, (Continuously tunable at > 9 GHz)
Average output power	Varies with pulsewidth and pulse repetition rate (e.g., >20 mW at 2.5 ps and 10 GHz)
Peak power	Typical = 1 W
Sideband suppression	> 70 dB
Temporal Pulsewidth FWHM	<1.5ps (with default BPF Filter installed) 1.5-10 ps is available by optional BPF Quick change filter cartridges
Spectra Width (FWHM @ 1.5 ps)	1.7 nm
Wavelength band	1530 nm – 1565 nm
Polarization Maintaining Fiber Output with PER (dB) (linear polarization)	22 dB
Amplitude noise	< 1%
Timing jitter	< 50 fs (limited by external RF clock)
External RF input power	< 10 dBm
Phase locking control	Embedded microcontroller
Optical	
Gain medium	Er-doped silica fiber
Pump source	Diode laser
Connectors	FC/APC slow axis along key
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.

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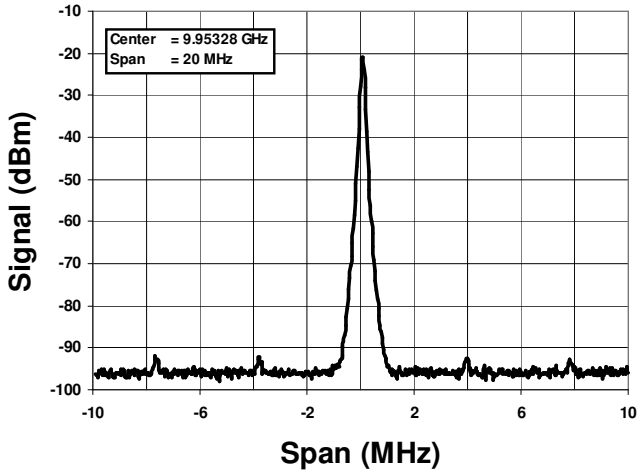
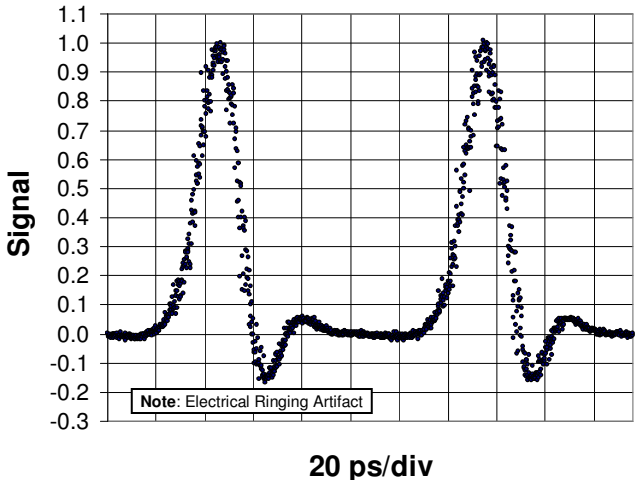
Typical Performance of PriTel's UOC Ultrafast Optical Clock at 10 GHz

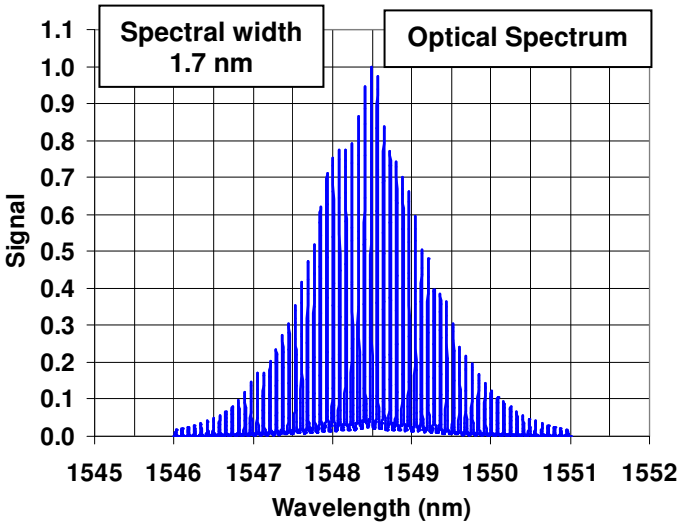
RF spectrum of 10 GHz pulse train near center frequency



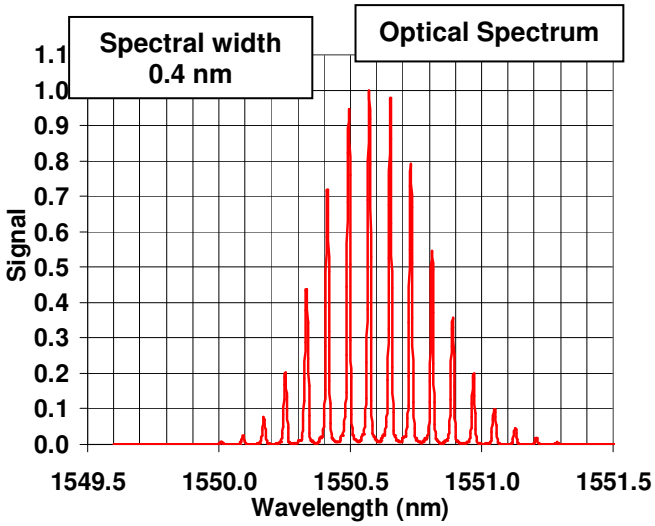
Sampling scope trace

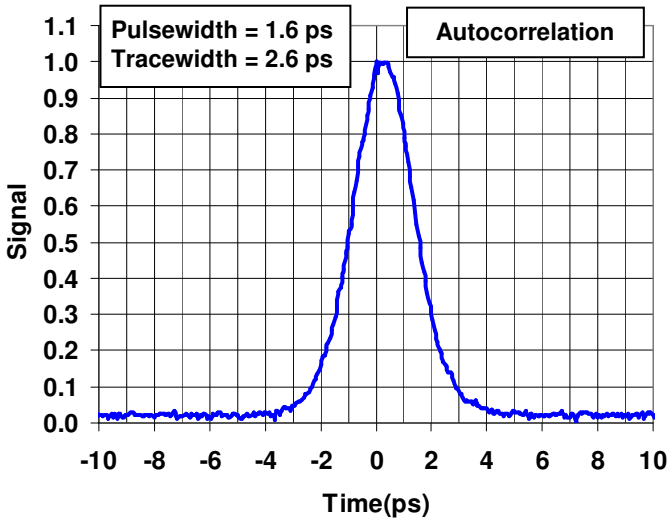


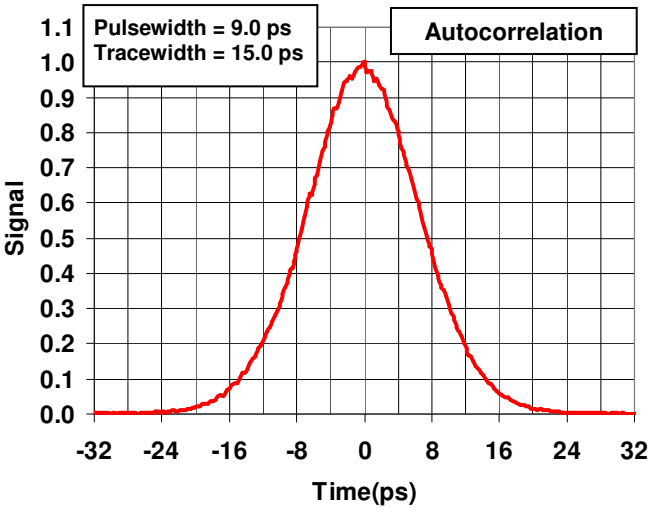
Optical spectrum and Autocorrelation at 10 GHz, pulsewidth 1.6 ps



Optical spectrum and Autocorrelation at 10 GHz, pulsewidth 9.0 ps







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Information contained herein is deemed to be reliable and accurate. PriTel, Inc. assumes no responsibility and shall have no liability relating to its use. PriTel, Inc. reserves the right to change product specifications at any time without notice.

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