Ultimate Performance and Reliability

For Immediate Release

Orbits Lightwave, Inc. announced an Industry first Slow Light Laser

Orbits Lightwave pioneers a Slow Light Laser with unprecedented low noise performance

Pasadena, Calif., January 16, 2008 – Orbits Lightwave, Inc., an innovative supplier of ultra-stable, low-noise fiber lasers announced today the introduction of an industry first Slow Light Laser. The slow light technology further advance the state of the art performance of the Orbits' Ethernal™ laser platform, that has already emerged as an industry leading ultra-low noise, narrow linewidth, rock stable and reliable laser solution. The Slow Light Laser development effort was conducted under DARPA's PHOR-FRONT program, that demanded the ultimate in laser noise performance.

Orbits' Slow Light Laser is based on the Ethernal™ "Virtual Ring Laser Oscillator", a novel architecture that allows traveling wave operation in a compact all-fiber laser cavity. The Virtual Ring Laser topology enables slowing the intra-cavity light. The slower light has so far extended the laser cavity lifetime by a factor of 30 and quenched the laser AM and FM noise to unprecedented levels. "This is because the slower light group velocity increased the cavity lifetime and therefore effectively extended the laser optical length. This results in orders of magnitude better noise dynamics, since many laser noise parameters scale as the square of the cavity length", said Dr. Yaakov Shevy, Orbits Co-founder and CEO. This was evidenced by a smaller free spectral range, as well as by quenching the laser linewidth below the Schwalow-Townes limit. Another important effect of the slow light is reduction of the low frequency Relative Intensity Noise (RIN), by close to 6 orders of magnitude , down to the shot noise level. "We are very proud of our team's scientific achievement that furthers Orbits' tradition of cutting edge research and high level of innovation. Slowing light is an active research area and Orbits' Slow Light Laser is the first application in this field that resulted in a groundbreaking commercial product," added Dr. Shevy.

The Orbits Slow-Light Laser is currently available at 1.5 and 1.06 micron with power up to 250mW. These lasers have great potential for applications that demand the ultimate in laser noise performance and stability, these include: Acoustic Sensing, Lidar, Microwave Photonics and Advanced Coherent Free Space Communications. More importantly, due to Orbits's innovative StableLase™ packaging technology, the Ethernal™ Slow Light Laser can reliably maintain its superior noise performance under adverse environmental conditions including: temperature, humidity, acoustic noise and vibrations. The Slow Light Ethernal™ Laser will be demonstrated at the Orbits Lightwave booth #6534 at the Photonics West Exhibition in San Jose, California from January 22-24, 2008.

About Orbits Lightwave:

Founded in 1999 and privately held, Orbits Lightwave, Inc. of Pasadena, Californnia, designs, manufactures, and markets Fiber Lasers for sensing, LIDAR, test, and coherent communications. Orbits Lightwave ETERNAL™ products benefit the researcher and system designer alike by providing unprecedented levels of laser performance for sensing, interferometry microwave photonics and other highly sensitive coherent laser applications.

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