Contact: Andrew Bridges
The Centre for Integrated Photonics Ltd
+44 (0) 1473 663210
info@ciphotonics.com

Barrie Nicholson
Wordsun Ltd
+44 (0) 1202 856000

A world first at ECOC 2007:

Semiconductor optical amplifier (SOA) offers 'breakthrough' performance for all-optical 100 Gbits/sec networks

** non-linear SOA is ideal for R&D today and — in integrated forms — as a platform for functions such as wavelength conversion, signal regeneration, Boolean logic…*

Berlin, Germany, September 17, 2007

At ECOC 2007, CIP is launching an innovative semiconductor optical amplifier (SOA) offering highly-optimised non-linear operating characteristics that may be used to implement advanced functions in all-optical networks operating at up to 100 gigabits/second.

Offering a gain recovery time of just 10 picoseconds, together with integration-friendly features that make it easy for the SOA to be fabricated in arrays, and 'push fitted' into hybrid components, the device provides a platform for next-generation networks.

"We've had a successful 40 Gbits/second SOA for two years, and employ array versions to produce highly-integrated 2R regenerators. This much improved device-which I believe is the fastest commercial SOA ever created-gives the development community a platform to support 100 Gbits/second all-optical architectures," says David Smith, CTO of CIP. "Its large-spot ultra-low reflectivity interfaces, when combined with our unique hybrid integration technology, make it possible to build component subsystems using passive alignment. This is a genuine breakthrough for all-optical system building."

The SOA's tuned characteristics allow it to perform well in a range of advanced optical applications. The device can be controlled to exploit four-wave mixing, cross-gain modulation or cross-phase modulation effects to implement all-optical wavelength conversion - providing a dynamic mesh connectivity capability to dramatically enhance the flexibility of point-to-point optical networks. The phase change characteristics of the non-linear SOA, and its 20 dB gain, may also be employed to regenerate optical signals. The device is also ideal for implementing all-optical Boolean logic functions.

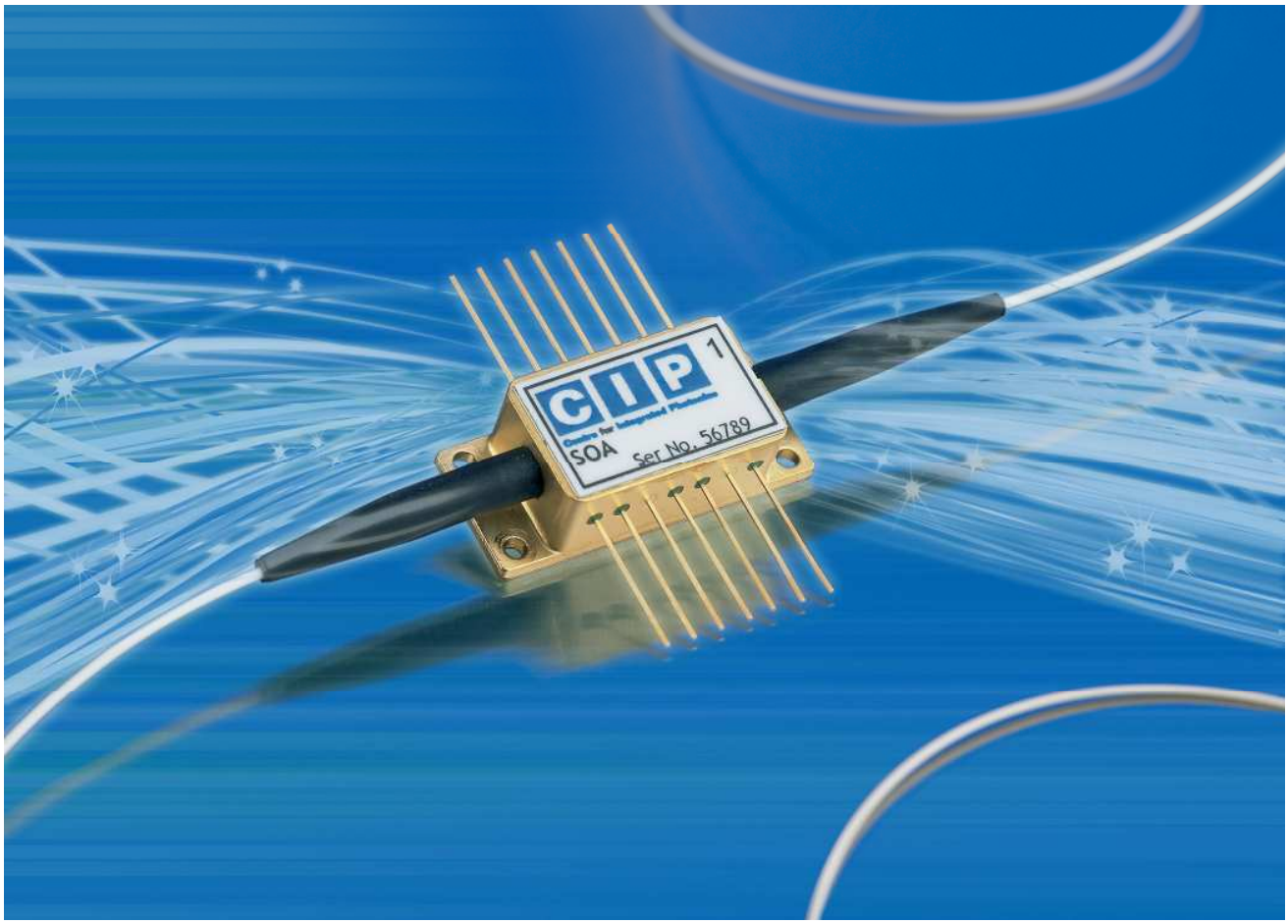
CIP is well known for its pioneering work in the SOA field. Among the optimised operating parameters offered by the 1550 nm indium-phosphide, multiple quantum well SOA device are a saturated gain recovery time (1/e) of 10 picoseconds typical, and a 20 dB gain with a tiny 0.2 dB of polarisation dependent saturated gain. To optimise performance in its target applications the device features an internal active waveguide with a high confinement factor.

The new SOA joins a comprehensive range of compound-semiconductor device functions for optical networking developed over many years by CIP. This component range is supported by a unique hybrid integration technology that has been proven by CIP over more than a decade. This technology eliminates the costly active alignment used in today's all-optical systems building, by employing a low-cost planar silica motherboard to provide the interconnection fabric for components such as SOAs, EAMs, filters and photodiodes. System components are mounted on

daughterboards with precision-machined mating faces, and assemble by means of a push fit. Individual components require only minor modifications at their interface edges to be made compatible with the assembly technique, and CIP now has a large library of compatible devices that allow complex all-optical system functions to be conceived and assembled.

The device is provided in a butterfly package, and is currently available in small quantities to support research and development applications. Integrated versions of the device, and other packages suitable for high volume applications are available on request.

A datasheet on the new device - SOA-XN-OEC-1550- info@ciphotonics.com
Image & text available at: www.wordsun.com/cip3.html or www.ciphotonics.com/cip_press.htm



CIP is an R&D facility specialising in integration technologies for microsystems and nanotechnologies, with a key competence in photonic integration. The company has been set up to carry out contract research and development in photonic integration, using the underpinning technologies of III-V photonic materials, silicon micromachining, and planar silica. CIP's extensive facilities and capability include design, fabrication, analysis, packaging and system testing to support world-leading device innovations. The centre's staff are highly experienced in commercial R&D (>500 man years for core technical staff) and internationally recognised in their technical areas. The Centre is set up as a development and small scale production laboratory to offer services to both industry and academia, and act as a bridge between them, allowing industry access to new ideas from academia, and academia access to downstreaming routes to industry.

CIP Technologies
B55 Adastral Park
Martlesham Heath
Ipswich,
IP5 3RE,
UK.
t +44 (0)1473 663210;
f: +44 (0)1473 663295;
e: info@ciphotonics.com;
w: www.ciphotonics.com

EEDA
East of England Development Agency