LIGHTCONNECT Introduces First MEMS-based Dynamic Gain Equalizer

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DGE1020 Allows Unparalleled Optical Amplifier Performance In Long Haul and Ultra Long Haul Transmission Systems

Newark, California, USA. LIGHTCONNECT, worldwide designer and manufacturer of innovative, dynamic MEMS-based fibre optic components for next generation, dynamically configurable optical networks, today announced the first MEMS (micro electro-mechanical systems) based dynamic gain equalizer (DGE) for long haul and ultra long haul dense wavelength division multiplexing (DWDM) systems.

The LIGHTCONNECT DGE1020, when used in a feedback loop, dynamically compensates amplifier gain profiles, thus enabling high signal-to-noise ratio for all channels in optical amplifier systems. Dynamic gain compensation improves system performance, increases system flexibility and increases the distance between amplifiers in long haul and ultra long haul transmission systems. This device is intended for use with Erbium-doped fibre amplifiers and Raman amplifiers.

The DGE1020 is based on diffractive MEMS (D-MEMS) technology that offers several advantages over other MEMS technology. Unlike mirror-based MEMS devices that require large movements of small mirrors, the diffractive MEMS approach requires motion less than 0.4 microns. Moreover, the high resonant frequencies of the D-MEMS ribbons increase speed by 50 to 500 times over mirror based MEMS components while providing a robust optical platform which is virtually unaffected by ambient acoustic and seismic disturbances.

Existing static gain flattening filters are incapable of responding to changes in optical networks, thus preventing continuous optimum system performance. Diffractive MEMS-based DGEs, on the other hand, respond rapidly and with excellent wavelength resolution to changes in the optical amplifier gain profile, with consequent low residual ripple after equalisation even in the steepest portions of the gain profile. The D-MEMS-based DGEs consume little power, require no temperature control and have a small package size (64 x 96 x 16mm).

According to Asif Godil, chief technology officer and co-founder of LIGHTCONNECT, “Over the next six to twelve months the market will demand dynamic components such as the DGE, and LIGHTCONNECT plans to meet this need with a reliable, highly manufacturable product which matches the cost structures over time that our customers require to make a profit while maximising the performance parameters most important to them.”

According to Dr. Peter O. Clark, president and chief executive officer of the company, “The strong and growing team of excellent contributors at LIGHTCONNECT will build on the richness of our new technology to bring even more exciting products to market for next generation networks.”

DGE2010 Key Performance Features

· Operating Wavelength Range 1528nm - 1570 nm

· Wavelength Step Response 15 db in 4 nm

· Maximum Attenuation 15 db

· Insertion Loss <6 db

· Polarization Dependent Loss <0.25 db

· Residual Ripple <0.30 db

· Speed <50 microseconds

About Dynamic Gain Equalizers

To maximize the signal to noise of an optically amplified system, non-linear effects in the optical fibre make it necessary to maintain approximately equal power in the optical channels of a DWDM system. The greatest contributor to the unbalancing of the channels is the optical amplifier's gain profile. Moreover after passing through several cascaded amplifiers, the effect is compounded and the different channels can have quite different powers. This is a serious problem in long haul and ultra long haul transmission systems where a signal might pass through several dozen amplifiers.

To compensate for this unbalancing in current fibre optic communication systems, a static optical filter is placed after each amplifier. However, static gain equalization is impossible if the amplifier gain profile is changing with time as it does in dynamically reconfigurable optical networks.

A better solution is to use an optical filter that can dynamically adapt itself to the changing needs of the system. In this way the maximum data rate can be maintained continuously. A dynamic gain equalizer, or DGE, is such a device. A DGE provides an electronically programmable continuous wavelength dependent attenuation to adjust all of the channels simultaneously.

Pricing and Availability

The DGE1020 is priced at ,000 in sample qualities, with volume discounts. It is available and currently shipping.

About LIGHTCONNECT, Inc.

Founded in 1999, LIGHTCONNECT designs and manufactures innovative, MEMS-based, fibre optic components for next generation, dynamically configurable optical networks. The company's proven solutions meet rapidly growing needs for configurability in optical networks, where the components must support rapid bandwidth and circuit provisioning. LIGHTCONNECT innovates new optical components by combining the wave nature of light with established CMOS and transistor packaging techniques. The result is a new category of dynamic MEMS (micro electro-mechanical systems) components that are of highest performance, compact, highly manufacturable, and of proven, best-in-class reliability.

The company has raised a total of million in two rounds of funding. Investors included Sevin Rosen Fund, US Venture Partners, Morgenthaler, Intel Capital, Optical Capital Group, Supertex, Milton Chang and Incubic.

The company is located in Newark, California, and has 52 employees. For more information, visit http://www.lightconnect.com or send email to sales@lightconnect.com .