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**MITSUBISHI ELECTRIC DEVELOPS 10 Gbps ELECTROABSORPTION  
MODULATOR INTEGRATED LASER DIODE MODULE COMPLIANT  
WITH XMD-MSA**

**Tokyo, March 1, 2006** – Mitsubishi Electric Corporation (President and CEO: Tamotsu Nomakuchi) announced today successful development of an electroabsorption modulator integrated DFB-LD<sup>1</sup> (EAM-LD<sup>2</sup>) module. The module is one of the smallest and lowest energy consuming in the industry because of a built-in thermo-electric cooler (TEC). The EAM-LD chip (ML9XX41) is mounted in a XMD-MSA<sup>3</sup> compatible Transmitter Optical Sub Assembly (TOSA), which are sufficient for a 10Gbps<sup>4</sup>-80km (standard single mode fiber) transmission with the industry's highest average fiber launched power of +2 dBm. Mitsubishi Electric will display a prototype sample of this TOSA at the Optical Fiber Communications Conference & Exhibition (OFC2006) on March 5-9 in Anaheim, USA.

<sup>1</sup> Distributed Feedback Laser Diode (DFB-LD): Grating is formed in the cavity of the laser diode, which feeds back the light with a specified wavelength. The DFB-LD emits monochromatic light, which is suitable for the light source in long distance optical communication

<sup>2</sup> Electroabsorption modulator (EAM): A waveguide optical modulator based on quantum-confined Stark effect (QCSE) of quantum well structure. Upon applying a reverse bias voltage to EAM, the absorption coefficient of the quantum well is increased due to shrinkage of its effective band gap

<sup>3</sup> A 10 Gbps Miniature Device Multi-Source Agreement (XMD-MSA): The MSA has been created to establish compatible sources of optical modules for use in the small optical transceivers, like XFP, XENPAK and so on.

<sup>4</sup> Equivalent to transfer of about 1.8 Compact Disks of data in one second

Model name	Application	Summary
10Gbps EAM-LD module with Thermo-electric cooler	XFP compliant 10 Gbps Small-form-factor pluggable optical transceivers	-High optical output - Low power consumption - XMD-MSA compatible package

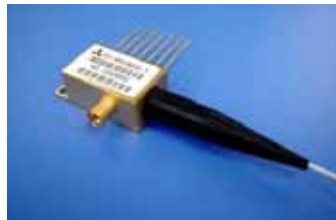
## Applications

Mitsubishi's new EAM-LD module is suitable for 10 Gbps small-form-factor optical transceivers like XFP, enabling cost-effective 10Gbps optical links for long distance (longer than 40 km) and metropolitan-area applications with the high board density.

## Main characteristics

(1) The new EAM-LD module can transmit high quality 10 Gbps optical signal with a low power consumption of less than 0.6 W. Using Mitsubishi's original high frequency interconnection technology, we have successfully developed a high frequency signal transmission line in the module, which can sometimes be an influx route of heat outside from the module so as to result in a degradation of its cooling capacity of its thermo-electric cooler.

(2) We have enhanced interface compatibility of the module by complying with the XMD-MSA specifications. The XMD-MSA specifies both electrical and mechanical interface requirements for the small optical transceiver modules including XFP. In particular, a flexible printed circuit (FPC) on its common electrical interface standard is a main feature of the MSA. The developed module uses a small and efficient thermo-electric cooler, allowing optical transceivers to consume less power.



previous butterfly model



newly developed receptacle model

## **About Mitsubishi Electric**

With over 80 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation (TSE:6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. The company recorded consolidated group sales of 3,309 billion yen (US\$ 31.2billion\*) in the fiscal year ended March 31, 2004. For more information visit <http://global.mitsubishielectric.com>

\*At an exchange rate of 106 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2004.