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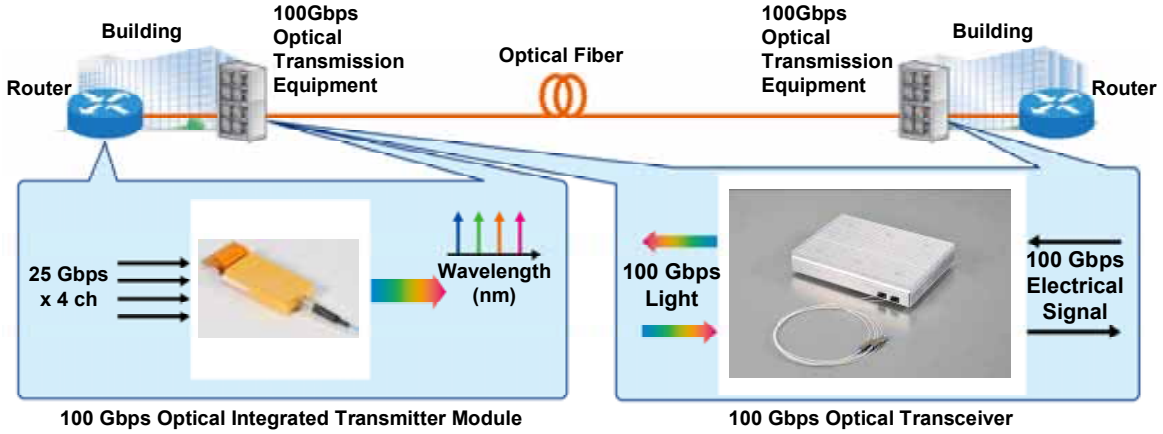
Mitsubishi Electric Develops 100 Gbps Optical Transmission Technologies for High-capacity Inter-City Communication

Tokyo, February 14, 2013 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today it has developed an optical transceiver and integrated optical transmitter module for 100 Gbps optical transmission per wavelength that realizes 2.5 times the capacity of conventional inter-city optical networks. The technologies, which will help to meet fast-expanding demands for inter-city communication capacity, will be commercialized within the fiscal year ending in March 2014.



Mitsubishi Electric's optical transmission technologies enable 100 Gbps optical transmission per wavelength thanks to its newly developed integrated optical transmitter module and optical transceiver, which are installed to 100 Gbps optical transmission equipment. Transmission capacity per power consumption is 40% more efficient compared to existing devices due to effective integration of the optical module and other key components.

(1) Optical Transceiver for 100 Gbps long-haul transmission

Digital coherent technology realizes high spectral efficiency with polarization multiplexing and quaternary phase-shift keying. Soft-decision forward error correcting technology enables transmission beyond 1,000 km. The number of 100 Gbps channels is increased by 40% compared to conventional 100 Gbps technology.

(2) Integrated optical transmitter module for compact 100 Gbps optical transmission device

Optical integration reduces device dimensions by 80% and power comsumption by 22% compared to existing models. The four optical transmitter modules, four driver ICs and wavelength multiplexers are integrated in one package.

Communication traffic is rapidly growing with the spread of smartphones and increased video streaming services. In response, the demand for greater capacity in inter-city backbone networks is rising. Compactness and energy efficiency are also key issues due to the need to install communication equipment in limited spaces.

Development overview

Equipment	Specification	New	Conventional	Improvement
100Gbps Optical Transmission Device	Transmission capacity	100 Gbps	40 Gbps	2.5 times faster
	Power efficiency	0.66 Gbps/W	0.55 Gbps/W	20% more efficient
100 Gbps Optical Transceiver	Transmission capacity	100 Gbps	40 Gbps	2.5 times faster
	Modulation format	Polarization multiplexed quadrature phase-shift keying	Differential binary phase-shift keying	-
	Detection scheme	Coherent detection	Direct detection	-
100 Gbps Integrated Optical Transmitter Module	Transmission capacity	100 Gbps	40 Gbps	2.5 times faster
	Power efficiency	7 W	9 W	22% reduction

Note: 56 patents are pending in Japan and 31 overseas.

This work is partly supported by the Japanese Ministry of Internal Affairs and Communications' R&D project for digital coherent optical transceiver technologies and high-speed optical edge node technologies.

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About Mitsubishi Electric

With over 90 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 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. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 3,639.4 billion yen (US$ 44.4 billion*) in the fiscal year ended March 31, 2012. For more information visit http://www.MitsubishiElectric.com

*At an exchange rate of 82 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2012