

**FOR IMMEDIATE RELEASE**

**Leading Optical Chip and Module Manufacturers Announce New Pluggable Transceiver Module Multi-Source Agreement for 40 Gbps Solution with an Optical Device (XLMD2)**

**Fremont, CA—July 27, 2011**—Mitsubishi Electric Corporation, OKI SEMICONDUCTOR CO., LTD., Opnext, Inc., Renesas Electronics Corporation and Sumitomo Electric Industries, Ltd., today announced a transmitter optical sub-assembly (TOSA) and receiver optical sub-assembly (ROSA) Multi-Source Agreement (MSA) for 40 Gbps pluggable transceiver modules. This initiative was established to meet increased demand for pluggable 40 Gbps serial modules, similar to the CFP MSA.<sup>(\*1)</sup>

In an upcoming MSA meeting, the member companies will specify the common mechanical dimensions, footprint, pin functions and performance of the optical transmitter and receiver devices. The TOSA/ROSA MSA specifies key features including a low-profile and compact fit for pluggable modules and simple electrical interfaces that provide cost effective solutions.

The transmission speed of 40 Gbps is the highest modulation speed, commercially-available, that uses the simple light on/off keying or serial transmission scheme. 300-pin MSA<sup>(\*2)</sup> transceivers using 1550 nm light source devices are widely available for the 2 km application. Recently, 40 Gbps serial transmission over 10 km was demonstrated using 1310 nm light source devices.

In addition to ITU-T 40Gbps serial transmission standards: VSR2000-3R2 for 2 km and P111-3D1 for 10 km<sup>(\*3)</sup>, the IEEE has recently defined a 40 Gbps serial interface for 2 km (40GBASE-FR)<sup>(\*4)</sup>. The demand for 40Gbps serial transmissions is growing in telecommunication, data and IP communication applications.

In today's 300-pin MSA transceiver module market, XLMD MSA<sup>(\*5)</sup> TOSAs and ROSAs are widely adopted. Following the release of the CFP MSA, 40 Gbps pluggable transceiver modules are now required to offer easy handling and maintenance. New low profile, compact TOSAs and ROSAs are essential components for future downsized pluggable transceiver modules.

“The TOSA/ROSA agreement will leverage the 40 Gbps market to achieve compact, low-power-consumption pluggable modules, which will provide advanced 40 Gbps serial solutions to high capacity network and storage systems,” said an MSA Committee spokesperson. In the future, the MSA will continue to define specifications that consider future advanced technologies, such as 1310 nm light source devices and direct modulation lasers.

The new TOSA/ROSA MSA defines both the laser transmitter devices and the PIN Photodiode - Trans-impedance amplifier (PIN-TIA) receiver devices that comply with 40 Gbps interface standards. The MSA targets transmission modules for more than 10 km applications.

This MSA intends to establish compatible optical devices as defined below.

- (1) Common mechanical dimensions;
- (2) Common interface with common printed circuit board (PCB) design of 40 Gbps optical transceiver modules;
- (3) Common pin assignment and functions; and
- (4) Common electrical and optical characteristics.

The MSA Committee plans to release the specifications within one year.

- (\*1) CFP: Pluggable transceiver MSA for 100Gbps and 40Gbps applications. For more information, please visit <http://www.cfp-msa.org/>
- (\*2) 300-pin MSA: First and widely used transceiver MSA. For more information, please visit <http://www.300pinmsa.org/>
- (\*3) ITU-T: ITU is the leading United Nations agency for information and communication technology. ITU-T is the ITU's Telecommunication Standardization Sector. For more information, please visit <http://www.itu.int/>
- (\*4) 40GBASE-FR: 40Gbps Ethernet: Ethernet Standard defined by IEEE. For more information, please visit <http://grouper.ieee.org/groups/802/3/bg/index.html>
- (\*5) XLMD MSA: TOSA and ROSA MSA for use in the 40 Gbps transceivers. For more information, please visit <http://www.xlmdmsa.org/>

For additional information including detailed specification documents or to join the MSA, please contact an MSA Technical Contact:

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### **About MSA Members**

#### **About Mitsubishi Electric Corporation**

With 90 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, 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. The company recorded consolidated group sales of 3,645.3 billion yen (US\$ 49.3 billion\*) in the fiscal year ended March 31, 2011. For more information, visit [www.MitsubishiElectric.com](http://www.MitsubishiElectric.com).

\*At an exchange rate of 83 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2011.

#### **About OKI SEMICONDUCTOR CO., LTD.**

OKI SEMICONDUCTOR is a leading total-silicon solutions provider in the ever-expanding digital communications market. OKI SEMICONDUCTOR has the expertise and experience in technology development and products manufacturing to support a wide array of customers and a multiplicity of customer demands. As the result of a highly synergetic union with the ROHM Co. Ltd. in 2008, OKI SEMICONDUCTOR continues to support the new digital future by developing and providing innovative products to the market. For more information, please visit [www.okisemi.com](http://www.okisemi.com).

**About Opnext, Inc.**

Opnext (NASDAQ:OPXT) is the optical technology partner of choice supplying systems providers and OEMs worldwide with one of the industry's largest portfolios of 10G and higher next generation optical products and solutions. The Company's industry expertise, future-focused thinking and commitment to research and development combine in bringing to market the most advanced technology to the communications, defense, security and biomedical industries. Formed out of Hitachi, Opnext has built on more than 30 years experience in advanced technology to establish its broad portfolio of solutions and a solid reputation for excellence in service and delivering value to its customers. For additional information, visit [www.opnext.com](http://www.opnext.com).

**About Renesas Electronics Corporation**

Renesas Electronics Corporation (TSE: 6723), the world's number one supplier of microcontrollers, is a premier supplier of advanced semiconductor solutions including microcontrollers, SoC solutions and a broad-range of analog and power devices. Business operations began as Renesas Electronics in April 2010 through the integration of NEC Electronics Corporation (TSE:6723) and Renesas Technology Corp., with operations spanning research, development, design and manufacturing for a wide range of applications. Headquartered in Japan, Renesas Electronics has subsidiaries in 20 countries worldwide. More information can be found at [www.renesas.com](http://www.renesas.com).

**About Sumitomo Electric Industries, Ltd.**

Sumitomo Electric Industries, Ltd. (TOKYO:5802)(ISIN:JP3407400005) designs, manufactures and sells optical fibers/cables/components, advanced electronic devices, and automotive parts. Through the successful strategies of research and diversification, Sumitomo Electric has become one of the world's leading companies at the forefront of the revolution in information and communications. Sumitomo Electric's world-class research and manufacturing capabilities in optical technology continue to expand and strengthen the product portfolio while maintaining industry leading levels of reliability. The company has global operations in more than 30 countries and employs 180,000 people. Sumitomo Electric reported the group net sales of \$24 billion for the year ended March 2011. [www.global-sei.com](http://www.global-sei.com).

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