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MITSUBISHI ELECTRIC ANNOUNCES THE FIRST 10GIGA-BIT ETHERNET PHY IC FEATURING INTER-FRAME LINK SIGNALLING DEVELOPED BY NTT

TOKYO, September 27, 2004 - Mitsubishi Electric Corporation (President & CEO: Tamotsu Nomakuchi) announces the shipment of the first10Giga-bit Ethernet PHY IC (M69851WG) featuring Inter-frame Link Signaling technology (ILS) developed by NTT[*1]. ILS[*2] makes it possible to provide SONET[*3]-like network management function known as OAM&P[*4] over wide area Ethernet services.

*1: NTT Press release URL: www.ntt.co.jp/news/news04e/0407/040708.html
*2: Inter-frame Link Signaling technology: Formally known as LSS (Link Signaling Sub-layer) in IEEE802.3ae and XENPAK standards.
*3: SONET: Synchronous Optical Network
*4: OAM&P: Operations Administration Maintenance and Provisioning

Product Details

Product Name	Features	Package size	Quantity	Sample Price	Sample Shipment
M69851WG	IEEE802.3ae standard[*5] T11.2 10GFC standard[*6] XENPAK-MSA standard Inter-frame Link Signaling Power consumption: 1.2W	14x14x1.66mm	100,000/Mo	$280	Oct 12, 2004

*5: Data communication standard for Computer, and Workstation Local Area Network.
*6: Data communication standard for Computer, and Workstation Storage Area Network.

Target Application

For the long/middle distance internet service infrastructure, WAN (Wide Area Network) /MAN (Metropolitan Area Network) currently use the SONET/SDH (Synchronous Digital Hierarchy) standardized by ITU. In order to meet the increasing demand of internet based service such as the IP telephone, "Wide/Metropolitan IP network" is considered employing the Ethernet technology, which is used as the standard at LAN (Local Area Network). However Ethernet has been pointed out its lack of network management functionality. The Inter-frame Link Signaling (ILS) technology developed by NTT makes it possible to provide equivalent management function as existing SONET based network services to this new Ethernet based network services. M69851WG is the world first 10Giga-bit Ethernet Single Chip Transceiver integrating ILS functions. M69851WG is designed and manufactured using 100nm-gate SOI-CMOS technology providing less power consumption, high noise resistance, and latch-up free product which suitable for 10Giga-bit transceiver modules such as XENPAK/X2?XPAK[*7] and XFP[*7] platform used in routers and servers.

*7: Multi Source Agreement; Consortium to define outline and interface of the product.

Product Features

1. First 10Giga-bit Ethernet PHY IC to integrate the Inter-frame Link Signaling technology developed by NTT

M69851WG is the first 10Giga-bit Ethernet PHY IC to integrate the Inter-frame Link Signaling technology developed by NTT to provide SONET-like OAM&P service such as the monitoring the error counts, distinguishing the damaged point in the network, or alternative network path for the network trouble, over Ethernet.

For the conventional Ethernet network services, since it does not support any of OAM&P features, quality of service had been sacrificed to achieve low cost network services. By using this Inter-frame Link Signaling technology, equivalent quality of service as existing SONET are provided over wide-area Ethernet network at Ethernet price. M69851WG compliant to 10Giga-bit Ethernet/Fiber Channel standards, and is usable to transceiver products for 10Giga Ethernet / Fiber-Channel or XHP line cards.

2. Programmable solution provided by combination with RENESAS DCU (M302D1F4)

Not only M69851WG works as single-chip 10Giga-bit Ethernet PHY IC, but also by combining with RENESAS DCU (M302D1F4), the XENPAK registers can be emulated by the DCU and its free reference firmware that becomes programmable. So that, future changes in

XENPAK standards or custom features can be adapted by modifying the firmware within the DCU. This chip-set solution also provides download features of all initial data (NVR) and firmware program using IEEE802.3ae standard serial interface (MDIO). So that the XENPAK/X2/XPAK module product become in-field upgradeable.

Product Information

- Parts number: M69851WG
- Sample price: $280
- Shipment date: from Oct. 12, 2004

Specification

- Standards: IEEE802.3ae (final), 10GFC(T11-2 10GFC Revision3.5), XENPAK MSA (Revision3.0)
- Built-in Inter-frame Link Signaling technology developed by NTT
- Power consumption: below 1.2W (Power source =1.2V)
- Interface: 10.3G bps serial interface, 3.125G bps x 4-channels
- XENPAK Register emulation feature[*9]
- Package: 289pin BGA (14mmx14mmx1.66mm)

*9: M69851WG supports Single-chip 10Giga-bit Ethernet PHY IC mode and DCU mode used with Renesas M302D1F4 for XENPAK register emulation.

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$31.2 billion[*]) 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.

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