



KSZ9021GQ KSZ9021RL Product Brief

Single-port 10/100/1000Base-T Gigabit Transceiver

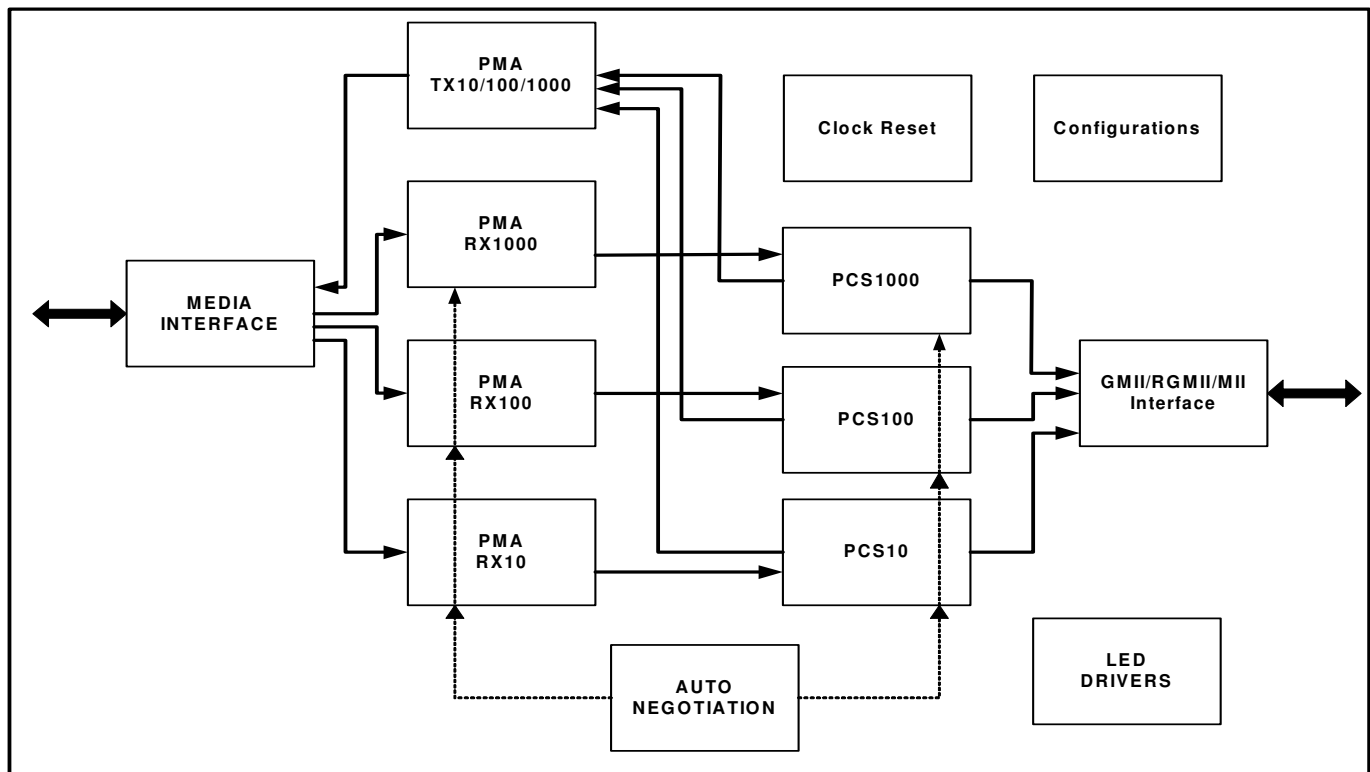
Description

The KSZ9021GQ and KSZ9021RL are single-port 10/100/1000Base-T Gigabit transceivers, supporting data transfer over standard CAT-5 unshielded twisted pair cable. This device offers robust performance and low power consumption. On-chip integration of termination resistors and LDO controller, along with built-in diagnostic features, significantly reduces the cost and the complexity of Gigabit Ethernet applications. This device is ideal for enabling Gigabit Ethernet performance in SOHO and SMB networking applications, such as media converter, GEAPON ONU router, wired/wireless Gigabit SOHO/SMB router, and VoIP gateway.

The device is available in two RoHS-compliant package options - 128-pin QFP (KSZ9021GQ, supporting GMII/MII) and 64-pin E-LQFP (KSZ9021RL, supporting RGMI). Industrial grade is also available.

The datasheets and support documentation can be found on Micrel's web site at: www.micrel.com.

Block Diagram



Features	Benefits
10/100/1000Base-T IEEE 802.3 compliance	Standard compliance ensures to work with other standard compliant, already deployed devices.
GMII, RGMII, and MII MAC interfaces	Flexible MAC interfaces (GMII/MII for KSZ9021GQ and RGMII for KSZ9021RL) support direct connection to MACs in Ethernet processors and switches at various data rates.
Integration of termination resistors on the chip	On-chip termination (eliminating 8 external resistors) not only simplifies PCB design and reduces system BOM, but also improves overall signal integrity and EMI emission.
Integration of a LDO controller on the chip	Integration of a LDO controller permits a low cost MOSFET to supply the 1.2V core, which reduces board cost and simplifies board layout.
LinkMD [®] TDR-based cable diagnostics	Built-in LinkMD [®] diagnostics helps identification of common cabling problems, including those not addressed by IEEE. It simplifies network deployment and reduces network downtime.
Automatic MDI/MDIX crossover for IEEE 802.3 and EIA/TIA 568 standards at all speeds of operation	Auto-MDI/MDIX eliminates the need for cross-over cable, thus reduces installation costs. Easy to use.

Applications

- Wired/wireless Gigabit SOHO/SMB Router
- SOHO Media Center
- Voice-over-Internet Protocol (VoIP) Gateway
- Network Attached Storage
- Laser Printers and Projectors
- GEPON ONU Router
- Media Converter
- VPN/Firewall based SMB/SME Router
- Gigabit Ethernet LAN on Motherboard
- Integrated Broadband CPE (ADSL/VDSL/FTTH) Router

Corporate Sales Offices

Location	Address		Telephone	Fax
Corporate HQ	2180 Fortune Dr.	San Jose, CA 95131 USA	(408) 944-0800	(408) 474-1000
Western USA	2180 Fortune Dr.	San Jose, CA 95131 USA	(408) 944-0800	(408) 474-1000
Central USA	2425 N. Central Expressway, Suite 351	Richardson, TX 57080 USA	(972) 393-2533	(408) 474-1210
Eastern USA	93 Branch St.	Medford, NJ 08055 USA	(609) 654-0078	(609) 654-0989
Latin America	2425 N. Central Expressway, Suite 351	Richardson, TX 57080 USA	(972) 393-2533	(408) 474-1210
China	Rm 601, Bldg., Int'l Chamber of Commerce Mansion, Fuhua Rd., Futian District	Shenzhen, P.R. China	+86-755-8302-7618	+86-755-8302-7637
Japan	Queen's Tower A 14F, 2-3-1, Minato Mirai, Nishi-Ku, Yokohama-Shi	Kanagawa 220-6014, Japan	+81-45-224-6616	+81-45-224-6716
Korea	8F AnnJay Tower Bldg., 718-2, Yeoksam-Dong	Kangnam-Ku, Seoul 135-080 Korea	82 (2) 538-2380	82 (2) 538-2381
Singapore/India	300 Beach Rd., #10-07 Concourse	Singapore 199555	+65-6291-1318	+65-6291-1332
Taiwan	4F, No. 43 Lane 188, Rueiguang Rd., Neihu District	Taipei, Taiwan, R.O.C.	+866 (2) 8751-0600	+866 (2) 8751-0746
France/Southern Europe	Les Laurentides Immeuble Ontario, 3 avenue du Quebec	91140 Villebon sur Yvette, France	+33 (0) 1.6092.4190	+33 (0) 1.6092.4189
UK/EMEA	1 st Floor, 3 Lockside Place, Mill Lane, Newbury, Berks	United Kingdom RG14 5QS	+44 (1635) 524455	+44 (1635) 524466
Sweden/Nordic	Lundagatan 11 6tr	SE-171 63 Solna Sweden	+46 (8) 470-5950	+46 (8) 470-5950

