Application Brief

Solutions for IP Telephony Utilizing Cortina Systems® LXT9785E and LXT973 10/100 Mbps Ethernet Transceivers

Ethernet in Next Generation Networks

Today, the dynamic, intersecting en vironments of local and wide area networks (LANs and WANs) face the dual challenge of supporting increased data traffic and a growing demand for application aware networking such as video services, IP telephony and quality of service (QoS). Metropolitan area networks (MANs) also have emerged, with a promise of high-speed optical access and high-reliability Internet protocol (IP) data transmission. Ethernet has proven ideal for these next generation networks, as telecommunications and networking equipment providers require building blocks for cost-effective, reliable communications solutions.

Data and Voice Networks Convergence

The vision of a single corporate network to handle all communications is becoming a reality as Ethernet delivers on the promise of low-cost support of data and voice traffic over IP. Enterprise and small business customers who consider the adoption of IP telephony are finding that they can truly benefit from the reduced complexity (installation, maintenance, etc.) of a single network. IP telephony can also reduce capital expenses and may reduce the overall cost of telecommunications services by allowing calls between branch offices to take place over the Internet or a dedicated WAN infrastructure.

Improving IP Telephony Quality and Cost with Cortina Systems® Networking Silicon

As with an y new technology , barriers to adoption exist for IP telephon y. Cortina S ystems, Inc. (Cortina) and its OEM partners are developing IP telephony solutions to remove these barriers. One barrier to adoption is that IP telephone systems are not perceived to be as tolerant to power failures as traditional phone systems. When a power failure occurs, a traditional telephone remains active (providing lifeline services) because it is receiving power over the cable from the PBX, which is running on a back -up UPS or gener ator power source. However, an IP telephone, which is connected to a VoIP-enabled switch, and receiv es power from an office power outlet, may not function during a power failure.

In order to provide lifeline services in IP telephone systems, Cortina offers the Cortina Systems ® LXT9785E 10/100 octal transceiver (PHY) (LXT9785E) for multi-port VoIP-enabled switch systems. Each port of the LXT9785E can detect (discover) if an IP telephone is on the other end of the network c onnection, and can inform the switch processor of this information. The switch can then provide power directly over the data cable connected to the IP telephone. If the switch system is connected to a backup power source, the system can provide power fault-tolerance, and therefore lifeline services, and can also eliminate the need for a connection to the office power outlet.

On the desktop, Cortina offers the Cortina Systems ® LXT973 dualport transceiver (LXT973) for IP telephones which typically require two 10/100 ports, one to connect to the switch and the other to connect to the desktop PC. By combining two low-power transceivers into a single product, Cortina reduces the overall cost and complexity of the telephone design.

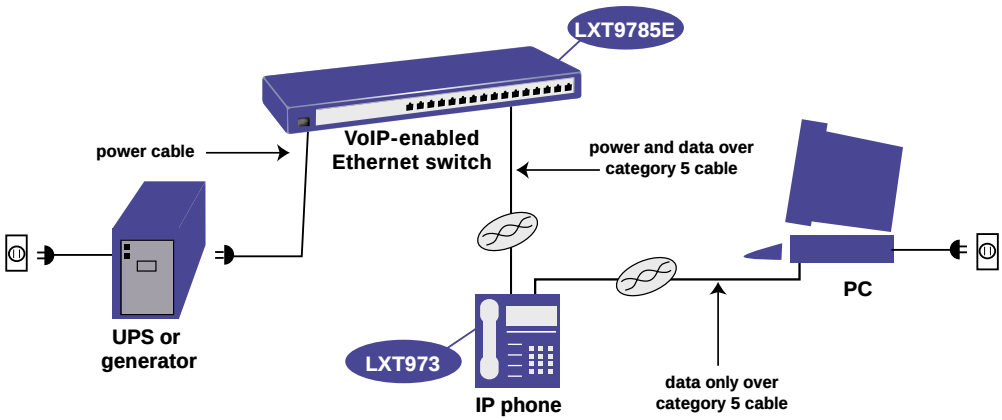
LXT9785E Provides DTE Discovery for VoIP Switches

The LXT9785E enhanced 10/100 octal Ethernet PHY is a low-power tr ansceiver optimiz ed for use in V oIP-enabled switch systems. The LXT9785E's DTE discovery feature can detect the presence of data terminal equipment (DTE), such as an IP telephone, capable of being powered remotely. If an IP telephone is present, the VoIP switch can then apply power o ver the data cable. The LXT9785E improves the availability of IP telephony services by providing this solution for power fault-tolerance. It may also reduce the overall system cost by eliminating the need for a power supply in each IP telephone.

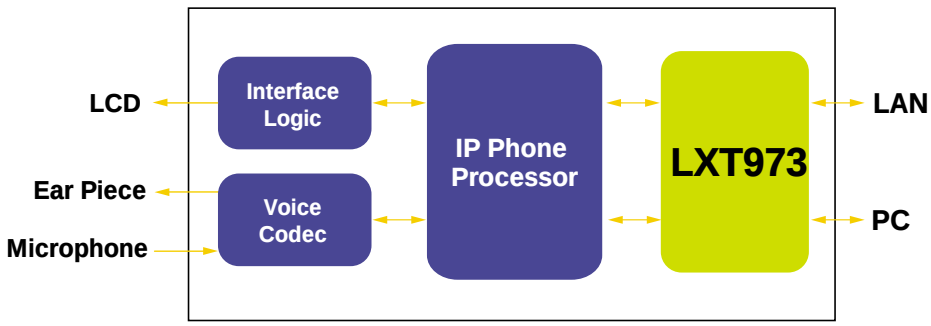
LXT973 is an ideal PHY Solution for IP Telephones

The LXT973, 10/100 dual Ethernet PHY is a low-power transceiver ideal for IP telephone applications requiring two Ethernet connections. In addition to superior PHY features such as low -power, extended cable distance and auto MDI/MDIX, the LXT973 can reduce overall complexity of IP telephone designs.

IP Telephony System



IP Phone Handset Block Diagram



IP phone processor includes DSP, MCU, and MAC.

Cortina in Communications

Cortina is a leading supplier of intelligent communication solutions through continuous innovations in advanced port processing and intelligent port connectivity to the Core, Metro, Access and Enterprise Market Segments. With our state-of-the-art high speed analog digital integration, we deliver a wide suite of products that address our customers' performance, density and flexibility needs enabling faster time-to-market, longer time-in-market, and increased revenue opportunities. W orking closely with our customers to understand their system requirements and anticipate their needs, we are creating the foundation ingredients for new generations of services.

*Other names and brands may be claimed as the property of others.

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