

FACTS

OMNI 3750 - ETHERNET AND DIAL



WHY IP?

The transaction payments industry has and must continue to adapt to changing technologies to remain competitive. One of the technologies that has experienced rapid change is communications. Until fairly recently, all communications between a POS terminal and the authorization/settlement host were conducted using a standard dial-up phone line. Inherent in this process were frequent connection problems and a relatively slow processing speed. With the wide-spread adoption of the Internet and its underlying technologies, it is now possible to transmit authorization and settlement transactions to the host computer in a fraction of the time it took for a dial-up transaction. Additionally, the transaction is processed in a very reliable and secure environment.

WHAT IS TCP/IP?

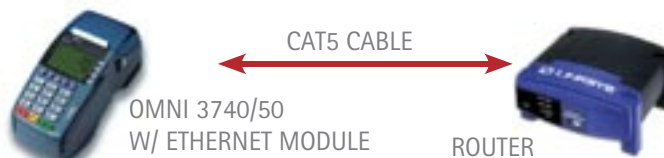
IP or Internet Protocol is part of an overall network architecture that assigns roles and responsibilities for moving information on network. IP requires that every computer on the network have a unique IP address. When a message is sent from one computer to another over the Internet, it is divided into small components called packets. Each packet contains both the sender's IP address and the receiver's IP address.

Each packet is first sent to a router that knows about a small part of the Internet. The router reads the IP destination address and forwards the packet to an adjacent router that knows about another part of the Internet. This process continues until a router recognizes that the packet's IP destination address belongs to a computer within its domain. At this point, the router forwards the packet directly to the computer whose IP address is specified.

Because a message is divided into a number of packets, each packet can may be sent by a different route across the Internet. Packets can arrive in a different order than the order they were sent in. The Internet Protocol just delivers them. It's up to another protocol, the Transmission Control Protocol (TCP) to put them back in the right order.

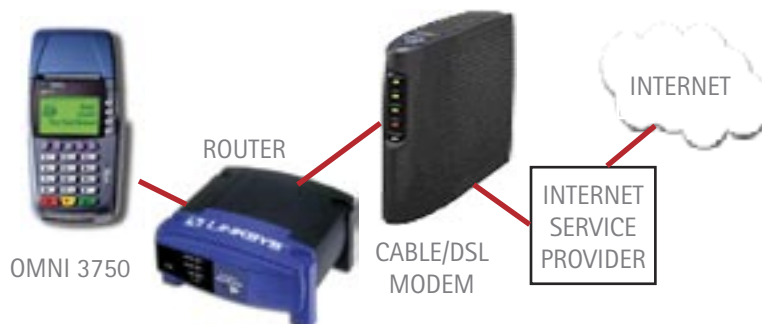
WHAT IS ETHERNET?

Ethernet is the most widely installed local area network (LAN) technology. The Ethernet standard defines the physical characteristics of the network cable, as well as, the communications protocol over the cable. The most commonly installed Ethernet systems are called 10BASE-T and provide transmission speeds up to 10 Mbps.



HARDWARE COMPONENTS

The simplest network configuration consists of an Omni 3750 (with a Ethernet port), a router, a cable/ DSL/modem, and Ethernet cables to connect everything together to communicate over the Internet. The VeriFone IP solution was designed to support off-the-shelf routers and modems utilizing standard Ethernet and IP interfaces.



WHAT IS A ROUTER?

A router is a device (or software in a computer) that determines the next network point to which a packet should be forwarded toward its destination. The router is connected to at least two networks and decides which way to send each information packet based on its current understanding of the state of the networks it is connected to. A router is located at any gateway (where one network meets another), including each Internet point-of-presence.

In many ways, a router functions like an Internet post office. When it receives a packet of data, it reads the packet's destination address. To determine how



LINKSYS ETHERFAST®
CABLE/DSL ROUTER

Typically used by a small business.

to route each packet, the router maintains a table of the available routes and their conditions (i.e., availability and network traffic level) and uses this information along with distance and cost algorithms to determine the best route for a given packet. Typically, a packet travels through a number of network points (routers) before arriving at its destination.



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WHAT IS A CAT5 ETHERNET CABLE?

Network cables come in different types and grades, called "categories." Category 5, called "CAT5" for short, is the most reliable and commonly used type of network cable today. Each CAT5 cable has an RJ-45 connector at each end that fits into the RJ-45 ports of the devices (e.g., router, PC, cable/DLS modem, etc.) the cable is connecting.



WHAT IS DHCP?

Dynamic Host Configuration Protocol (DHCP) is a communications protocol that lets network administrators manage centrally and automate the assignment of Internet Protocol (IP) addresses in an organization's network. Using the Internet Protocol, each machine that can connect to the Internet needs a unique IP address.

When an organization sets up its computer users with a connection to the Internet, an IP address must be assigned to each machine. Without DHCP, the IP address must be entered manually at each computer and, if computers move to another location in another part of the network, a new IP address must be entered. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.

WHAT IS THE DUAL-COMM MODULE?

The Omni 3750 has various communication modules that allow the merchant to meet their communication requirements. The dual-comm module provides the best of both worlds. Transactions can be performed over the Internet while the modem can be used to perform VeriCentre downloads or, if some of the value-added applications only support dial, they can utilize the modem as well.



WHAT IS A DSL/CABLE MODEM?

A modem allows for the conversion of Ethernet to the transmission media. The modem is generally supplied by the carrier and represents the last point of presence for the carrier. Most modems have a single Ethernet port with a routable IP address supplied by the ISP.

CABLE MODEM EXAMPLE



DSL MODEM EXAMPLE



HOW DOES DIAL-BACKUP WORK?

The transaction is initially sent via IP; however, if there is a communications failure, the terminal senses this and dials the processor using an analog phone line - exactly as previous dial terminals have done.

