



IPoint™—Internet-based Data Transfer

Benefits

- IPoint™ combines with the VG330 to provide a turnkey Internet access solution for embedded applications.
 - ⇒ Lowers cost of data communication with remote devices
 - ⇒ Enables faster data collection
- Delivers fast time-to-market for OEM's embedded Internet applications
- Drastically reduces the development and manufacturing costs for Internet access capability
- Allows OEM designer to focus on core functionality of product
- Shields software engineer from the complexity of TCP/IP, PPP/SLIP, modem setup, and ISP connections setup.

Features

- Runs on Vadem's VG330—a 16-bit, 32 MHz single-chip PC
- Delivers FTP and E-mail functionality for data transfer over Internet
- Easily configurable modem setup and ISP access
- Simple, compact and easy-to-use API
- Includes standard DOS and Vadem's BIOS
- Easy, PC-based DOS application development environment
- Supports TCP/IP, PPP and SLIP protocols
- ROM conversion utility provided
- Applications debugged on target VG330 platform using the VG330 Evaluation Board and an ICE system

Overview

IPoint™ is a high-level software solution for Internet-based data transfer. Designed to run on Vadem's VG330 single-chip PC, the VG330/IPoint combination offers OEMs a simple and low-cost approach for incorporating Internet-based data communication into embedded applications.

IPoint addresses a growing demand from OEMs to integrate Internet-based connectivity in **Embedded Internet Appliances**. Examples of these applications include:

- Utility meters
- Security and remote surveillance systems
- POS systems, ATMs, and vending machines
- Remote healthcare devices
- Remote monitoring of network devices
- Remote Diagnostic devices
- Remote printing for digital cameras

Some of these applications currently employ field personnel to monitor and collect data from installed devices, leading to high operational costs. Other applications use modems and regular phone connections to facilitate communication between equipment operator sites and remote field installed devices. However, the distributed nature of installed devices and the costs of long-distance phone calls can still lead to high operational costs.

The ubiquity of the Internet, and increasingly cost-effective means of accessing it, are providing a lower cost alternative for equipment operators who need to communicate with remote appliances. However, undertaking the development of this capability is often too costly and too complex for an appliance OEM, which focuses mainly on delivering the core functionality of its product.

Supported by the **IPump** reference design, the VG330/IPoint combination simplifies the integration of Internet communications into embedded systems, while drastically reducing both development and manufacturing costs.

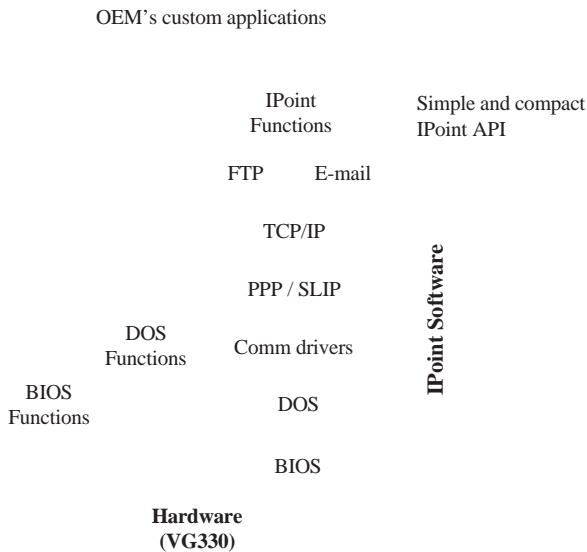
IPoint software suite

The IPoint software is organized as a library of simple-to-use software functions. These are accessed by a user's custom application via a well documented API, and allow such applications to:

- Connect to an ISP (Internet Service Provider)
 - Connect to a remote computer over the Internet
 - Send and receive data to and from remote computer systems over the Internet using FTP (File Transfer Protocol)
 - Send (SMTP) E-mail message to remote computer systems.

IPoint's FTP and E-mail functions are built on top of a TCP/IP protocol stack, which supports SLIP and PPP. The protocol stack also includes modem setup and dialing, and host connection scripting.

As IPoint has been designed to run on the x86-compatible VG330, it also includes BIOS and DOS. The structure of the IPoint software is shown below.



IPoint application development features

IPoint not only provides OEMs with effective data transfer features, but also offers standard DOS as an integral component. This makes the VG330 an open DOS platform, simplifying the software development process.

Users develop custom software as a DOS application, using the IPoint API for data communication functions

Software applications can be developed in C

Applications are prototyped in a DOS environment on a Windows 95 or Windows NT-based PC, using standard DOS development tools.

A ROM conversion utility is provided

Applications can be debugged on the VG330 by using the VG330 Evaluation Board with an ICE system

