



the chili box



ignite your network

**VIA Technologies, Inc.
& Chili Systems, Inc.**

March 2006

Introducing the ChiliBox

ignite your network

Copyright Notice

Copyright © 2001-2006 Chili Systems, Inc. All rights reserved.

Under the copyright laws, this whitepaper can not be copied, in whole or part, without the written consent of the manufacturer. The same proprietary and copyright notices must be affixed to any permitted copies as were affixed to the original. This exception does not allow copies to be made for others, whether or not sold, but all of the material purchased (with all backup copies) can be sold, given, or loaned to another person. Under the law, copying includes translating into another language or format. "ChiliBox" is a trademark of Chili Systems, Inc. www.chilisystems.com

Other product and company names mentioned herein can be trademarks and/or registered trademarks of their respective companies.

Specifications and descriptions subject to change without notice.



Table of Contents

Introduction: The Problem with Small Business Networking.....	4
“How do I build my computer network?”	4
The Small Business Networking Landscape	4
The Networking Challenge	5
The “Pepper” to the Rescue	5
Chili Spices Up Small Business Networking	6
What is the ChiliBox?.....	6
ChiliBox Checklist.....	6
Powering the Pepper.....	8
VIA EPIA PD10000 Mini-ITX Mainboard Overview	8
The Secret Salsa.....	10
Financial Software Server.....	10
Secure Remote FTP Server via ChiliDrive.....	11
Figure 4: Secure Remote FTP Server via ChiliDrive enables seamless file transfer	11
Complete Data Protection.....	11
The ChiliBox in the Real World	12
Graphic Artists, Architects, Photographers, and Land Developers	12
Entrepreneurs	12
Broadband and Telco Providers	12
Conclusion.....	13
Appendices.....	14
Appendix I: ChiliBox Features and Benefits	15
Appendix II: VIA EPIA PD10000 Mini-ITX Mainboard Specifications.....	17

Introduction: The Problem with Small Business Networking

“How do I build my computer network?”

In today’s world, computers and the Internet are essential business tools used by small businesses. Owners and managers know that they need these tools in order to communicate with clients and staff, sell products, and manage corporate materials and records.

Since most people running small businesses are not technical experts, the challenge of building a computer network is daunting because of the complex issues involved.

- **Product Knowledge** - Technology is rapidly changing and new innovative products and ideas are constantly introduced to the market.
- **Technical Knowledge** – Deploying and maintaining a network is a complicated task which requires experience and resources.
- **Budget** – Spending requirements frequently require technical compromise.

If these issues are thoughtfully considered, the business can have a network that enables the company to focus on customers and on growing profits. If these issues are poorly managed, a nightmare scenario can develop where the frustrated owner spends precious time and resources tinkering with several pieces of ‘network hardware’, wires and difficult software setups, trying to get it running.

This paper will explore how small businesses can now more easily build computer networks that are productive, easily managed, reliable, and affordable.

The Small Business Networking Landscape

The SOHO (Small Office Home Office) market represents one of the fastest growing segments in the technology market today. According to a 2001 survey by the Small Business Association, there were over 22 million small businesses in the U.S. alone (source: SBA.gov). Over 85% of them had more than one PC and internet connectivity.

Combine this information with home networks, and we find over 60 million broadband connected homes and small businesses, a figure that is growing at a rate of approximately 10% per annum. (Source: Parks Associates’ Research and Forecasts).

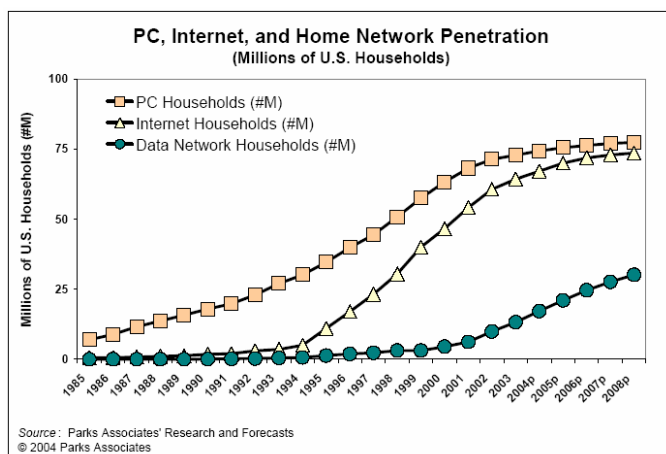


Figure 1: Home network penetration in United States households

The Networking Challenge

Building a small business network should be as easy as opening a checking account. Unfortunately, this has not traditionally been the case. Selecting the right hardware, software, and service components to build a productive office environment can be a daunting task. Though networking standards exist (for example, TCP/IP is the backbone protocol to which all modern computers communicate) making communication possible, multiple elements are required to bridge the connection between the Internet and the PC. Between these two connection points lie routers, modems, cables, wireless devices, virus, spam, hackers, identity theft, and a slew of other points of failure and danger for the small business owner.

The “Pepper” to the Rescue

Chili Systems has long recognized that **small business owners need to focus on what they do best; running their small business**. That is why they have developed a suite of products and services that offer the small business a one-stop-shop for their technical needs. Together with their partners, Chili Systems have put together a comprehensive range of network infrastructure hardware, productivity software, and support services that are designed to grow with the expanding needs of the SOHO business.

At the center of Chili Systems’ SOHO networking solution is the ChiliBox, the all-in-one network server appliance that has been designed to combine all of the essential networking elements required by today’s small businesses. With one ChiliBox, a small business can now have:

- **License-Free Firewall** – to protect your network
- **Central File Storage** – share your office files, music, and accounting software
- **Professional Email** – unlimited professional @mybusiness.com email accounts
- **Data Backup** – keep your data safe with an external USB Hard Drive
- **Remote File Access** – your sales people and your customers can have access from any Internet connection in the world with ChiliDrive
- **100% Cross-platform Compatibility** – whether the connected computer are Mac, PC or anything else, everyone can connect and share information with the ChiliBox

One thing is certain, small business owners are a very sophisticated group that want technology to provide them with a competitive advantage in the marketplace. As such, the demands of the network must also keep up with this growing sophistication. Chili Systems is committed to providing solutions to the ever changing SOHO landscape, and has turned to VIA to provide the hardware building blocks to achieve this.

Chili Spices Up Small Business Networking

The ChiliBox is an all-in-one SOHO network server appliance based on the VIA EPIA PD10000 Mini-ITX mainboard, which is designed to make building the 2-15-person small business network easy and affordable. The key to this hassle-free device is the integration of all the essential core network components and hardware into a single, pre-configured, network appliance. Chances are, if you're starting a new small business, or are looking to upgrade your existing network to provide better security, access, and productivity, you need a ChiliBox.



Gone are the days of stringing together multiple pieces of hardware, countless hours of configuration, and crazy licensing programs. Simply connect the ChiliBox to a Cable/DSL or other broadband connection and start networking. With the ChiliBox, the new business owner no longer has to ask, "How do I set up my computer network"; all they need to do is order the pepper!

What is the ChiliBox?

The ChiliBox is an all-in-one network server appliance specifically designed for small business and home networks. The Chili Box creates a data network without any compromise by integrating software and hardware so that all network services seamlessly work together, including router, firewall, fileshare, email server, anti-virus & spam protection, VPN, secure remote file access, Web proxy, and remote administration.

ChiliBox Checklist

- **Router** – enables seamless connection to the Internet.
- **Firewall** – strengthened by the VIA PadLock Security Engine, ChiliBox's advanced firewall protection services are enabled by default to ensure bulletproof protection of your network.
- **Fileshare** – multiple users can easily share information from a central file location that empowers simple and easy backups of essential data for your network.
- **Email Server** (POP3) – handing power back to the small business owner, the ChiliBox's email server allows users to create unlimited user accounts, email aliases and domains without any additional charges.
- **Web Proxy** – monitor and control user access to websites.
- **Secure Remote Access (NAT/PAT)** – enabling users to access their computers without having to be in the office.
- **Virtual Private Network (VPN)** – utilizing real-time military-grade security offered by the VIA PadLock Security Engine to strengthen and accelerate IPsec, the ChiliBox provides secure connections to facilitate office-to-office connectivity.
- **Dynamic DNS** – host your Web sites, control your emails, and manage your files all through a cost-effective dynamic IP address.
- **DHCP Server** – enables users to share network resources including the Internet.
- **ChiliDrive** – securely access, distribute, and manage your files from any location on the ChiliBox anytime you have an Internet connection.

- **ChiliSync** – automatically back up data from computers on the ChiliBox network.
- **Virus Protection & Spam Filtering** – the ChiliBox blocks malicious attachments to email before they enter your network, and the spam filter has preconfigured settings to identify messages as spam as they are received on the ChiliBox.

With this comprehensive checklist of features, the ChiliBox enables secure easy-to-use business networking that lets customers focus on what they do best; running their small business.

Powering the Pepper

At the core of the ChiliBox is VIA EPIA PD10000 Mini-ITX mainboard, which is one of the ultra compact Mini-ITX mainboards designed to facilitate easy integration into customer systems. Built upon the 1.0GHz VIA C3 processor (Nehemiah core), provides more than enough power to handle the most demanding business networks.

VIA EPIA PD10000 Mini-ITX Mainboard Overview

EPIA Mini-ITX Dream Catalyst **PD-SERIES**

The VIA EPIA PD10000 Mini-ITX mainboard is the ultimate low profile, low power, and small form factor platform featuring a powerful cool running VIA C3 or fanless VIA Eden processor. Boasting efficient DDR266 SDRAM memory bandwidth and the high data transfer speeds of ATA-133, the VIA EPIA PD10000 empowers commercial server applications such as the ChiliBox to efficiently handle multiple simultaneous client requests, and with a maximum processor power consumption of just 15 watts facilitates low power cost effective always-on operation.

Utilizing the rich feature set of the VIA CLE266 digital media chipset coupled with the VIA VT8235 SouthBridge chipset, the VIA EPIA PD10000 empowers unprecedented connectivity with dual LAN, up to four communication ports, and an LVDS connection.

The VIA EPIA PD10000 conforms to the Mini-ITX form-factor measuring a mere 17cm x 17cm and has an ultra low profile to make it even more space saving. Its x86-based platform is compatible with a wide range of software including Microsoft® Windows® and Linux operating systems.

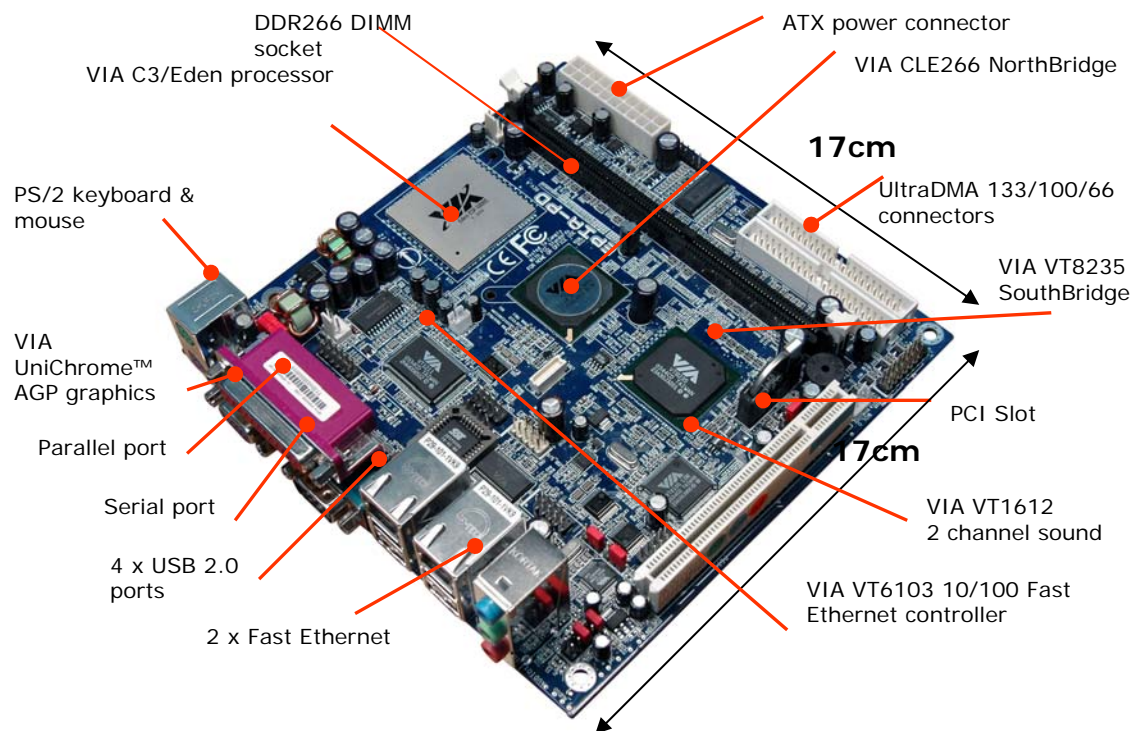


Figure 2: The VIA EPIA PD10000 Mainboard

The story doesn't end there, as the VIA platform has many more advantages, including the VIA PadLock Security Engine, a real-time military-grade encryption engine integrated into the VIA C3 processor, which strengthens and speeds up many of the security features of the ChiliBox. VPN connections, SSL interface, and SSH tunnels are only a few of the services enhanced by VIA PadLock.

VIA empowers the ChiliBox to take advantage of the advanced integrated security feature set of the VIA PadLock Security Engine, through the VIA JCP, an add-on package to the Java Runtime environment, that offloads functions utilizing AES encryption and secure random number generation to the engine. When combined with extensive driver support and pre-packaged modules such as the VIA JCP Java add-on to enhance system security available through VIA, the VIA EPIA PD10000 Mini-ITX mainboard is a highly effective solution for server appliances.



Table 1: VIA PadLock Security Engine Features

Feature	Benefit
Quantum based random number generator	Creates truly random number at a rate of between 1600K to 20M per second to provide an unshakable foundation for security
Real-time AES encryption engine	Encrypts & decrypts data on-the-fly using military-grade AES encryption at speeds of up to 10 gigabits per second

For a detailed specification of the VIA EPIA PD10000 Mini-ITX mainboard, please see appendix two.

The Secret Salsa

Chili Systems offers the right ingredients to build the small business network. With a buffet-like offering of services and features, the ChiliBox could find a home in just about any small business. The ChiliBox really sizzles when deployed to solve specific technical challenges in a small business environment.

Solutions to Real Business Challenges

Financial Software Server

By hosting the database files of your favorite financial application on the ChiliBox, a small office of two can easily service the books. In addition, the ChiliBox enables multiple remote access connections for the boss who burns the midnight oil, or when the accountant needs to jump in for a quick reconciliation. All while the ChiliBox backup engine quietly archives the company's critical financial data to an external USB hard disk drive for safe off-site storage.

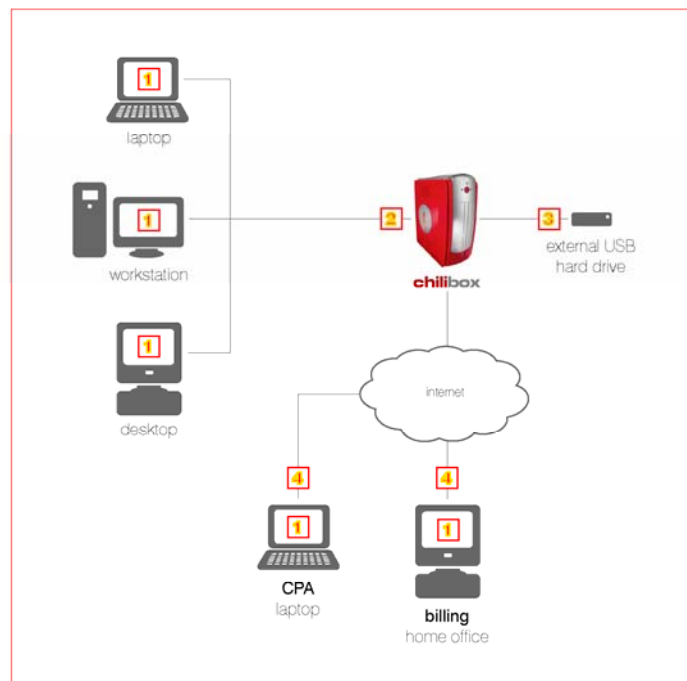


Figure 3: How the ChiliBox works

1. Install software on PCs.

The financial software needs to be installed on local and/or remote computers.

2. ChiliBox Fileshare.

The database file for the financial software is saved to the ChiliBox for shared access.

3. USB backup/rotation.

The external USB drive creates another level of data protection, which may be easily moved off-site.

4. Secure remote access.

Remote users can securely exchange files using ChiliDrive or via Remote Desktop Connection to operate a computer on the local network.

Secure Remote FTP Server via ChiliDrive

Say good-bye to email bounce backs, CD burning, and costly overnight postage. Utilizing the ChiliDrive, Chili Systems' secure remote file access tool, businesses can easily share files with customers or road warrior sales staff, outside of the office, from any Java-enabled Web browser. ChiliDrive works with your ChiliBox to create a complete, self-hosted, secure remote file access solution. Large files and important documents can now be shared instantly without the cumbersome efforts typically required to ZIP and email, or burn CDs and mail. Not to mention, ChiliDrive is PC, Mac, Linux, and UNIX compatible.

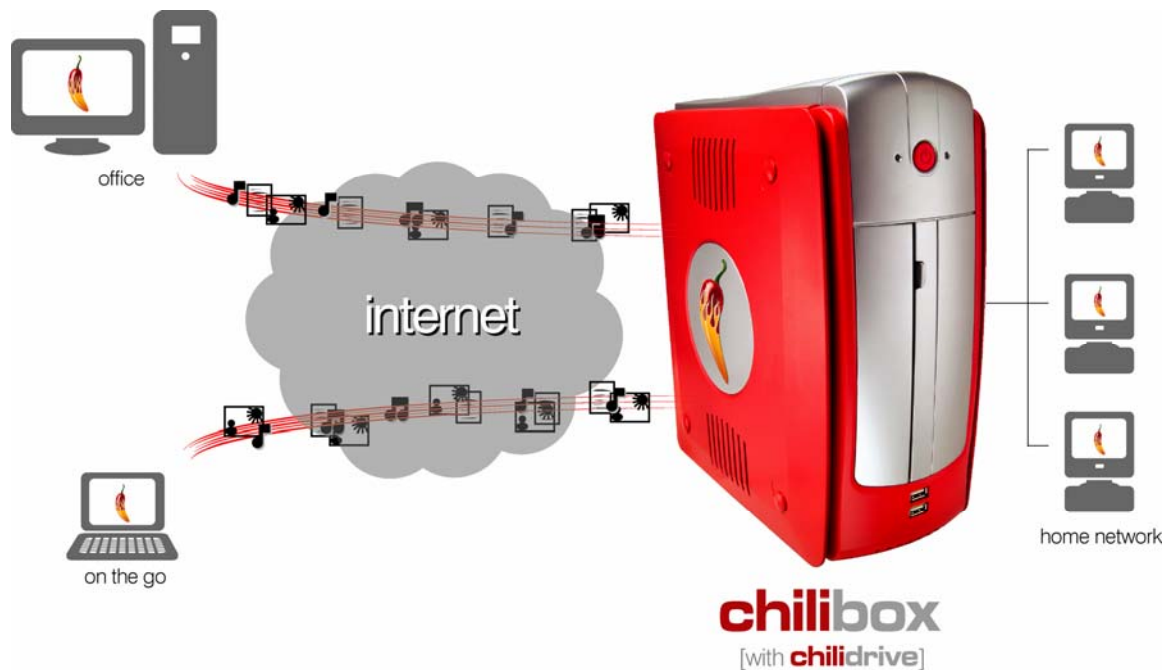


Figure 4: Secure Remote FTP Server via ChiliDrive enables seamless file transfer

Complete Data Protection

The ChiliBox is truly a complete server appliance combining all of the essential components of a business network. This tight integration allows the ChiliBox to offer a high level of data security and protection. The ChiliBox is UNIX based, which means that it is not susceptible to the dangers of the ever proliferating viruses that plague other operating systems. In addition, the ChiliBox provides a complete USB backup system. This gives the network owner an easy-to-use backup and archiving engine that is as easy as plugging in a USB hard drive to the ChiliBox. What's more, the backup is easily verified on any Windows or Mac PC; no proprietary software or complex tape drives to deal with. Finally, the ChiliBox is compatible with Chili Systems ChiliSync software, a real-time mirroring software that synchronizes and archives data from PCs and laptops attached to the ChiliBox network.

Chilisync enables customers to synchronize files and folders giving peace of mind that critical data is kept safe. The sync can be performed in real-time or at preset time intervals on local, network or removable drives.

The ChiliBox in the Real World

Graphic Artists, Architects, Photographers, and Land Developers

Large image & video files and CAD drawings are the scourge of the creative community. Often a client has to be sent a CD or physical plans because email cannot handle large file sizes. Typical FTP solutions require custom software installs and are often foiled by older firewalls and ISPs that block file sharing ports. The ChiliBox solves all of this with the introduction of the ChiliDrive. Driven by a secure Java-based applet, ChiliDrive allows ChiliBox owners the ability to easily share digital content with clients. Furthermore, ChiliDrive is cross-platform compatible, only a Java-enabled Web browser that is found on most standard PCs is required.

Entrepreneurs

Starting a new business can be very challenging. Organizing premises, telephones, administration, legal, distribution etc is demanding enough. However, with the introduction of the ChiliBox, setting up the business network is as easy as pie! Chili Systems gives new business owners the ability to host professional email with unlimited accounts, email addresses, and domain names, as well as secured Internet sharing with a complete router and firewall for the Cable or DSL connection, and centralized, secured, and backed-up network storage for unlimited PCs and laptops so employees can share and protect business documents, images, and music. And Chili Systems is ready to grow with the Entrepreneur by providing Web hosting, advanced group collaboration tools with ChiliMail, and a friendly and knowledgeable support staff.

Broadband and Telco Providers

The Internet is quickly becoming the single biggest innovation in human history. Never before has information exchange become so effortless and instant. But with this growth comes the demand for technologies that can take advantage of the Internet, all while making it easy. Chili Systems has begun several projects with telecommunications providers across the globe to bring together the voice and data network into a single device for the small business. This convergence includes technologies like VoIP and hosted PBX, WiFi-enabled handsets, and electronic document management, all centered on a ChiliBox. This technology is happening today, with progressive ISPs and CLECs (competitive local exchange carriers) that deploy the ChiliBox in combination with a high speed Internet connection. Small business owners are now seamlessly sharing office documents on the network while conference calling with manufacturing partners overseas, all the while having customers access the latest product catalog that is backed up in real-time.

Conclusion

Setting up a small business network to service customers better or boost profits by streamlining of operations is a difficult task. A number of maintenance, installation and operational issues exist, consuming valuable time that the small business owner could be spend to more effectively to run their business. Chili Systems, through the introduction of the ChiliBox have addressed the complexities of setting up, servicing and operating a small business network.

Using the VIA EPIA PD1000 Mini-ITX mainboard to power the “pepper” in ChiliBox, Chili Systems gives small businesses a secure powerful easy-to-use next generation technology that puts them back in charge of their IT infrastructure. Easily deployable and hassle-free, the ChiliBox delivers the functionality of an IT department at a fraction of the cost, enabling businesses to seamlessly harness multiple network services to help run their businesses efficiently and effectively.

Secured using the latest technologies, and utilizing the power and strength of the military-grade VIA PadLock Security Engine, the ChiliBox boasts unrivalled protection of data stored and exchanged to give users peace of mind that their data is safe. When combined with built-in expansion to grow as the business does, the ChiliBox is setting new standards for innovative SOHO network server appliances that give customers a secure feature packed easy-to-use product to let them focus on what they do best: running their small business.

Appendices

Appendix I : ChiliBox Features and Benefits

Feature	Comments	Customer Benefit
Router	Requires Ethernet handoff from cable/dsl/satellite/T1 connection	Productivity – enables connection to Internet
Firewall	Advance firewall settings are set by default including Black Holing, Spoof Packet Rejection, Denial of Service Protection, Port & IP Blocking.	Security – the ChiliBox’s advanced VIA PadLock strengthened firewall protection services are enabled by default to ensure the proper protection of your network. License-free service.
Fileshare	80 GB of data storage available for sharing and/or backup. Control user access and permissions.	Productivity and Data Protection – Multiple users can easily share information from central file location. If used for backup, you have multiple copies of key data from your network.
Email server – POP3	Unlimited user accounts Unlimited email aliases Unlimited domains	Control and Savings – Directly control and manage your company email accounts. Create new email accounts without any additional charges. License-free service.
Web Proxy	Can be set up with “whitelists” or “blacklists”	Control -- Monitor and control user access to Websites
Secure Remote Access (NAT/PAT)	Enables remote users to access their computers or servers on the inside of the network. Permits multiple connections at one time.	Productivity and Security – Users can easily connect to their computers while out of the office.
VPN	Uses IPSec standard and is strengthened through the VIA PadLock Security Engine	Security – Enables secure office-to-office connectivity
Dynamic DNS	Enables important network services while connected to a dynamic IP address. Gives network as easy to remember name on the Internet.	Savings and Productivity – Utilize a cheaper circuit with a dynamic IP and still enable all network services your staff needs to be productive. Access the network without having to know the IP address.

Features Cont.	Comments	Benefits Cont.
<i>DHCP Server</i>	Assigns private IP addresses to computers in the network.	Savings and Convenience – Enables users to share network resources including the Internet connection. Easily set up guest users.
<i>ChiliDrive</i>	Secure FTP through a VIA PadLock strengthened SSL encrypted Web page. Control user access and permissions.	Productivity – Securely access your files on the ChiliBox anytime you have an Internet connection. Also, distribute large files to individuals outside your company. No more bounced emails or burning CDs.
<i>ChiliSync</i>	Automatically backs up data from computers connected to ChiliBox network	Data Protection and Convenience – “set it and forget it” functionality for protecting your data
<i>Virus Protection & Spam Filtering</i>	ChiliBox strips malicious attachments before they enter the network. 10 levels of spam protection settings.	Security and Productivity – ChiliBox OS is resistant to viruses. Can prevent malicious attachments from entering network.

Appendix II: VIA EPIA PD10000 Mini-ITX Mainboard Specifications

Processor	<ul style="list-style-type: none"> VIA C3™/ VIA Eden™ processor
Chipset	<ul style="list-style-type: none"> VIA CLE266 NorthBridge VIA VT8235 SouthBridge
System Memory	<ul style="list-style-type: none"> 1 DDR266 SDRAM DIMM socket Up to 1GB memory size
VGA	<ul style="list-style-type: none"> Integrated VIA UniChrome™ AGP graphics with MPEG-2 accelerator
Expansion Slots	<ul style="list-style-type: none"> 1 PCI
Onboard IDE	<ul style="list-style-type: none"> 2 X UltraDMA 133/100/66 Connector
Onboard LAN	<ul style="list-style-type: none"> VIA VT6105 LOM+VT6103 10/100 Base-T Ethernet PHY
Onboard Audio	<ul style="list-style-type: none"> VIA VT1612A 2 channel AC' 97 codec
Back Panel I/O	<ul style="list-style-type: none"> 2 RJ-45 LAN port 1 PS2 mouse port 1 PS2 keyboard port 1 Serial port 1 Parallel 4 USB 2.0 ports 1 VGA port 3 Audio jacks: line-out, line-in and mic-in
Onboard I/O Connectors	<ul style="list-style-type: none"> 1 USB connector for 2 additional USB 2.0 ports Front-panel audio connectors (mic-in and line-out) 1 Buzzer SIR connector CIR connector (Switchable for KB/MS) Wake-on-LAN CPU/Sys FAN/Fan 3 1 Connector for LVDS module 3 Serial port connector for 3 additional com port; 3/4 com port with 5V or 12V power jumper selection (Default power setting is 5V) ATX Power Connector
BIOS	<ul style="list-style-type: none"> Award BIOS 2/4Mbit flash memory
System Monitoring & Management	<ul style="list-style-type: none"> CPU voltage monitoring Wake-on-LAN, Keyboard Power-on, Timer Power-on System power management AC power failure recovery
Operating Temperature	<ul style="list-style-type: none"> 0~50°C
Operating Humidity	<ul style="list-style-type: none"> 0% ~ 93% (relative humidity; non-condensing)
Form Factor	<ul style="list-style-type: none"> Mini-ITX (6 layer) 17 cm x 17 cm