

Networking and VoIP Flexibility for the Small Business

Introducing the PL-80300

The PL-80300 is an original design developed for businesses who need to offer their clients a cost-effective and efficient platform capable of options typically found in larger, enterprise networks.

With the PL-80300, OEMs, System Integrators, Software Providers, Solution-Level Providers, and Resellers can easily develop an efficient, adaptable, and affordable Converged Application Platform for their Small Business or Remote Enterprise office clients networking requirements.

Energy and cost-efficient architecture features:

- Intel® Atom™ D510 Dual-Core and D410 Single-Core processors with DDR2 RAM controller and x86-64bit support.
- Up to 6 Intel® 82574L Gigabit Ethernet Controllers backed by dedicated high-performance PCI Express links
- Barebones *maximum* system power of under 30W

Flexible expansion:

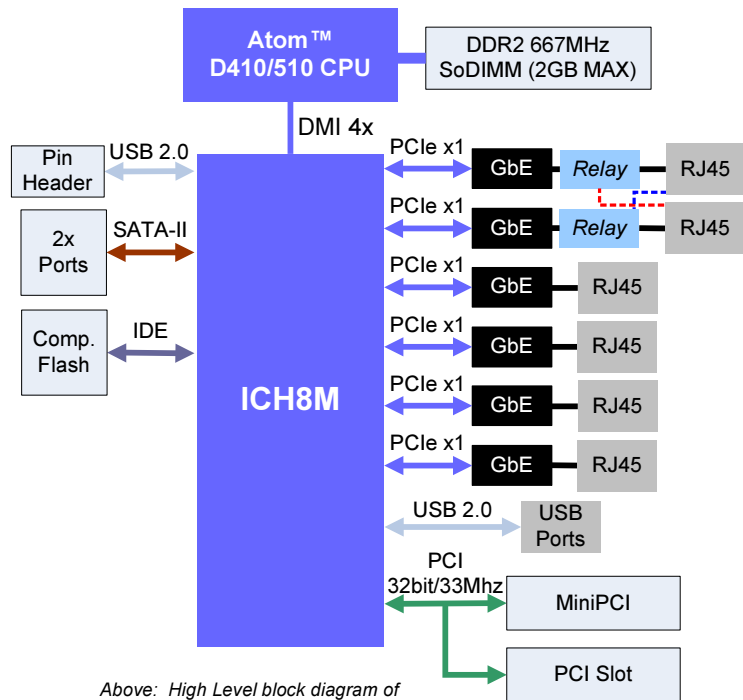
- 32-Bit PCI and miniPCI expansion slot available for after-market or custom-designed networking applications, e.g., IPsec, SSL, T1/E1, IP-PBX, and more!
- GbE edge connector allows for custom designed Ethernet switch or Hub applications

Building on the framework laid down by our PL-80120* platform, the PL-80300 with PCI bus expansion adds tremendous number of additional roles that this popular unit can fill.

The PL-80300 combines the efficient power of the Intel® Atom™ series of processors with up to 6 feature-rich Intel® 82574L Gigabit LANs set up the impressive array of functions that this unit can provide to your small business clients.



Above: PL-8030A Variant with Atom D510 CPU and Samgoma® A102 T1/E1 Card installed for Reference.



Above: High Level block diagram of PL-80300 (COM Port not shown)

In addition to these initial networking functions, the PL-80300 features expansion for standard 32-Bit PCI, offering a cost-effective platform with access to the flexible PCI bus allowing a provider or reseller the ability to adapt the PL-80300 for any number of new capabilities.

Further, If you who develop your own network-based PCI-hardware or networking software, the PL-80300 gives you the ability to bundle your services with a consistent platform using the familiar x86 architecture backed by Intel® components.

*<http://www.win-ent.com/network-computing/network-systems/1u-platforms/314-pl-80120.html>

Consolidation and Flexibility

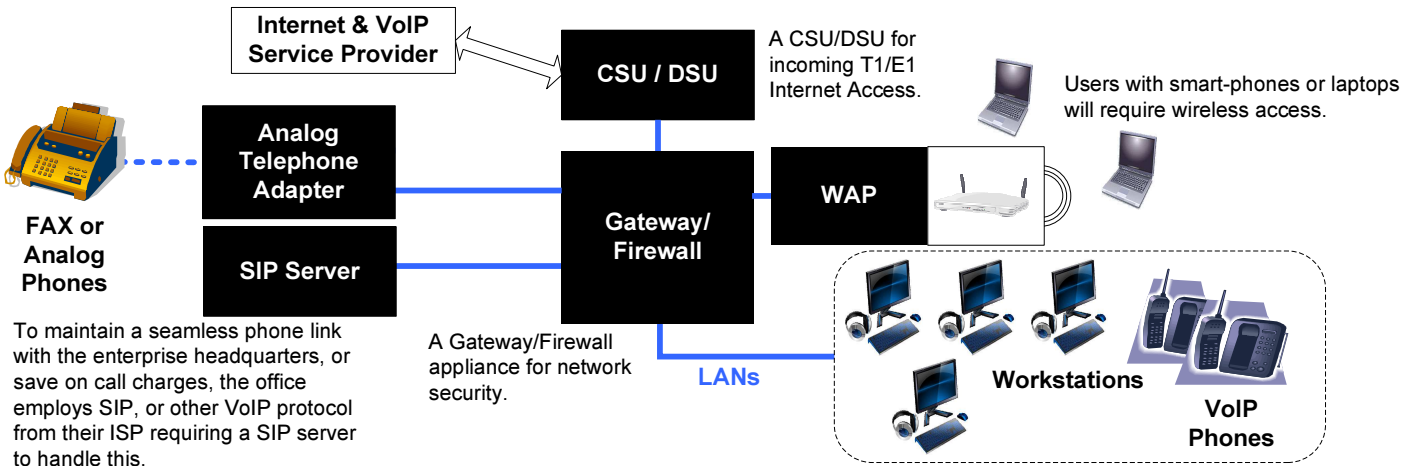
On this page we will illustrate the flexibility of the PL-80300 in a Small Business or Enterprise Branch Office, this example will help you to envision just one of the myriad places that this platform can go, and what market needs it can fill for your clients.

Below is a comparison between the map of a typical layout using multiple discrete units. This is a common approach but can create unnecessary complexity as often these will each come from different vendors, and different interfaces making administration difficult and costly vs. a simplified approach with the PL-80300 and offering the same features by using open-source software and aftermarket components.



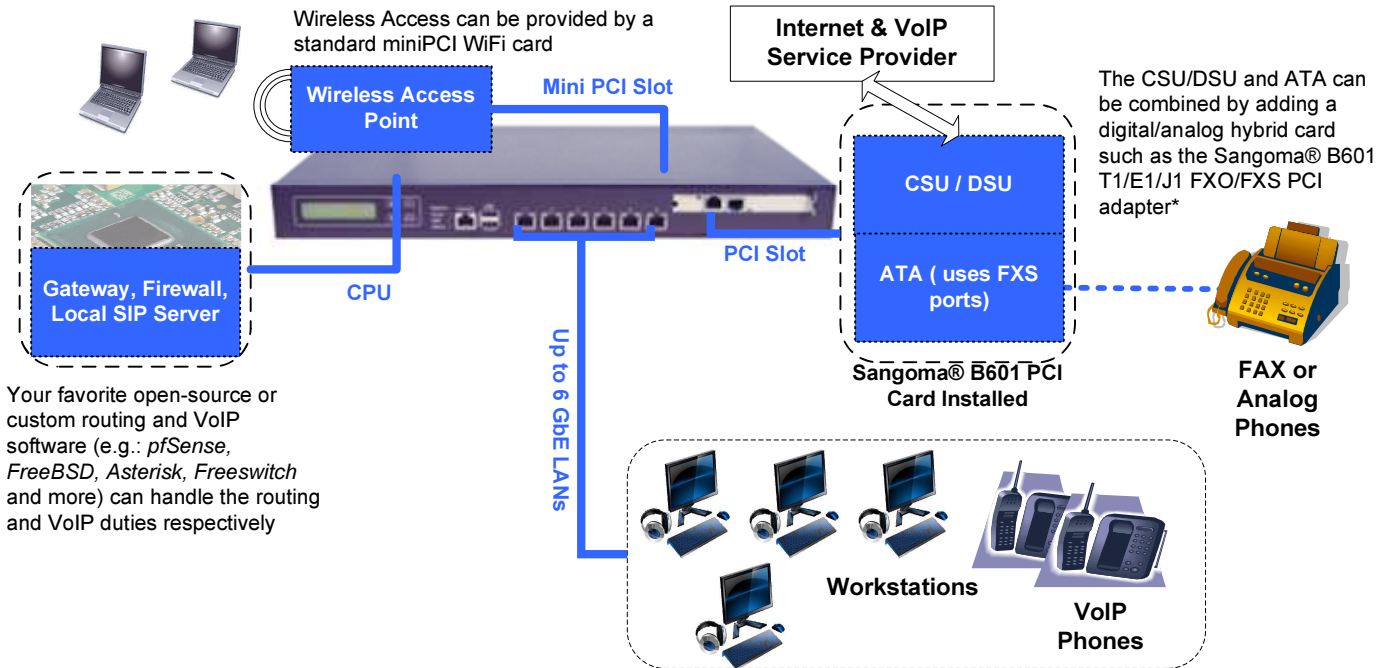
Even for small networks, a jumble of cables, boxes and interfaces can be expensive and difficult to monitor and manage versus a consolidated hardware and software effort afforded by the PL-80300.

Traditional Layout



To maintain a seamless phone link with the enterprise headquarters, or save on call charges, the office employs SIP, or other VoIP protocol from their ISP requiring a SIP server to handle this. This will enable them to allow FAX support, but this may require ATA devices if they require analog lines.

Consolidation with The PL-80300



Your favorite open-source or custom routing and VoIP software (e.g.: *pfSense*, *FreeBSD*, *Asterisk*, *Freeswitch* and more) can handle the routing and VoIP duties respectively

The CSU/DSU and ATA can be combined by adding a digital/analog hybrid card such as the Sangoma® B601 T1/E1/J1 FXO/FXS PCI adapter*

Featuring Intel® Gigabit Performance with the Intel® 82574L LAN chipset

With 6 82574L GbE processors each backed by a PCIe x1 link, the PL-80300 has excellent bandwidth capability for its targeted market segment.

The Intel® 82574L Gigabit Ethernet network chips are laden with advanced networking capability that is often found in much more expensive networking solutions.

Features of the 82574L chip include:

- Support for 9018 Byte Jumbo Frames
- Two optimized Tx and Rx queues for efficient packet prioritization and handling without waiting for buffer overflow
- Legacy and MSI modes for Interrupt Mapping
- MSI-X Extension for Advanced interrupt mapping across multiple cores, more vectors per function
- Programmable host memory Rx buffer per queue to allow for efficient use of PCIe bus and system memory
- Many more advanced host offloading features to improve CPU and memory utilization*



With these advanced features, small business equipment like the PL-80300 can serve up more networking efficiency than was previously able in such a platform at the entry-level.

*See the following Intel® product brief for more information:
<http://download.intel.com/design/network/ProdBrf/319918.pdf>

Simplify your user interfaces with the PL-80300

PL-80300 gives you a software advantage by using IA-x86 architecture, which is well known and strongly supported from both closed and open-source developers, consolidating the multiple devices required in a modern network with the PL-80300 allows you to unify the complexity of multiple user interfaces and software solutions into a single unified platform.

With several open and closed sourced OS, driver, and middle-ware solutions available for the x86 architecture, you can have the ease of being able to manage and easily train your technical staff (or your customer's) in applications they are likely familiar with.

Open Source operating systems can include much of the firewall and routing software you need as a starting point for your solution with little maintenance with additional support for feature-rich VoIP products.

Operating Systems Supported

A sample of suggested operating systems for the PL-80300 include:

Microsoft® Windows™ XP, Embedded, 7 (and Embedded variants)

Linux and Unix Operating** systems such as: OpenSuse (10+), Ubuntu Desktop/Server (10+), Debian (5.05+), Fedora (10+) and FreeBSD (8.2+)

**Listed operating systems are *suggestions*, additional support/porting options are available, check your kernel/distro documentation for additional information.

The Atom D410/D510 processors also support both 32-bit and 64-bit (EMT64 / x86-64) variants of the above software.

Additional Hardware

In addition to its networking and software integration potential, the PL-80300 features additional benefits for the system integrator to easily add features and value for their clients:

- Dual-Core and Single-Core options add scalability in price and performance
- Dual SATA-II compliant HDD or SSD storage links
- Compact Flash slot interfaced via PATA link to provide the most responsive and seamless OS storage option

For serviceability the unit offers the following interface options without having to remove the device from its rack, or open the chassis:

- 16x2 Character LCD with Keypad for programmable I/O for user/technician interface.
- RS232 Console port for system maintenance.
- Dual USB 2.0 ports for unit software or firmware upgrades.

Design Ownership

WIN Enterprises is continuously developing network application platforms with increasing features and competitive price points targeted to OEMs, and System Integrators to build their next solution-level products.

WIN owns the entirety of PL-80300 design, as well as all designs that manufactures. Everything from the PCB to chassis can be branded or modified in an infinite number of configurations.

Finding your solution

Options can be as intensive as re-configuring the PCB to modify it's layout, including designs such as additional switch fabric, or entirely different design architecture. If you are a custom hardware vendor, we can integrate your design into the platform itself.

The range of modifications WIN can perform on its OEM solutions is impossible to put down in few words. We are always ready to hear your questions and requirements, to walk you through the steps required to meet your exact needs.

Saving you money

As mentioned before, cost reduction options such as de-population of unused components can have dramatic effects on your bottom line, however there are even more options to consider.

WIN Enterprises can use it's extensive library of proven designs, and years of design knowledge to reconfigure it's existing designs, or develop an entirely custom one, to fit your targeted price point with very low design costs.

For more information about how to work with WIN Enterprises on product integration, design, production, EoL management and more, visit:

MOD - Modular Optimized Design

http://www.win-ent.com/images/stories/whitepaper/whitepaper_mod_60700_final1.pdf

VIS – Vertically Integrated Services

http://www.win-ent.com/images/stories/whitepaper/whitepaper_vis_07_15_2010.pdf

EoL Management

http://www.win-ent.com/images/stories/whitepaper/whitepaper_eol.pdf

Whitepaper Library

<http://www.win-ent.com/about-mainmenu-28/white-papers-mainmenu-125.html>

Your Product Solution Partner

WIN Enterprises has a family of Networking Appliances based around not only the Atom ecosystem, but a range of Intel products and more, offering different integration possibilities and market opportunities for your next great networking product.

Please visit the following links for more information:

http://www.win-ent.com/images/stories/whitepaper/whitepaper_pineview_update.pdf



For a free consultation on our solution, our capabilities, or to discuss custom designs, contact us:

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