PFU
A RICOH Company

Customization of Fast Boot Time:
The Key to Long-Term Adoption of Silex Wireless LAN Modules Since 2012

OVERVIEW

PFU Limited, a leading Japanese provider of advanced information technology solutions, has built a strong position for delivering industry-leading image scanners that combine cutting-edge image processing with user-friendly design. These products help businesses streamline operations - from document management to data storage and workflow optimization.

Since 2012, PFU has adopted Silex technology's wireless modules to integrate high-performance wireless connectivity into its scanners. This integration has enabled PFU to enhance product flexibility and performance.

In this case study, Silex spoke with PFU's engineering team to explore their commitment to innovation and why Silex remains their trusted choice for wireless connectivity.

CUSTOMER PROFILE

Company: PFU Limited
Industry: Document Imaging & Information Solutions
Headquarters: Japan

Silex Modules Implemented:

- SX-SDMAX-2530S
- SX-SDMAC-2832S
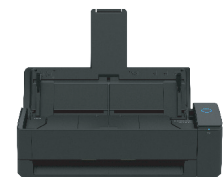- PF-SDMGN (customized model built for PFU)

Wi-Fi Enabled PFU Products:

- ScanSnap iX2500
- ScanSnap iX1600
- ScanSnap iX1500
- ScanSnap iX1300
- ScanSnap iX500
- ScanSnap iX100
- fi-7300NX

ScanSnap iX2500

ScanSnap iX1600

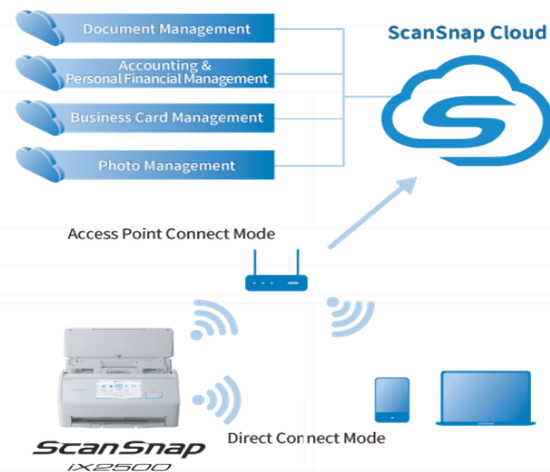**ScanSnap iX1300**

ScanSnap iX500

ScanSnap iX100

fi-7300NX

PFU's Product Development Focus: User Friendly for Consumers and Businesses

PFU's ScanSnap series, designed for both individuals and small businesses, delivers compact and fast, high-quality scanning with effortless usability for everyone. With just a few steps, users can convert paper documents into digital files. The built-in Wi-Fi feature allows for direct connection to cloud services.

For professional use, PFU provides image scanners designed to handle large-volume documents quickly and accurately, streamlining document workflows and improving efficiency. These scanners support both wired and wireless LAN, ensuring fast, high-resolution scanning in business environments. To cater to diverse corporate needs, PFU offers customizable workflows with advanced features like security settings and IC card authentication, allowing companies to tailor scanner operations to their specific requirements.

PFU's approach to product development, whether for personal or commercial use, is guided by a clear goal: to make scanners as simple and easy-to-use as possible. About 15 years ago, scanners were typically fixed in place and connected to PCs via USB cables. As mobile devices and cloud services became more common, PFU recognized the need for cable-free/Wi-Fi operation. To meet this demand, PFU developed its own SoC for image processing and built it into its scanners. This innovation enabled PC-free scanning and made it possible to add new values like Wi-Fi connectivity.

Starting from Scratch, A Strong Wi-Fi Partner was Needed

"At the time, we had no experience with wireless technology. PFU really had to start from scratch. I remember not even knowing the difference between Wi-Fi and wireless LAN. As a software engineer, my criteria for choosing a vendor were clear: they needed to offer helpful guidance during development, provide software support after launch, and of course, meet the technical standards set by PFU."

"For hardware, our criteria for selecting a vendor were straightforward: we preferred a Japanese manufacturer and considered cost. Of course, performance and long-term supply capability were also key factors. Silex supported us from early stages, helping draft specifications and sharing valuable knowledge throughout development. Thanks to their support, we were able to create the best product. It was also a great help that Silex worked closely with us to define the criteria for verification testing."

Osamu Miyakawa,
Document Imaging Business Group, PFU

Ken Funaki
Document Imaging Business Group, PFU

PFU'S Key Challenges

- PFU had no wireless know-how and needed a strong, knowledgeable partner.
- The selected solution must meet PFU's technical requirements while offering good cost performance.
- Detailed requirements were required for wireless LAN module technologies, along with assurance of long-term supply.

Results

- With Silex's support from the early specification drafting stage, PFU was able to build up its wireless know-how.
- Fast boot time was achieved, delivering effortless usability.
- The final products met radio compliance standards in 70+ countries.

Quick Booting Wireless Connectivity – A Must for PFU Products (Fast Boot Time for Instant Wireless Operation)

"Even after implementing Wi-Fi, PFU placed strong emphasis on fast boot-up performance, aiming to match the speed of traditional wired connections. While USB offers a simple, direct one-to-one interface, wireless connections require multiple processes including scanning peripheral access points, which typically takes 20 to 30 seconds."

Ken Funaki, PFU

"Users expect to power on the scanner, load the paper, and start scanning immediately. Waiting 20 seconds for a wireless connection causes frustration. High-speed wireless connectivity was a critical requirement for our products. Through conversations with Silex, like 'We want to do this' or 'Can this part be improved?', we worked together to develop solutions and improvements for faster startup."

Osamu Miyakawa, PFU

World's No.1 Market Share After Overcoming Global Radio Compliance in Over 70 Countries

"For PFU, product certification typically involves safety standards, EMC, and power-saving regulations. It was our first time dealing with radio compliance. Since we sell our products globally, we had to study laws, supported frequencies, and testing procedures across more than 70 countries. It was time-consuming and a major hurdle for us. To overcome this, Silex provided expert support through the certification process including Wi-Fi Alliance certification and compliance with regulations not only in Japan, the U.S, and the EU, but also in many other regions. Thanks to this collaboration, PFU successfully launched products worldwide."

PFU Celebrates Remarkable Achievement: 15 million Scanner Products Manufactured and Shipped Globally

https://www.pfu-us.ricoh.com/about-us/press-releases/2023/10/pfu-celebrates-remarkable-achievement-15-million-scanner-products-manufactured-and-shipped-globally

Looking Ahead

Together With Silex-From the Past and Into the Future

"PFU is committed to developing products from the customer's perspective, making them sophisticatedly simpler and faster, including Wi-Fi connectivity. PFU has continued to use Silex products since 2012 because of the success of our first wireless project, the reliability of their technology, and their excellent support. We especially value their sincere assistance when technical issues arise. As PFU focused on faster booting and connections, Silex delivered high-performance solutions. It is an honor to have such a strong partnership."

Miyakawa & Funaki, PFU

The long-standing partnership between PFU and Silex is built on technical reliability and high-quality support. This foundation continues to drive business success for both companies.

Additional References

PFU Limited company website: https://www.pfu.ricoh.com/global/scanners/

Press Releases

- https://www.pfu-us.ricoh.com/about-us/press-releases/2025/06/pfu-america-unveils-scansnap-ix2500
- https://www.pfu-us.ricoh.com/about-us/press-releases/2023/10/pfu-celebrates-remarkable-achievement-15-million-scanner-products-manufactured-and-shipped-globally

Product Lineup

- **ScanSnap iX2500:** https://www.pfu.ricoh.com/global/scanners/scansnap/ix2500/
- **fi-7300NX**: https://www.pfu.ricoh.com/global/scanners/fi/fi7300nx/

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