

Case Study: APU-9000 Thermal Printers

Minimizing Manufacturing and Operating Costs for Self-Service Applications

When Triton, the largest provider of off-premise Automatic Teller Machines (ATM) in the US and fourth largest ATM vendor worldwide, decided to add to its product line, it chose a Seiko Instruments APU-9000 thermal printer based on the CAP9000 printer platform. The new FT7000 ATM from Triton is a full-function through-the-wall model designed for use by financial institutions. Demanding specifications for performance, reliability, paper roll size, and serviceability had Triton looking at receipt printers from many vendors. Seiko Instruments was the only manufacturer to satisfy and exceed every one of Triton's design requirements. "Seiko Instruments met all of our requirements, while absolutely exceeding our performance expectations," said Bob Douglas, Director of Engineering at Triton. And, by delivering a simple to install unit that snaps into place, without fasteners, Seiko Instruments helped Triton shave 2 percent off its end-to-end manufacturing time for the new ATM.

The Market Leader

Walk into any convenience store in the US and you are likely to find a Triton ATM cash dispenser. Although it may seem as if these machines appeared from nowhere in recent years, it was the lifting of a ban on ATM surcharges in the mid-1990s that led to their widespread deployment by retailers. And it was innovative ATM designs from Triton that captured the market.

Triton is the US market-leader for off-premise ATM cash dispensers. From its earliest days in the industry, Triton has focused on offering high-quality, small footprint ATM terminals that deliver low total cost of ownership (TCO). After identifying through-the-wall ATMs as a growth opportunity, Triton developed the FT7000, adding a high-end solution to its product line. To compete with well established vendors in this sector, Triton emphasized aggressive design requirements that included: robust functionality, low TCO, ease of service, and high performance. High-quality peripherals were essential to achieving these goals.

Rethinking Requirements

To satisfy the demanding requirements of a high-volume banking environment, Triton had to take a new look at building ATMs. While off-premise machines are designed to handle two to three hundred transactions per month,



an ATM at a busy financial institution can process thousands of transactions in the same period. Uptime requirements are also much more stringent. A rigid 4-hour ATM service window is the norm for the industry. These performance, reliability, and serviceability demands presented a formidable challenge for Triton's suppliers.

When Triton began their search for a receipt printer for the FT7000, the development team put together a list of essential requirements. To make certain components would not compromise ATM uptime, Triton devised a punishing series of tests to simulate a wide range of operating conditions. To assess durability, through-the-wall ATM units would be sealed in an environmental chamber and run 24-by-7 for several days.



Triton FT7000 ATM with the APU-9000 thermal printer

The environmental chamber would mimic the worst weather conditions imaginable, and included a four-corners test to expose the units to extreme high and low temperature and humidity levels. For reliability testing, units would be made to print over 1 million receipts, significantly exceeding real world expectations for the machines.

In addition to environmental and reliability testing, the printer for the FT7000 had to satisfy exacting design goals. To reduce the



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frequency and cost of routine ATM maintenance, the printer had to support a specific 10 diameter paper roll. Developers also determined that avoiding costly paper jams required that users be prevented from accessing the receipt before it had been printed, cut, and presented. And, if the ATM user did not take the receipt, the printer had to retract it and deposit it in a storage bin.

With all of these factors essential to satisfying the requirements of large financial institutions, Triton contacted several printer suppliers in the hope of finding a product to meet their needs. The Seiko Instruments APU-9000 thermal printer was the only solution to satisfy all of Triton's specifications and tests.

Surpassing Expectations

Triton's product line emphasizes ease of installation and service, and these features were key to their decision in choosing a printer for the FT7000. For financial institutions with large numbers of ATM terminals deployed in distributed networks, a machine out of service means lost transaction revenue and unhappy customers. A 4-hour service window for ATMs is typical in the banking industry. The Seiko Instruments APU-9000 allows a technician to install a printer in less than a minute. This gives the FT7000 a compelling advantage, and reinforces Triton's message that the FT7000 does not need a specialist technician to install or maintain the ATM.

Transaction time is an important factor in the quality of experience for ATM users. Minimizing wait time significantly improves customer satisfaction and limits security concerns for those using an ATM at night or in high crime neighborhoods.

The Seiko Instruments printer surpassed Triton's performance expectations, delivering 8 per second print speed, without compromising the need for a very large 10 diameter paper roll. To enable printing at high speeds with a large roll, the APU-9000 printer uses an integrated braking mechanism, preventing paper roll momentum from causing jams or wrinkled and illegible output.

For Triton, Seiko Instruments' ability to deliver a line-replaceable printer was the icing on the cake. With short lead times for ATM delivery, build time is critical. The APU-9000 simply slides into the FT7000 ATM chassis, with a single, spring-loaded retaining clip to hold it in place. This simplified install process cut 10 to 15 minutes from the manufacturing time of each FT7000, shaving 2 percent off total build process time.

Seiko Instruments CAP9000 Platform

Seiko Instruments is a globally recognized leader in thermal printer technology, with a 25-year track record of supplying best-of-breed thermal printing solutions to leading manufacturers, system integrators, and resellers. This depth of experience has enabled Seiko Instruments to address the most demanding performance and integration needs.

The CAP9000 thermal printer mechanism sets the standard for durability, reliability, performance, and ease of integration. Designed for indoor and outdoor use, the CAP9000 is capable of sustaining a wide range of environmental



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**Bob Douglas
Director of Engineering, Triton**

abuse, while continuing to meet the most stringent performance requirements. With 2 , 3 , and 4 print width alternatives, the CAP9000 forms the flagship platform for a complete line of highly reliable APU-9000 direct thermal printers, designed for the most demanding self-service applications.

Printer Vendor of Choice

With over 20 years experience in the ATM industry, Triton has had the opportunity to test printing solutions from many different manufacturers. For the past eight years, Triton has been using thermal printers from Seiko Instruments in many of their ATM solutions. Sourcing a printer for the new FT7000 ATM reaffirmed the relationship between the two companies, and confirmed that Seiko Instruments is Triton's printer vendor of choice.

To find out more about Seiko Instruments thermal printers visit Seiko Instruments Inc. on the web at www.siiprinters.com or call Seiko Instruments at 1-877-905-2291 for a hands-on demonstration of our printer technology.



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