

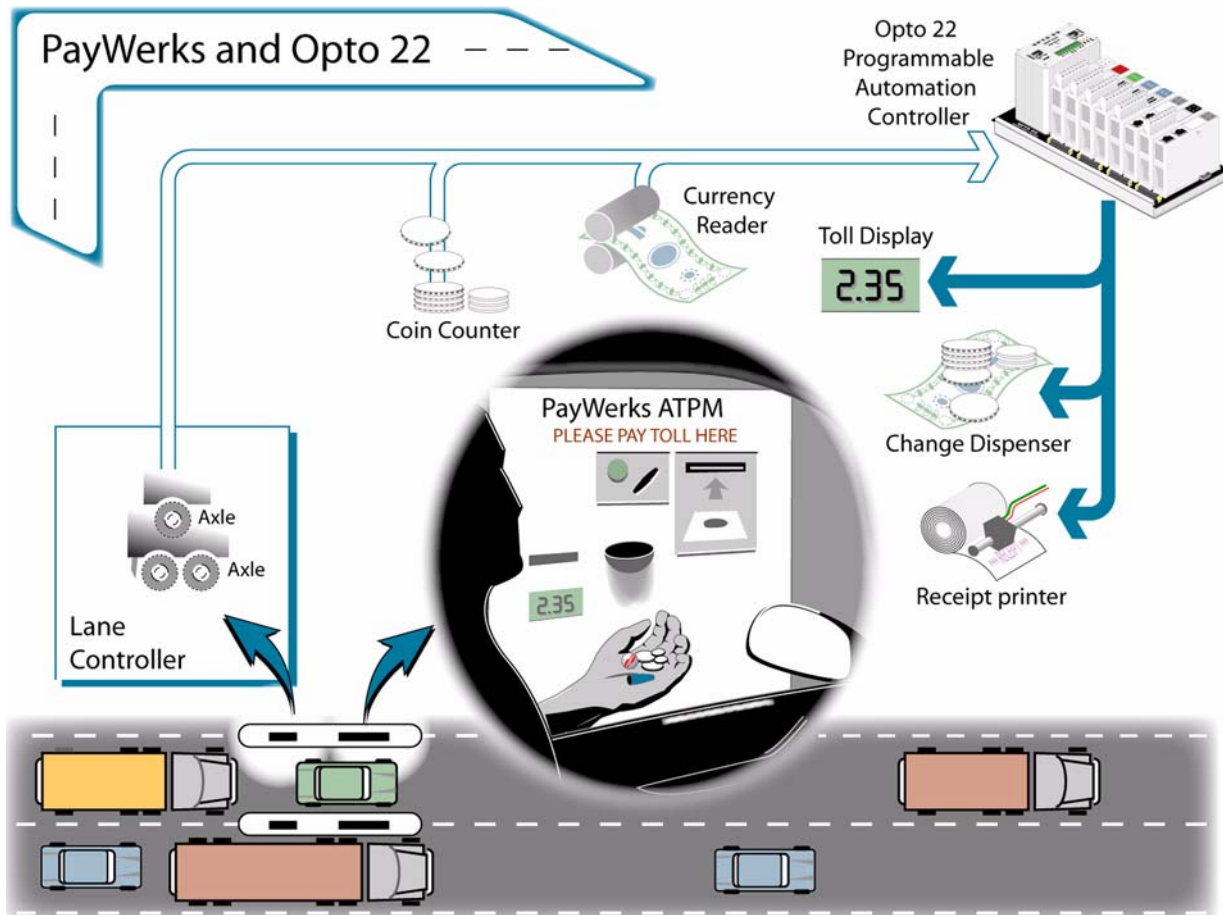
Case Study: PayWerks, Inc.

Original Equipment Manufacturer PayWerks Uses Opto22 PACs for Toll Payment Machines

PayWerks, Inc. is the manufacturer of the Advanced Toll Payment Machine (ATPM), an outdoor payment kiosk for the toll road industry that allows cash-paying toll road customers to conveniently pay the cost of the toll—using paper currency, coin, or a combination of both—and receive change from the amount deposited. The ATPM accepts cash and coin at two height levels (referred to tongue-in-cheekly as “Miata” and “SUV”) and can also print a transaction receipt. PayWerks has embedded Opto 22 programmable automation controllers as the key component in these ATPMs.

Built-in Intelligence

Opto 22 PAC controllers provide the intelligence that enables the ATPM to know the amount of the customer’s toll and also gives them the ability to pay it. The controller connects to infrared lane sensors, which identify the class of vehicle—single-, double-, or multi-axle. The sensors then communicate with the controller, transmitting the data via a standard serial connection to SNAP input modules that work with the PAC.



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"The Opto hardware's intelligence and programmability allows it to parse the message string from the lane controller and interface with the ATPM's cash acceptor, coin acceptor, coin dispenser and other components, to ensure that correct tolls are applied, payment is received, correct change is dispensed, and receipts (if desired) are issued," says PayWerks President Bill Foster.

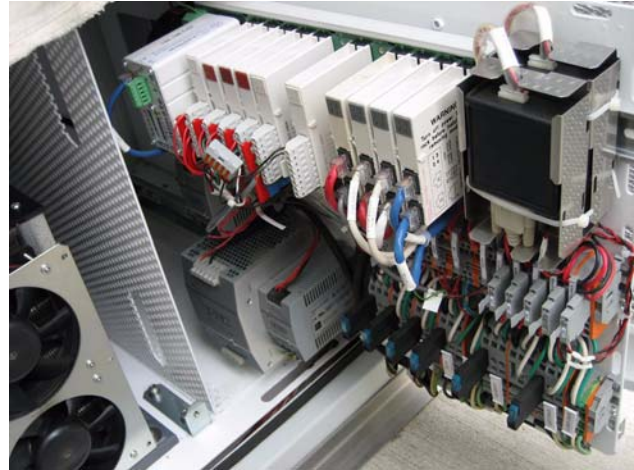
In many cases, a human toll booth worker would receive this information from the sensors and then confirm the vehicle type and appropriate cost. But according to Foster, many of his customers (toll road operators) lose money if they have their toll booths manned 24 hours a day. Using ATPMs greatly aids these customers by letting them reduce man hours without sacrificing service, with significant cost savings as a result.



Advanced Toll Payment Machine (ATPM)

The fact that Opto 22 PACS are built on open technologies and can communicate using a number of communication protocols was an important consideration for PayWerks in selecting which hardware to embed in the ATPM. The company knew it needed a device that could interface with existing sensors, receipt printers, and assorted ATPM system components via RS-232 serial connections.

"We had to have unlimited serial communication to all these different components and the Opto products' modularity gave us the ability to add as many serial connections as we needed for the ATPM."



Opto 22 equipment inside ATPM

Looking Ahead

PayWerks is the only U.S. company of its type that offers an integrated system that provides all of the described toll collection and change providing features. In addition to California's Transportation Corridor Agency (which operates most of the toll roads in Orange County) PayWerks has sold and deployed ATPMs in the states of Ohio and Michigan.

"These customers represent some of the premiere toll agencies in the country, all of whom pride themselves on implementing the latest technologies in their toll road design," says Foster. "With the success we've had with the ATPM in the toll road industry, we are now seeking additional vertical markets where we can take our expertise in developing ruggedized outdoor payment machines."

In this regard, Foster is specifically pleased with the Opto 22 hardware's reliability and toughness in the face of vibration, dust, and extreme temperature changes. PayWerks is thus sold on continuing with Opto 22 PACs as the control platform for any new payment machines or kiosks that might be developed for those other industries.

For more information on PayWerks and any of the company's offerings and capabilities for traffic management, go to <http://www.PayWerksInc.com/>.