



Application Note
Portwell, Inc.

When Technology Meets Trash Haulers Portwell's PCS-8277

Fan-less dual-core PC-based telematics system for garbage truck operation

Situation

Trash processing is an important task for keeping our environment neat and clean. Several factors, such as process efficiency, cost containment and customer satisfaction can affect the success of any waste recycling business. Since trash truck operation plays a key role to this task, the effectiveness of garbage truck fleet management, therefore, is vital to every waste recycling business.

Traditionally, trash truck operation relies on generating paper and using the driver's record book for communications between the fleet managers and the hauler drivers. Daily printing of all the record sheets has been a formidable task. The operation data are manually recorded by the truck driver, then collected by the fleet managers when haulers return to the service hub. This adds even more tasks to the fleet manager's already punishing workload. For example:

- Interpreting and processing handwritten notes and the paperwork this generates
- Customer Service Records cannot be monitored and filed in a timely fashion
- The extra work generating when a truck out of action results in rushed planning
- Incidents that cause rushed planning often result in overtime and excessive fuel waste
- An incomplete picture of the reasons behind skipped pickups
- Infrequent and manual route audits

Looking to Extend the Network

A nationwide fleet management system company that spotted these issues implemented a total solution based on sophisticated trash truck management software. However, while a simple x86-based telematics client PC could execute these functions, they soon realized that the features required for this client device are mission critical.

The environment in which trash haulers operate is definitely not a pleasant one either locally or nationwide. They must operate in the scorching heat of a Las Vegas summer or the bitter cold of a Minnesota winter. Moreover, in the wet and constantly rainy northwest states, protection against water is an absolute necessity.



When taking these critical requirements into consideration, Portwell determined that the best solution to these challenges lay in its robust and fan-less PCS-8277 telematics PC system.

Portwell's PCS-8277 system solution leverages an x86-based platform that bundles with real-time fleet management software installed in the trash hauler's cabin. It collects operation route, service status, captured images and RFID data, then transmits it to a data server via cellular network. Fleet managers can monitor the haulers' operation from any PC that is linked to the SQL data server in real time. Data analysis and operation optimization tasks are automatically performed via this sophisticated software.



Maximum performance with low power

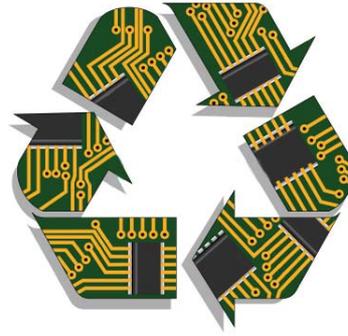
Portwell's PCS-8277 utilizes the dual-core AMD G-T56N processor supporting a fast 1.8GHz clock speed yet with only a cool 18W of thermal power. In addition, the 32-bit Microsoft® Windows® Operating System is a great plus. It runs multiple real-time programs that RISC based platform hard to achieve and greatly saves the efforts in developing the application software.

PCS-8277 comes with 4 DI and 2 DO, which makes the configuration much easier without installing additional I/O module. Not only does solution cut costs, its design takes up a much smaller space and even simplifies the wiring inside the truck's cabin. Optional IP65 protection housing is another attractive feature. With its water and dust proof features, the fleet manager will no longer worry about the driver hanging a wet raincoat inside the truck cabin.

Instant availability; higher operation efficiency

In the past, the annual report submitted to the jurisdictions could take months to complete. Today, with Portwell's PCS-8277 powered state-of-the-art truck fleet management system, this task is much simpler. Most of the core data are collected automatically. Fleet managers, therefore, can manage more trucks without spending extra efforts at planning routes or calculating payrolls. Information for operation routes can be generated and captured in seconds, not minutes or hours.

The PCS-8277 system solution can provide both cellular, and Wi-Fi communications by incorporating optional cellular and Wi-Fi modules. When a cellular modem is activated, vehicles on the road can exchange data instantly without returning to the service hub for paper generated work instructions. Wi-Fi function is a plus when doing big volume data exchanging. At the end of a hard day's work, the massive data generated during the operation can be moved to the management server via Wi-Fi. This design greatly saves both client units' disk space, and cellular data volume.



Customer satisfaction

Aided by Portwell's PCS-8277 telematics system, fleet managers can use the same resources to serve more customers. It significantly increases the truck fleet productivity, consumes less fuel, and lowers the overtime work loading. In return, the fleet owner gains higher profit margin with the same resources. All our customers using this PCS-8277-based solution expressed surprised by these benefits this technology brought them:

- Efficient driver management
- Accurate and fast operation report
- Easy to produce route planning with best optimization
- Quick response to customer claims
- Clear object with easy instruction for drivers to execute
- Infrequent and manual route audits
- Cost saving by eliminating unnecessary resource wasted

PCS-8277: An Overview



PCS-8277, a revolutionary telematics system with powerful dual-core AMD G-T56N processor, features a Radeon HD 6310 graphics engine, fan-less design, and wireless communication support (3.5G, WLAN, GPS and Bluetooth). Its compact housing with flexible expansion design makes it an ideal platform for in-vehicle PC based telematics device.

PCS-8277 is designed for applications such as in-vehicle signage, in-bus and on-the-train surveillance systems, and fleet remote management.

More product details for Portwell's PCS-8277 are available at <http://www.portwell.com/products/detail.asp?CUSTCHAR1=PCS-8277>

About American Portwell Technology

American Portwell Technology, Inc., is a world-leading innovator in the Industrial and Embedded Computing market and a Premier member of the Intel® Intelligent Systems Alliance. American Portwell Technology designs, manufactures and markets a complete range of telematics solutions, embedded computer boards and systems, and rackmount systems for both OEMs and ODMs. American Portwell is an ISO 9001:2008, ISO 13485:2003 and ISO 14001:2004 certified company.