

Mitsubishi Electric Asia Switches On RFID

The Singapore-based manufacturer is using passive UHF tags to track the power inverters it makes, and plans to expand the system to manage its inventory of other products.

By Beth Bacheldor

Sept. 11, 2006—Industrial and electronics products manufacturer [Mitsubishi Electric Asia](#) is implementing an RFID system to track and manage inventory in real time. This new system replaces a more laborious and inefficient manual operation.

Based in Singapore, the company began considering RFID shortly after its executives requested a team of employees in the factory-automation and industrial department begin using bar codes to improve the tracking and tracing of its inventory. "Management came across RFID—which was, by then, the latest technology in the market—hence, they recommended the team study and explore how RFID can better improve warehouse efficiency," says a Mitsubishi Electric spokesperson.

The manufacturer is working with [TCM RFID](#), an RFID systems provider with offices in Singapore and other Southeast Asian countries. Mitsubishi is using TCM's RFID Inventory Tracking System (RITS) so its operations, accounting and warehouse employees can more easily document incoming and outgoing inventory. The system is developed on the [Microsoft .Net](#) platform and Microsoft SQL Server database. RITS supports Mitsubishi Electric's first-in-first-out method of handling inventory, which dictates that inventory manufactured first be sold first.

Currently, Mitsubishi Electric is tagging inverters—electrical power converters—with [Alien Technology](#) EPC Class 1 Squiggle RFID labels, which operate at 915 MHz. Mitsubishi Electric's factory-automation division also makes other products, such as programmable controllers. The company's other divisions manufacture air conditioners, refrigerators, projectors, digital video recorders and more, though none of those products are currently being tagged.

The inverters are tagged upon receipt at Mitsubishi Electric's warehouse. Employees carry [Symbol Technology](#) MC9000-G RFID mobile computers that have been equipped to read both bar codes and RFID labels. The mobile devices are wirelessly linked and synchronized with the RITS server, which exchanges shipping and receivables data with Mitsubishi's back-end manufacturing and warehouse system. The employees use the device to scan the bar-coded label on the box of each inverter and correlate the bar code with the receivables data already stored in the system.

Once validation is complete, the workers encode and affix the RFID labels to the boxes and read the labels' embedded tags. The tag passes the information to the RITS server, which updates the inventory data in the back-end systems. Later, when the company sells and ships out inverters to customers, the workers read the RFID labels to ensure the right goods have been picked and packed by comparing each label with shipping and order data retrieved wirelessly from the RITS server. After confirming validation, the system updates the shipping information for that particular order as it is shipped out.

TCM, founded in 2003, designed RITS so that companies like Mitsubishi Electric can erase the tags when orders are filled and shipped out, then reuse them on new inventory as it arrives. TCM also makes several other RFID-based products, including Intelli-Shelf, which is used by [Intermech Machinery](#) (see [Intermech Uses RFID to Slash Inventory and Manufacturing Costs](#)).

Mitsubishi Electric began installing RITS in mid-August. "RFID has helped to increase inventory and shipping accuracy, since before, we used to do it all with visual and manual checks," the company spokesperson says, adding, "Also, the information can be automatically updated into our [back-end] applications." The firm plans to expand RITS to all its divisions in Singapore, as well as other overseas offices.

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