



Merchandise Auto Identification Application

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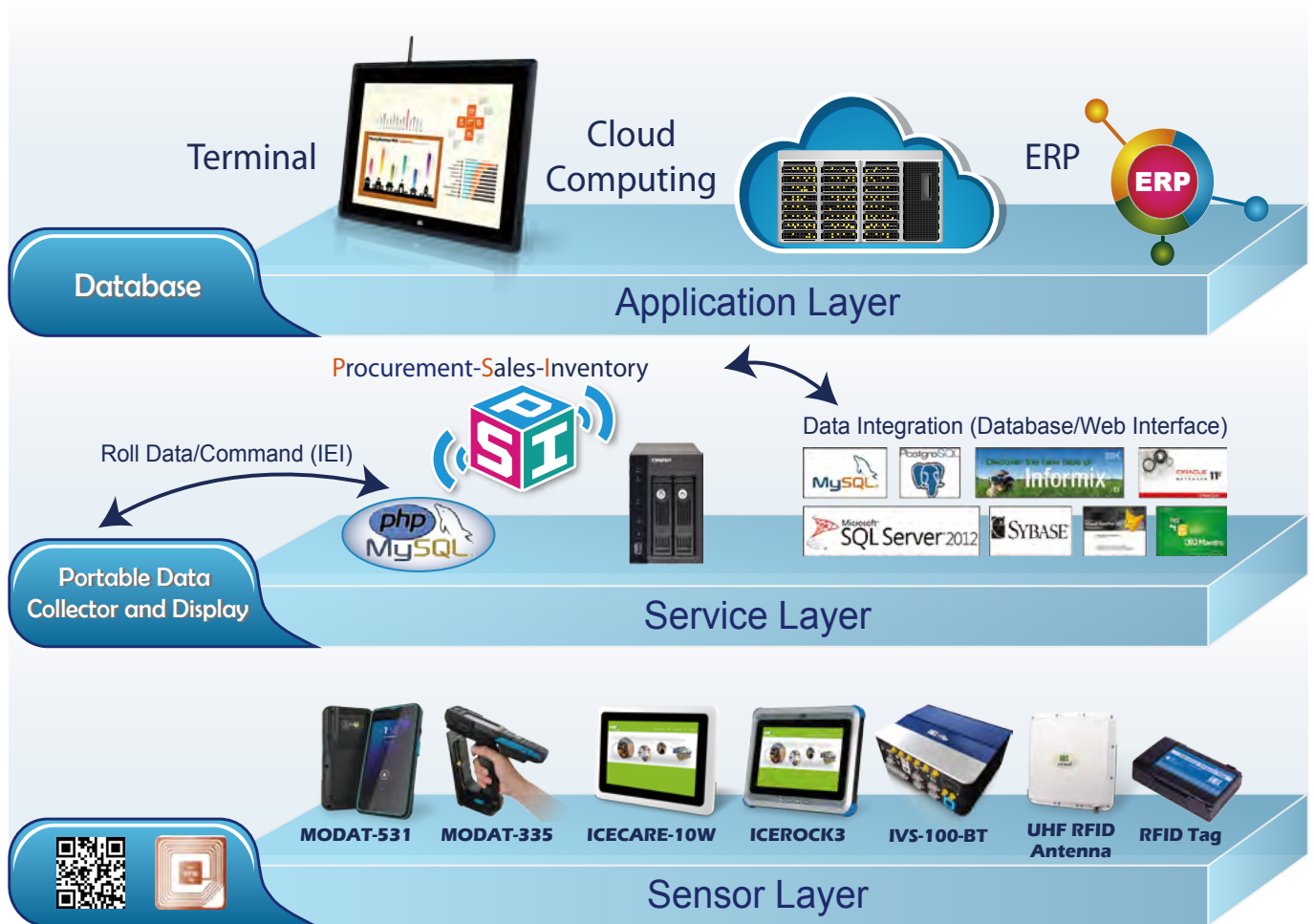
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A **Advanced Merchandise Management System**

When we talk about PSI (Procurement Sales Inventory), we have to introduce the Internet of Things (IoT). IoT consists of sensors, devices, and facilities which include intelligent sensors, mobile devices, home automation systems or NVR systems. Thus, PSI system combines IEI tablet PC, PDA and PSI software with QNAP NAS to detect RFID tags and send the product information to database through wireless technology.

- PSI is a freeware on QNAP NAS
- PSI can be downloaded from QNAP's APP center.
- PSI contains a simple user interface to access database and IoT device.
- PSI contains a simple Procurement – Sales – Inventory system, which can be used for small systems.
- PSI supports barcode or RFID for managing inventory



B Merchandise Monitor System Supports Industry Standards

The UHF RFID reader in the Merchandise Monitor system is fully support ISO18000-6C EPC Gen2 and ISO18000-6A, B compatibility in direct mode. Why support these standards is so important? When your factory adopts the RFID monitor system, you can use HF or UHF RFID reader to read tags, and store product information in the database. Once the order is placed by a customer, the product information can be sent to the customer. When the product is delivered to the customer, products with the same tags can be sorted and organized by using the RFID devices.

C UHF vs. HF: Meeting Business Requirements

The range of the RFID tags depends on their frequency. This frequency determines the resistance to interference and other performance attributes. The use of RFID tag depends on the application; different frequencies are used on different RFID tags.

- Ultra High Frequency (UHF) works within a range of 860 MHz–930 MHz. It can identify large numbers of tags at one time with quick multiple read rate at a given time. So, it has a considerable good reading speed. UHF has the limitation when being applied on wet surface and near metal. However, the IVS-100 with UHF RFID antenna provides excellent reading range up to 12 meters, and the MODAT-335-UHF reading range is up to 5 meters.

- High Frequency (HF) works on 13.56MHz and has less than one meter reading range, plus it is inexpensive and useful for access control, items identifications on sales points as it can be implanted inside thin objects such as paper.



PDA Reads the UHF tag



HF/NFC Reader to read information from tags

D Applications

1. Retail store stock management

Process:

The retail chain store uses barcode reader to check inventory quantity after purchasing and shipping, and compares it with database. The headquarters requires all stores to do inventory check once a month to make sure the quantity of inventory is consistent with the database.

Status:

The retail chain store needs to do inventory check every month, and needs six employees to finish inventory check for 15,000 units within three days. The problem is that the employees make mistake all the time, and usually need to start over again. This situation makes them to take four or five days to finish inventory check. It is wasting not only time, but also human resource.

Solution:

With the PSI system, the retail chain store adopts UHF tag as price label. The headquarters uploads shipment list to database. When the shipment is delivered to the retail store, the UHF RFID reader will scan the UHF tag and check the total quantity. Besides, when doing inventory check, only two employees are needed to operate the MODAT-335-UHF reader to scan shelves, and it only takes few hours to finish this job. Consequently, adopting the PSI system is not only saving time, but also saving human effort.



2. Paint Baking Management for Burl Walnut Wood Trim:



Process:

This factory uses manual operation to move the burl walnut wood trim from the paint baking room to the waiting room. The staff writes down date and time on the pallet, and waits for 48 hours to move the pallet to the next procedure.

Status:

The quality is unstable or failed because the staff usually moves the wrong pallet to the next procedure.

Solution:

To solve this issue is very easy; the only thing to do is to install the PSI system. When the burl walnut wood trim is moved from the paint baking room to the waiting room, stick a UHF tag on that pallet, and the PSI system will start to count down for 48 hours. When the time is up, the alarm is going to notify the staff to move the pallet. The staff will take the MODAT-335-UHF to scan the UHF tag to double check the pallet is the one that needs to be removed to the next procedure. Adopting PSI system not only saves human resource, also controls the time to prevent human mistakes.



E Summary

In summary, using Merchandise Monitor system with RFID technology can gain the following value:

- RFID helps locate assets
- RFID improves staff utilization
- RFID enables access control to improve security
- RFID helps monitor product location
- RFID prevents running out of stock

For many reasons, Merchandise Monitor system is the right choice for enterprises to use in any suitable applications.

Selection Guide



	Industrial PDA	Tablet PC	Tablet PC	UHF Reader	NAS	Panel PC
Model	TS-253 Pro	ICECARE-10W	ICEROCK3	IVS-100 W/ Antenna	TS-253 Pro	IOVU Series
LCD Size	3.5"	10"	10"			7" ~ 17"
Processor	Marvell® PXA 310 624MHz	Intel® Celeron® 1047UE	Intel® Celeron® 1047UE	Intel® Atom E3826 1.46GHz	X86-based	Freescale Cortex A9 QC 1GHz