

# MODAT-328

## Stocktaking PDA

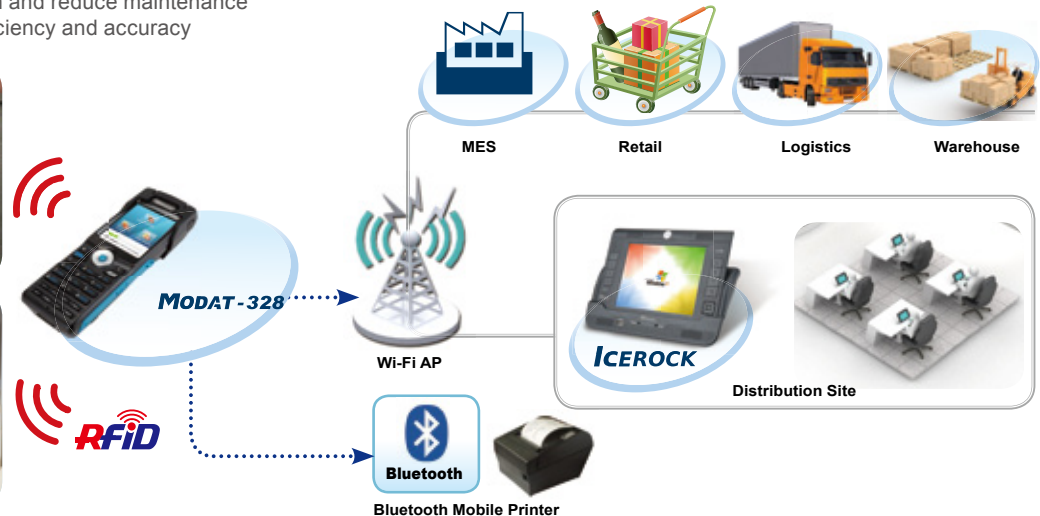
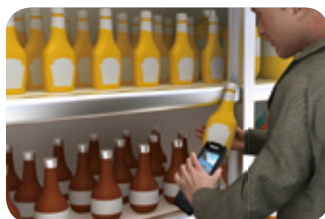
- 2.8" TFT LCD with touch screen
- Marvell PXA 310 624 MHz CPU
- Windows Mobile 6.5 embedded
- Wi-Fi and Bluetooth wireless technology
- 3 megapixel camera with LED flash
- ISO 15693/ISO 14443A/B HF RFID reader
- 1D/2D barcode reader
- Optional cradle with RS-232 and USB client port



## Benefits

Designed to be an integral part of the warehousing management solution, the MODAT-328 is an all-functional stocktaking PDA with the Marvell PXA310 CPU and Microsoft Windows Mobile 6.5 operating system. It is a light-weight, ergonomic mobile terminal equipped with advanced data acquisition technologies: RFID, 1D/2D barcode reader, and 3 megapixel CMOS camera. Via built-in 802.11b/g Wi-Fi and Bluetooth wireless modules, the MODAT-328 allows quick and easy connection to other peripherals. Your mobile workforce is empowered with the ability to track and report real-time inventory levels and movements, reducing chances for delays, shortages and uncertainties. With the MODAT-328, it's never been easier for businesses to remote-control warehouse and distribution center operations. On the manufacturing floor, up on the loading dock or out in the yard, the MODAT-328's ultra-rigged design offers reliable performance under harsh environment.

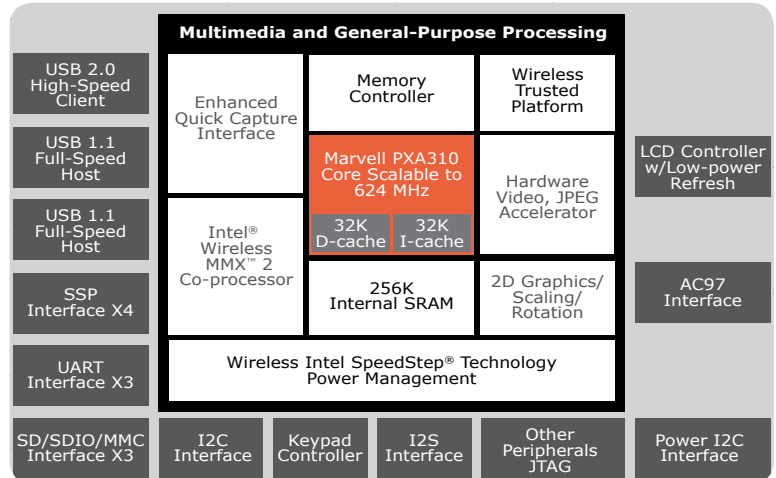
- Accurate and real-time inventory data
- Inventory visibility and better forecasting and accuracy enabling a reduction in safety stocking levels
- Reduction in misplaced goods and elimination of sales lost due to out of stocks
- Increase accuracy and reduced labor costs in receiving, put-away and shipping operations
- Reduce labor requirements for backroom functions such as physical inventory counting, receiving, and locating specific items
- Reduce losses and shrinkage of assets, also theft prevention
- Correct item name identification and reduce maintenance
- Increase distribution center efficiency and accuracy



# High Performance and Low Power Consumption Platform

## Marvell® PXA 310

Built on a low-power 90nm process technology, the Marvell PXA 310 is a cost-effective, power-efficient solution with up to 624 MHz computing performance. In addition to hardware video acceleration, DRM security and video/audio playback, it combines low-power modes with on-demand adjustment of voltage and frequency to support exceptional battery life in standby modes.



## Built-in Windows® Mobile 6.5

Windows® Mobile (WM) is a compact mobile operating system developed by Microsoft®, and designed for use in smart phones and mobile devices. IEIMobile Enterprise PDA series adopts Windows Mobile 6.5 to meet the demands of your mobile workforce.

### Built-in Applications

- Optional Windows® Mobile 6.5 Office
- Optional Microsoft® SQL Server Mobile Edition is compliant with the industrial leading standard DBMS and is compatible with desktop PC or back-end ERP system. It saves time and effort of building a new ERP system..



### Windows® Mobile Application Development

- Official IDE
- Managed Code
- Native Code

## Seamless Wireless Communication

Real-time data can be delivered and accessed using MODAT-328's built-in 802.11 b/g wireless LAN module to connect to wireless local area network (WLAN). Nowadays, efficient and streamlined work-flow is where most businesses look to reduce cost and improve competitiveness. With the seamless wireless connection, you can greatly enhance stock management system. The MODAT-328 also comes with Bluetooth 2.1 +EDR, offering a fast and easy way to connect and synchronize all the peripherals, such as printers and headsets.

Eg. Warehouse workers use wireless LANs to exchange information with central database server and increase their productivity.



### Local-Area Communication

MODAT-328 gives you up to broadband-speed browsing and connectivity, compared to traditional wired LAN. It is best-suited for near field or ad-hoc data communications.

- Compliant with IEEE 802.11b/g
- Auto fallback optimal data rate
- Security : WPA/WPA2, 802.11i AES /CCMP, WEP with TKIP
- Hardware signaling BT/Wi-Fi co-existence supported



### Peripheral Communication

- Compliant with Bluetooth specification V1.2.
- Profile : SPP, HFP, HSP
- Up to 1Mbps data transfer rate and 10M distance

# Advanced Data Acquisition Technology

The MODAT-328 is a multi-modal device that supports 1D and 2D barcode scanning, RFID and imaging. RFID technology is capable of "simultaneous identification," capturing data from multiple tags within specific range all at the same time. In addition to RFID, the MODAT-328 has a built-in barcode scanning capability and a 3 megapixel camera with high power LED flashlight. The MODAT-328 is an ideal transaction-based stocktaking PDA.

## Built-in 13.56 MHz RFID Reader

Supports ISO 14443A ISO 14443B and ISO 15693 or ISO 14443A ISO 14443B and ISO 18092

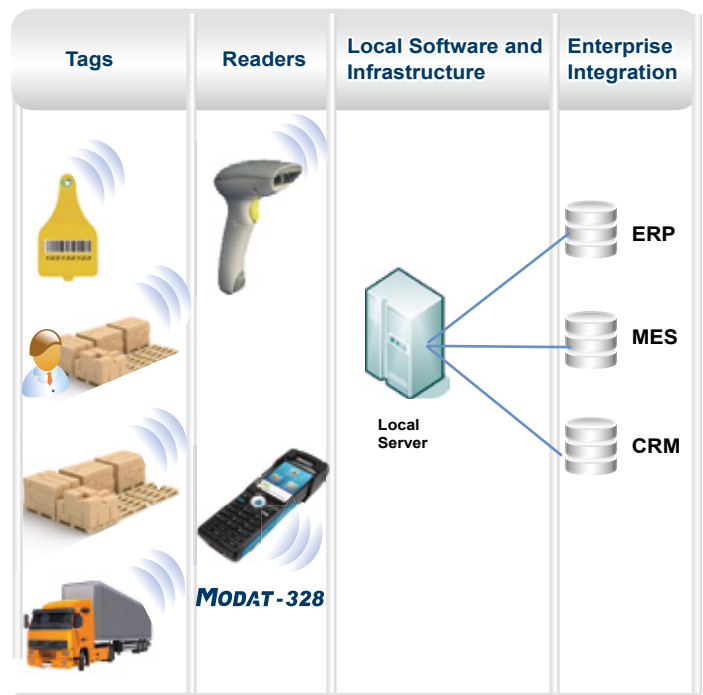
Combined with mobile computing and Web technology, RFID technology provides a way for organizations to identify and manage their assets in real-time.

The MODAT-328 integrated with RFID readers delivers a complete set of tools that eliminates paperwork, and gives proof of identification and attendance. Manual data entry becomes a thing of the past. Its RFID reader module supports standard ISO 14443A ISO 14443B and ISO 15693(smart label) or ISO 14443A ISO 14443B and ISO 18092(Felica)



RFID Mode Selections						Remarks
Iso_4	Iso_3	Iso_2	Iso_1	Iso_0	Protocol	Remarks
0	0	0	0	0	ISO 15693 low bit rate, 6.62kbps, one sub-carrier, 1 out of 4	
0	0	0	0	1	ISO 15693 low bit rate, 6.62kbps, one sub-carrier, 1 out of 256	
0	0	0	1	0	ISO 15693 high bit rate, 26.48kbps, one sub-carrier, 1 out of 4	Default for RFID IC
0	0	0	1	1	ISO 15693 high bit rate, 26.48kbps, one sub-carrier, 1 out of 256	
0	0	1	0	0	ISO 15693 low bit rate, 6.67kbp, double sub-carrier, 1 out of 4	
0	0	1	0	1	ISO 15693 low bit rate, 6.67kbp, double sub-carrier, 1 out of 256	
0	0	1	1	0	ISO 15693 high bit rate, 26.69kbps, double sub-carrier, 1 out of 4	
0	0	1	1	1	ISO 15693 high bit rate, 26.69kbps, double sub-carrier, 1 out of 256	
0	1	0	0	0	ISO 14443A bit rate, 106kbps	RX bit rate when TX rate different than RX rate(reg03)
0	1	0	0	1	ISO 14443A high bit rate, 212kbps	
0	1	0	1	0	ISO 14443A high bit rate, 424kbps	
0	1	0	1	1	ISO 14443A high bit rate, 848kbps	
0	1	1	0	0	ISO 14443B bit rate, 106kbps	RX bit rate when TX rate different than RX rate(reg03)
0	1	1	0	1	ISO 14443B high bit rate, 212kbps	
0	1	1	1	0	ISO 14443B high bit rate, 424kbps	
0	1	1	1	1	ISO 14443B high bit rate, 848kbps	
1	0	0	1	1	Tag-it	
1	0	1	0	0	HF EPC 64/96 bits	

## Item-by-item Inventory Control



## 1D/2D Barcode Reader

MODAT-328's built-in barcode scanner can integrate with warehouse management software, providing rapid gains in storage efficiency. The MODAT-328 can quickly collect the data and build an inventory database. Through the warehouse management system, managers or administrators can calculate how much space is needed and where to put these items. Based on storage rules the customer needs and formulas designed to store inventory with maximum efficiency, the MODAT-328 can provide very detailed up-to-date information on key aspects of the business, enabling decisions to be made much more quickly and with more confidence. For example: fast-selling items can be identified quickly and automatically reordered to meet consumer demand, preventing a build-up of unwanted stock.

### 1D and 2D application

1D barcode is common in most household products and 2D barcode is common in industrial products that more information is needed to be stored in the label.



2D barcode



1D barcode



### 3 Megapixel CMOS Camera

#### Features

The module features CMOS sensor and 2064V x 1552H resolution.

- Superior low-light performance , ultra low-power, low-cost sensor
- Integrated real-time JPEG encoder
- Flexible support for external auto focus, optical zoom, and mechanical shutter



Item	Specifications
Array Size	2048 x 1536 pixels (QXGA)
Input Clock Frequency	6-54 MHz
Maximum Frame Rate	15 fps at full resolution (JPEG), 30 fps in preview mode

### Stylish and Ergonomic Design

Brings a stylish and lightweight ergonomic look to the handheld mobile device, the MODAT-328 offers a comfortable grip and ultra portability with a petite size at 190 x 136 x 115mm while ensuring single-handed scanning service.

#### LED Indicators & HOT Keys

- Provides 2.8" QVGA touch screen and simple user interface . It allows user to have easy access to all the relevant information and applications.
- Shockproof, dustproof, and waterproof in compliance with IP54.
- The ergonomic and professional keypad is made of wear-resistant PET+SUS and is easy to operate.



#### I/O Interface

##### ● MicroSD

- Users can install applications in the MODAT-328 by using:
- Microsoft® ActiveSync lets you transfer files, synchronize files, remotely debug, and perform other device management activities. ActiveSync is a free application available from the Microsoft® web site
  - MicroSD card

##### ● Mini USB (OTG)

- Expand the storage capacity and peripheral devices.

##### ● 16-pin Connector

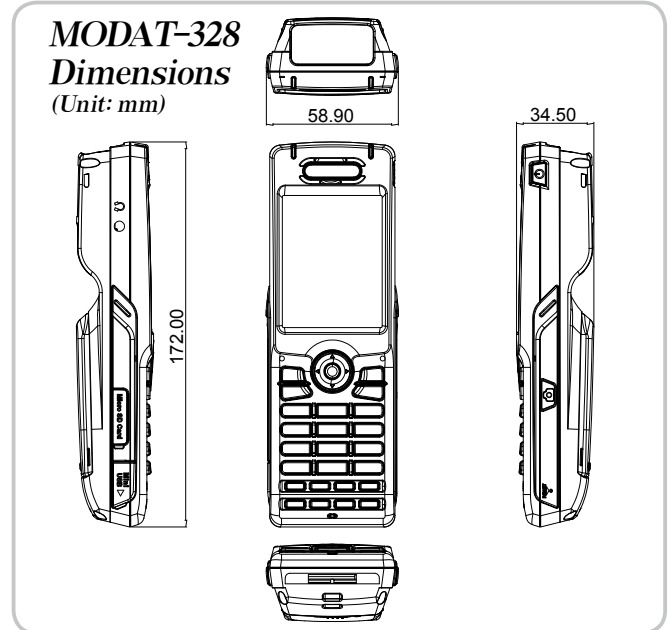
16-pin connect cable





## Specifications

Model	MODAT-328	
Display	LCD Size	2.8" TFT LCD
	Brightness (cd/m <sup>2</sup> )	240 cd/m <sup>2</sup>
	Max Resolution	240(H) x 320(V) QVGA
	Viewing Angle	70/50/70/70 Deg.
	Touch Screen	4-wire resistive type touch
System	CPU	Marvell® PXA 310 624MHz
	Operating System	Microsoft® Windows® Mobile 6.5
	Memory	256MB Flash + 128 MB SDRAM
	Storage	MicroSD Slot
Communication	Wi-Fi	Wi-Fi® 802.11 b/g
	Bluetooth	Bluetooth® 2.1 + EDR
Data Collection	RFID	13.56 MHz RFID reader support ISO15693 and 14443A/B compliant or ISO 14443A and Felica compliant
	Barcode	1D/2D Imager Scan Engine
	Camera	3 Megapixel CMOS camera with LED flashlight
Indicators & Buttons	LED Indicators	Charging status LED Wi-Fi / enable/disable LED
	Hot Keys	3 x Barcode key 1 x Camera key
I/O Interface	Audio	1 x Headset Built-in Mic-in
	Expansion	1 x Mini USB(OTG)
Power	Power Adapter	Input: 100 V AC to 240 V AC ~ 50-60Hz 0.2A Output: 5 V/1A
	Battery	3.7V 1880 mAh battery
Environment	Operating Temperature	-10°C ~ 50°C
	Storage Temperature	-20°C ~ 60°C
	Humidity	5%~95% non-condensing
	Drop Survival	1.5M
	Environmental Protection	IP 54
Physical Characteristics	Certification	CE, FCC
	Dimensions (LxWxH) (mm)	172 x 55 x 31
	Weight	245 g



## Support Function

Part Number	Wireless	Barcode	RFID
MODAT-328-WB65-En	802.11 b/g	1D/2D Barcode Scanner	support ISO15693 and 14443A/B compliant
MODAT-328-Felica-WB65-En	802.11 b/g	1D/2D Barcode Scanner	ISO 14443A and Felica
MODAT-328-1D-WB65-En	802.11 b/g	1D Barcode Scanner	N/A

## Ordering Information

Part No.	Description
<b>MODAT-328-WB65-En</b>	2.8" TFT-LCD 240 cd/m <sup>2</sup> QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, 802.11 b/g Wireless, Bluetooth, 1D/2D Barcode Scanner, RFID, 3M Pixels Camera, Windows Mobile 6.5 OS, RoHs
<b>MODAT-328-Felica-WB65-En</b>	2.8" TFT-LCD 240 cd/m <sup>2</sup> QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, 802.11 b/g Wireless, Bluetooth, 1D/2D Barcode Scanner, RFID support ISO 14443A and Felica, 3M Pixels Camera Windows Mobile 6.5 OS, RoHs
<b>MODAT-328-1D-WB65-En</b>	2.8" TFT-LCD 240 cd/m <sup>2</sup> QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, 802.11 b/g Wireless, Bluetooth, 1D Barcode Scanner, Windows Mobile 6.5 OS, RoHs

## Optional Accessory List

Item	Part No.	Description
Cradle	MODAT-300-CR01-R10	Charging cradle with USB Client
Battery Pack	31603-000015-RS	3.7V 1880 mAh Battery
Battery Pack	31603-000017-RS	3.7V 3000 mAh Battery
Belt Clip Case	7Z000-MODAT-328POUCH-RS	Black, MODAT-328 Professional Belt Clip Case
16-pin Cable	32024-001500-100-RS	Connect to USB Host, USB Client and RS-232

## Packing List

Item	Part No.	Q'ty	Description
Battery Pack	31603-000015-RS	1	3.7V 1880 mAh Battery
Belt Clip Case	7Z000-MODAT-328POUCH-RS	1	Black, MODAT-328 Professional Belt Clip Case
USB Cable	32001-000301-100-RS	1	
AC-DC Adapter	63040-180005-000-RS	1	Input: 100 V AC to 240 V AC ~ 50-60Hz 0.2A Output: 5 V DC, 1 A (Max.)
Headset	7Z000-EMI164001S-RS	1	
Stylus	7Z000-431250003C000RS-RS	1	
Hand Strap	7Z000-MODAT300STRAP-RS	1	
User's Manual CD ROM	7B000-000550-RS	1	

