

MODAT-100

Mobile POS Terminal

- 3.5" TFT sunlight readable LCD touch screen
- Marvell® PXA 310 624 MHz CPU
- Windows® Embedded Handheld 6.5 pre-installed
- Built-in 32-channel GPS Receiver
- Built-in Smart Card Reader, Magnetic Stripe Card Reader and 2" thermal printer
- 1D laser barcode/Optional 2D Imager barcode reader for data collection
- Bluetooth, Wi-Fi and 3.5G/HSDPA wireless communication



Point-of-Service Application

Standard Point-of-Service(POS) features, such as smart card readers, magnetic stripe card readers and thermal printers come integrated for an all-in-one mobile solution. Equipped with 1D laser barcode and 3 megapixels camera, the MODAT-100 can capture data and images via a built-in high performance wireless communication module. The MODAT-100 offers mobility and flexibility that promises to streamline workflow and enhance productivity.

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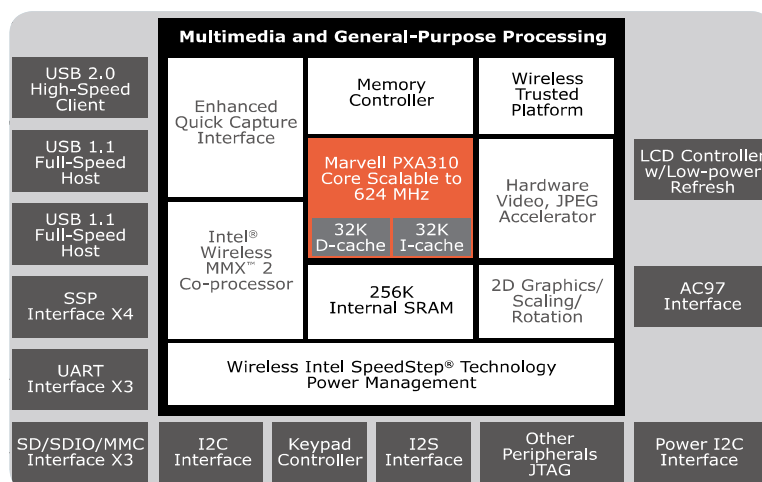
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High Performance Low Power Consumption Platform

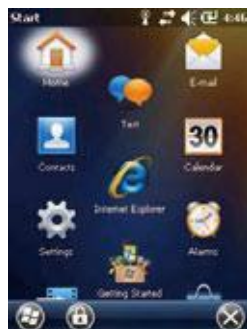
Marvell PXA 310

- Wireless Intel® SpeedStep® technology for MIPS/ mW power efficiency, long battery life
- Hardware security/DRM processing
- Enhanced peripheral speeds and features such as support for camera sensors up to 5 megapixels and Bluetooth v2.0 EDR
- Supports DDR SDRAM for cost-effective memory solutions
- Secure devices from boot-up to corporate network access



Built-in Windows® Embedded Handheld 6.5

- Windows® Embedded Handheld (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® Embedded Handheld 6.5 to meet the needs of your mobile workforce.



Windows® Embedded Handheld Application Development

- **Only One Official IDE**
Microsoft® Visual Studio 2005/2008/2010
- **Managed Code**
Intermediate Language
Just-In-Time (JIT) compilation: Run time translated to machine code (Native Code) by CLR (Common Language Runtime) which comes pre-installed and optimized in each Windows® Embedded Handheld device
.NET Compact Framework
-Visual Basic .NET, Visual C# .NET
-BCL (Base Class Libraries)
- **Native Code**
Machine code
C++
MFC, ATL, WTL, STL



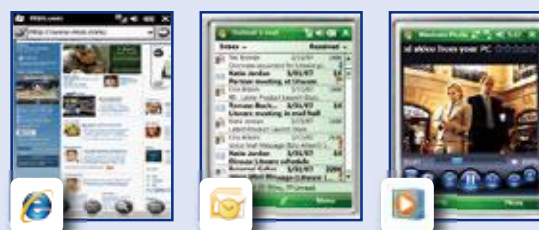
Internet Download

- **Windows Marketplace for Mobile**
(<http://www.windowsmarketplace.com>)



Built-in Application

- Internet Explorer Mobile
- Microsoft® Office Outlook Mobile
- Windows Media Player Mobile



- Optional Microsoft® Office for Mobile is programmable and fully compatible with desktop Windows Office.



Optional Microsoft® SQL Server Mobile Edition is the leading industry standard DBMS and compatible with desktop PCs or back-end ERP systems, which saves you the effort and time of building a new ERP system.



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Rugged Compact Design Suitable for Outdoor Use

The MODAT-100 features a sunlight readable panel for daytime use and an LED backlight for nighttime use. Its rugged design is drop-tested at 1.2 M and IP rated at 54. It can also function in a wide range of temperatures.



Sunlight Readable- 3.5" TFT LCD with LED backlight

- 3.5" diagonal with resolution of 240x320
- 6-bit 262,144 color display capability
- Long life & high brightness LED back-light improved outdoor readability
- Blanview TFT-LCD Resistive touch input



1.2 M Drop Test

- The average height at which people drop handheld products is 1.2 M
- Drop test passed 26 times. Guaranteed sturdy design



Operating Temperature 0°C ~ 50°C

Operate under extreme temperatures, in the warehouse or out in desert.



Storage Temperature -20°C ~ 70°C

Can be stored under extreme temperature conditions



Seamless / Wireless Communication

Out on the field, the MODAT-100 keeps you connected via a built-in 3.5 G modem and a 802.11 b/g wireless LAN module. Empowered by advanced wireless technology, field workers can easily connect with back-offices to verify work orders, transmit field reports and retrieve necessary data and updated information.



MODAT-100

Local-Area Communication



It gives you up to broadband-speed browsing and connectivity, compared to traditional wired LAN. Best 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 1 Mbps data transfer rate and 10 M distance

Wide-Area Mobile Communication

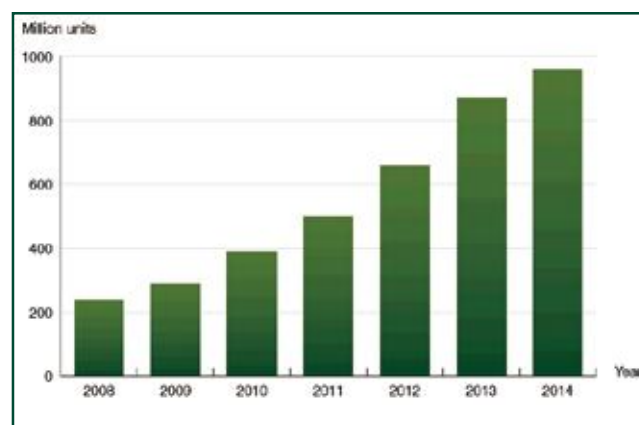


- UMTS/HSDPA: Triple band, 850//1900/2100 MHz
- GSM/GPRS/EDGE: Quad band, 850/900/1800/1900 MHz



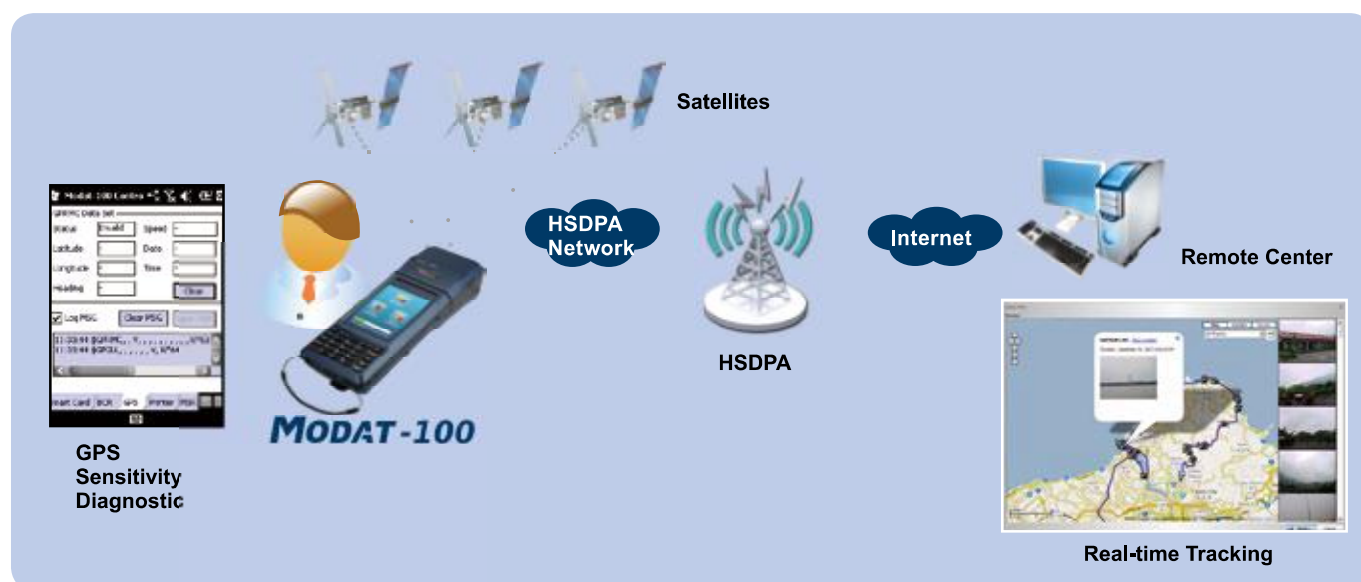
Built-in GPS

GPS technology for handsets has matured, offering much better performance in terms of sensitivity, power consumption, size and price. Sales of GPS-enabled GSM/WCDMA handsets grew to an estimated 150 million units in 2009, up from 78 million devices in 2008. And the forecast for shipments of GPS-enabled GSM/WCDMA/LTE handsets will grow to 770 million units in 2014. Equipped with GPS and GSM/WCDMA features, the MODAT-100 is an ideal industrial mobile electronics devices for Location-Based Services (LBS).



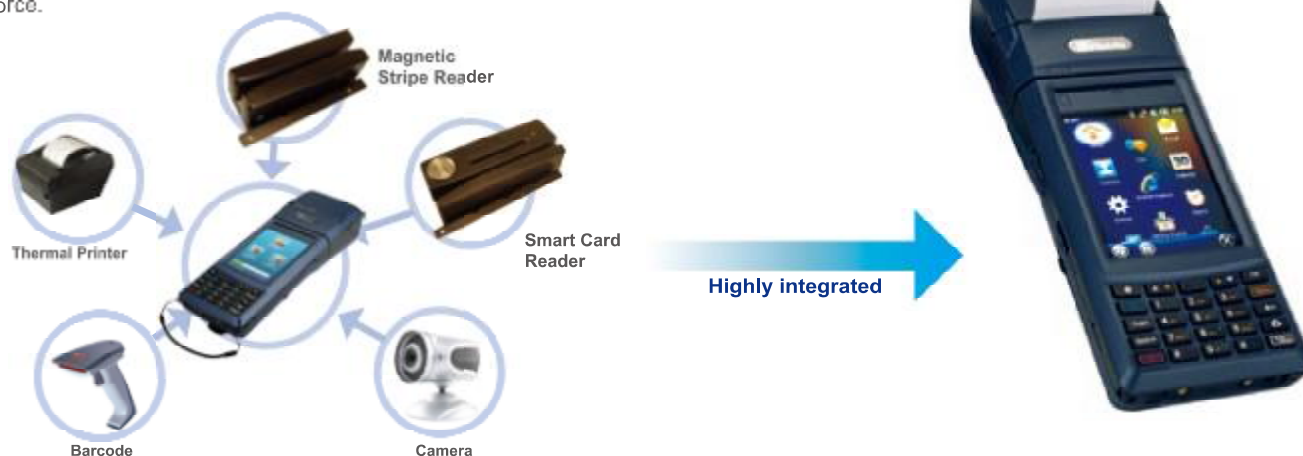
Features

- A 32-channel acquisition engine with over 1 million effective correlators is capable of massive parallel searches
- A-GPS: Supports AssistNow Online and Offline, OMA SUPL compliant Time To First Fix (TTFF): < 1 sec
- Best-in-class acquisition and tracking sensitivity
- GPS Sensitivity Diagnostic Utility



Highly Integrated Mobile Point-Of-Service Design

Most Enterprise PDAs only come with Bluetooth, Wi-Fi or 3G. The MODAT-100 not only has a built-in wireless communication function, it also has integrated peripherals serving as your all-in-one Point-of-Service mobile assistant. The MODAT-100 increases the mobility of your field force.



Hybrid Card Reader



• Smart Card Reader

EMV V4.1 Level 1 Compliant
 Supports ISO 7816 T=0, T=1 Smart Card.
 (Supports commonly used memory card.)
 Card Interface ISO 7816 part 1,2 and 3 Compliant
 Card Interface Communication Speed up to 115200 bps



• Magnetic Stripe Reader

EIA/TIA-232 Compliant
 Card Speed 3 to 60 in/s (7.6 to 152.4 cm/s) Reads single, dual or triple track
 ISO 7811 Conformance (AGC (Automatic Gain Control) – Reads cards from 30% - 200% of ISO 7811 amplitude standard)
 9600 bps, 8 Data Bits, No Parity, 1 Stop Bit

IEIMobile MODAT-100 Utility-SCR and MSR Diagnostic Software

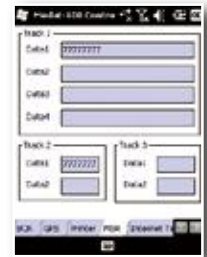
Payment System -**SCR**

SCR diagnostic software allows the user to initiate insert/remove sequences and perform read/write function tests all in one UI screen. During testing, current card reader and processing commands/responses are displayed.



Membership Control -**MSR**

Track 1 and Track 2 data such as credit card holder name, account number of the bank, expiration date or service code can be displayed on the UI screen simultaneously.



Built-in 2" Thermal Printer

• Easy to load

Our original plate removal mechanism improves paper loading and maintenance.

• Ultra compact

The 2-inch model measures 15,5 mm high, 70,3 mm wide, and 33,0 mm deep.

• High speed printing

Prints up to 60 mm/s (480 dot lines/s) using Fujitsu's unique hard-drive control.

• High resolution printing

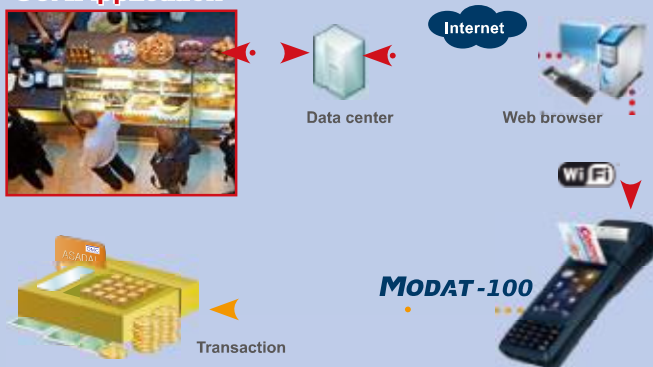
8 dots/mm printing resolution.

IEIMobile MODAT-100 utility

Print and test software included.



SCR Application



MSR Application



Advanced Data Acquisition Technology

The MODAT-100 built-in camera and 1D laser barcode offers the user multiple data collection methods.



3 Megapixels CMOS Camera

Capture images instantly and send data back to the office via HSDPA

Features

- Superior low-light performance
- Ultra low-power, cost effective sensor
- Integrated real-time JPEG encoder
- Flexible support for external auto focus, optical zoom, and mechanical shutter
- Automatic image correction and enhancement

High Power LED Flash Light

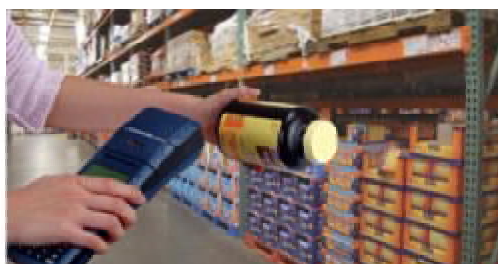
Image is enhanced even under weak light conditions. Great for night patrol and field survey applications.

Features

- Input power: 3 W
- Emitted color: White
- Low power consumption



Motorola 1D Laser or Intermec 2D image Barcode Scanner Pre-installed



• Wide working range

- Meets the needs of a wide range of applications for increased productivity
- Easily optimized product designs

• 100 scans per second

Optimized scanning speed delivers aggressive performance and accurate capture of all barcodes — even damaged and poor quality barcodes

• Low power consumption

Increased battery life in portable terminals

• Bright scan line and aim mode

Intuitive and easy to use across the entire working range

• Aggressive decoding algorithms



Damaged



Non linear distortion



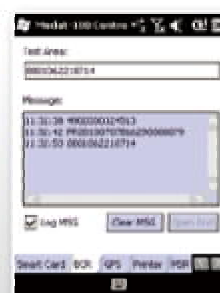
Over burn



Low contrast

- Decoding is key to maximize productivity and reduce exception processes
- Extensive symbologies library including linear and 2D codes

IEIMobile MODAT-100 Barcode Demo Software



- Press the hot key or [...] key to scan the barcode. Test area displays the number.
- During testing, the barcode reader detects and displays the commands/responses on the message box.

I/O Interface

• microSD

You can install applications on your MODAT-100 by using:

- Microsoft® ActiveSync. 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

• SIM Card

Insert SIM Card for 3.5G data transmission

• SAM Card

SAM (Security Authentication Module) card protects financial data transmission

• 16-pin Connector

16-pin connect cable



USB2.0 Host

USB Client

RS-232



USB Host Application for intelligent electric testing

Connect the MODAT-100 to electric testing equipment and transmit the data via USB-Host.



USB Client Application

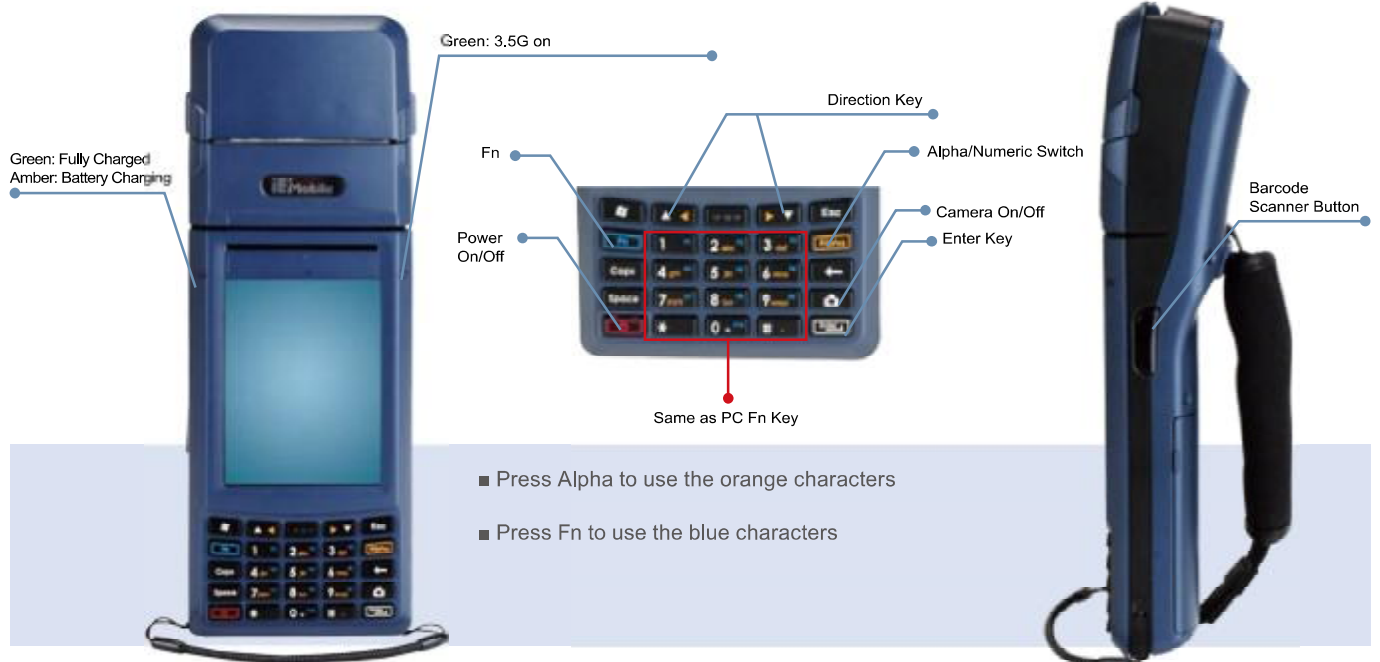
Connect to desk top and sync the MODAT-100 data.



RS-232 Application for mobile temperature test

Testing equipment connected via RS-232 allows field workers to test temperatures. The MODAT-100 detects errors and displays them on screen, allowing workers to address issues on-site.

LED Indicators & HOT Keys



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Control
Network
clusters

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Optional
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MODAT-100-RFID-WB65-En

- **Target on out-field services.** For example, public sector applications can utilize the HF RFID (13.56 MHz) to read tags and print out information with the thermal printer.

• Specification

- Marvell® PXA 310 624 MHz CPU
- Windows® Embedded Handheld 6.5 pre-installed
- Built-in 32-channel GPS Receiver
- Built-in Smart Card Reader (SCR), 2" thermal printer
- 1D laser barcode, **RFID supports ISO 14443 A/B & ISO 15693**
- Bluetooth, Wi-Fi and HSDPA



Bundled IEIMobile MODAT-100 Software Support

- **Besides Windows® Embedded Handheld SDK, the MODAT-100 provides an SDK (Software Development Kit)**

- SDK (for embedded Visual C++)

• Utility

- IEI Utility (Registry management, start up program and function test)
- Remote Management Tool
- Locate versions of Boot Loader and OS image on the "General" page
- When a new version of OS and/or Boot Loader is detected it can be updated by pressing the "Yes" button
- To open IEI Utility, click Start and select "Settings and System"
- To launch applications automatically, click the "Auto Execution" tab and add applications. Click the "Save to registry" button to save the settings



• Diagnostic and Demo AP

- Internet Demo
- Barcode Demo
- MSR/SCR Demo
- HSDPA Demo/Utility
- Printer Demo
- Camera Demo
- GPS Demo

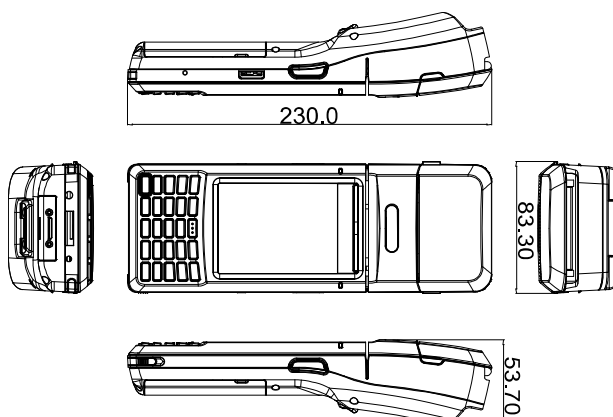


• COM Port Debugging Tool

Diagnose the COM6 (RS-232 port) using the COM Port Debugging tool to receive/send messages from the specified COM port.



MODAT-100 Dimensions (Unit: mm)



Specifications

Model		MODAT-100
Display	LCD Size	3.5" TFT LCD (Sunlight Readable)
	Brightness (cd/m²)	190 cd/m²
	Max Resolution	240 x 320 pixels QVGA
	Viewing Angle	80/80/80/80 Deg.
	Touch Screen	4-Wire Resistive Type Touch
System	CPU	Marvell® PXA 310 624 MHz
	Operation System	Windows® Embedded Handheld 6.5
	Memory	128 MB Flash + 256 MB SDRAM
	Storage	microSD Slot
Communication	Wireless LAN	Wi-Fi 802.11 b/g
	Bluetooth	Bluetooth 2.1 + EDR
	3.5G	WCDMA/HSDPA
	GPS	GPS w/internal antenna
Data Collection	Barcode	Built-in 1D Laser Engine and optional 2D imager Engine
	Camera	3 megapixels CMOS Camera with LED Flash Light
Indicators & Buttons	LED Indicators	Charging/Barcode status LED HSDPA status LED
	Hot Keys	2 x Barcode Trigger
I/O Interface	Audio	1 x Headset and 1 x Speaker
	Expansion	16-pin connector (RS-232 / battery charging/ OTG-Host/ OTG-Client)
		2" Thermal Printer
		Smart Card Reader Support Magnetic Stripe Reader Support
Power	Power Adapter	Input: VAC:90 V~264 V Output: 12 V/3 A
	Battery	7.4V 1880 mAh battery
Environment	Operating Temperature	0°C ~ 50°C
	Storage Temperature	-20°C ~ 70°C
	Humidity	5%~95% non-condensing
	Drop Survival	1.2 M
	Environmental Protection	IP 54 (Front Panel only)
Physical Characteristics	Certification	CE, FCC
	Dimensions (LxWxH) (mm)	230 x 84 x 54
	Weight	546 g

Optional Accessory List

Item	Part No.	Description
Cradle	MODAT-100-CR01-R10	Charging cradle integrated one charging bay along with USB Host, USB Client and RS-232 I/O ports
16Pin Cable	32024-001500-100-RS	16-pin cable Connect to USB Host, USB Client and RS232
Battery Pack	31603-000014-RS	7.4V 1880 mAh Battery
Carrying Case	7Z000-MODAT100POUCH-RS	Black, professional protector case with shutter strape for MODAT-100
Car Holder	19B00-000229-00-RS	MODAT-100 car holder with stand
Thermal Printer Paper	5Z000-000165-RS	One thermal paper; 57MM*3.1CM*0.079TMM;
	19N43-128001-00-00-RS	Five thermal paper per roll
microSD Card	79D00-G001-006-RS	1G microSD Card
	79D00-G002-005-RS	2G microSD Card

Support Function

Part Number	Barcode	RFID	MSR	SCR
MODAT-100-RFID-WB65-En	1DBarcode Scanner	13.56MHz supports ISO 14443 A/B & ISO 15693	N/A	Yes
MODAT-100-WB65-En5-En	1D Barcode Scanner	N/A	Yes	Yes
MODAT-100-2D-WB65-En-En	1D/2D Barcode Scanner	N/A	Yes	Yes

Packing List

Item	Part No.	Q'ty	Description
Battery Pack	31603-000014-RS	1	7.4V 1880 mAh Battery
Carrying Case	7Z000-MODAT100POUCH-RS	1	Black, professional protector case with shutter strap for MODAT-100
Power Adapter	63000-FSP036RAB613-RS	1	FSP036-RAB613; VAC:90V~264V; 12V/3A; 36W; PLUG Ψ1.35/Ψ3.5/ NONE LOCK/LENGTH:9.5MM; 1500MM; FSP
Stylus	7Z000-MODAT100STYLUS-RS	1	
Headset	30900-000001-RS	1	



Ordering Information

Part No.	Description
MODAT-100-RFID-WB65-En	3.5" TFT-LCD 190 cd/m² QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, HSDPA, 802.11 b/g Wireless, Bluetooth, 1D barcode scanner, RFID, Smart Card Reader, Windows® Embedded Handheld 6.5 OS, RoHS
MODAT-100-WB65-En	3.5" TFT-LCD 190 cd/m² QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, HSDPA, 802.11 b/g Wireless, Bluetooth, 1D barcode scanner, Smart Card Reader, Magnetic Stripe Card, Windows® Embedded Handheld 6.5 OS, RoHS
MODAT-100-2D-WB65-En	3.5" TFT-LCD 190 cd/m² QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, HSDPA, 802.11 b/g Wireless, Bluetooth, 1D/2D Imager barcode scanner, Smart Card Reader, Magnetic Stripe Card, Windows® Embedded Handheld 6.5 OS, RoHS