MB200i Product Guide

SAI Rev 1

CONTENT

DISCLAIMER

MB and its associated nomenclature (MB200i, etc.) are trademarks of SATO Corporation. Other product and corporate names used in this publication may be trademarks or registered trademarks of other companies, and are used only for explanation and to their owner's benefit, without intent to infringe.

SATO has made a good faith effort to present the most accurate and timely information available. Competitive information contained in this publication is based on public data sources available at the time of publication. SATO shall not be responsible for any inaccuracies or omissions in this information, including, but not limited to, information obtained from other companies' publications, the press, and other third party organizations.

All information in this publication is subject to change without notice, and does not represent a commitment on the part of SATO. No part of this manual may be reproduced for any purpose or in any form, including electronic storage and retrieval, without the express permission of SATO. Content with this document should be considered confidential and should not be distributed to any third parties. This document is intended solely for the use of SATO agents and its representatives.

©2006 SATO Corporation. All rights reserved.

1 ABOUT SATO

SATO is a pioneer in the Automatic Identification and Data Collection (AIDC) industry and the inventor of the world's first electronic thermal transfer barcode printer. It revolutionized the barcoding industry by introducing the Data Collection System (DCS) & Labeling concept – a total barcode and labeling solution providing high quality barcode printers, scanners/hand-held terminals, label design software and consumables. SATO is one of the first in the industry to introduce a complete, multi-protocol EPC-compliant, UHF RFID solution.

SATO is publicly listed on the first section of Tokyo Stock Exchange in Japan. It has worldwide offices in the United States, Belgium, France, Germany, Spain, United Kingdom, Poland, New Zealand, Australia, Singapore, Malaysia, Thailand and China. For the fiscal year ended March 31, 2005, it reported revenues of US$575 million. For more information, contact SATO America at www.satoamerica.com.

SATO's international global headquarters, SATO International Pte. Ltd, is located in Singapore. Previously an international division, it was incorporated as a holding company in Singapore in 2001 to oversee the sales, marketing and customer services activities of all its Group Member Companies. More information about SATO International can be found at www.satoworldwide.com

Contacting SATO America, Inc.
SATO America, Inc.
10350-A Nations Ford Road
Charlotte, NC 28273
Phone: (704) 644-1650
Fax: (704) 644-1662
Email: satosales@satoamerica.com
www.satoamerica.com

SATO Worldwide

AMERICAS

SATO AMERICA, INC.
10350 Nations Ford Road Suite A, Charlotte, NC 28273
www.satoamerica.com

SATO LABELING SOLUTIONS AMERICA, INC.
Romeoville
1140 Windham Parkway, Romeoville, Illinois 60446
www.satolabeling.com

Sales Office
4200 Dixon Drive, Hoffman Estates, IL 60195

Horticultural Division
930 Jimmy Ann Drive, Daytona Beach, FL 32117
www.satolabeling.com

INTERNATIONAL HQ

SATO INTERNATIONAL PTE. LTD.
438A Alexandra Road #05-01/04, Alexandra Technopark,
Singapore 119967
www.satoworldwide.com

EUROPE

SATO UK LTD.
Valley Road, Harwich, Essex England Co12 4RR, United Kingdom
www.sato-uk.com

SATO EUROPE NV
Leuvensesteenweg 369, 1932 Sint- Stevens-Woluwe, Brussels, Belgium
www.sato-europe.com

SATO LABELLING SOLUTIONS EUROPE GMBH
Ersheimer Straße 71, 69434 Hirschhorn

SATO DEUTSCHLAND GMBH
Schaberweg 28, 61348 Bad Homburg, Germany

SATO POLSKA SP Z O.O.
Ul. Wroclawska 123, 55-015 Radwanice K/Wroclawia, Poland

SATO FRANCE S.A.
Parc D'Activities - Rue Jacques Messager - 59175 Templemars, France

SATO IBERIA S.A.
Orió, 1 - 08228 Terrassa-Barcelona, Spain

HEAD OFFICE

Ebisu NR Building
SATO CORPORATION
21-3, Ebisu 1-Chome, Shibuya-ku, Tokyo, 150-0013, Japan
www.sato.co.jp

Pro-Plaza 21
SATO CORPORATION
9-10, Ebisu 4-Chome, Shibuya-ku, Tokyo, 150-0013, Japan
www.sato.co.jp

ASIA PACIFIC

SATO ASIA PACIFIC PTE. LTD.
438A Alexandra Road #05-01/04, Alexandra Technopark,
Singapore 119967
www.satoasiapacific.com

SATO AUTO-ID MALAYSIA SDN. BHD. *(Sales)*
SATO MALAYSIA SDN. BHD. *(Production)*
No.25, Jalan Pemberita U1/49, Temasya Industrial Park
Section U1, 40150 Shah Alam, Selangor Darul Ehsan

SATO AUTO-ID (THAILAND) CO., LTD
292/1 Moo 1 Theparak Road, Tumbol Theparak,
Amphur Muang, Samutprakarn 10270

SATO SHANGHAI CO., LTD
307 Haining Road, ACE Bldg, 10th Floor, Hongkou Area,
Shanghai, China 200080
www.satochina.com

SATO AUSTRALIA PTY LTD
80 Lewis Road, Wantirna South, VIC 3152
www.satoaustralia.com

SATO NEW ZEALAND LTD
30 Apollo Drive, Mairangi Bay
PO Box 305-031, North Shore, Auckland, New Zealand
www.satonewzealand.com

BRANCH/REPRESENTATIVES OFFICE

SATO ASIA PACIFIC PTE. LTD. - INDIA REPRESENTATIVE OFFICE
Ground Floor, B-259, Greater Kailash Part-1, New Delhi - 110048, India

SATO SHANGHAI CO., LTD - Shenzhen Branch
Suite 1207, North Tower. Cangsong Bldg., Tairan 6th Road,
Futian District, Shenzhen, China 518040

SATO ROTTERDAM LOGISTIC CENTRE
c/o Nippon Express (Netherlands) B.V
Willem Barentszstraat 44-48, 3165 AB Rotterdam,
Havennr. 2776, The Netherlands

2 PRODUCT POSITIONING

The MB200i product is equipped with serial (RS232) communication and Infrared (IR) ports; however, support for IrDA has been expanded on the MB200i, to include IrCOMM (3-wired Cooked mode that can be used with PC and PDA connection), IrOBEX (Cell phone connection) and BHT (scanners) in addition to the common IrSIR protocol. IrDA communication is ideal for short-range wireless communication where low power and secure data exchange is important.

The MB200i series has some enhanced communications and security features built into its optional 802.11b wireless module. For shorter-range non-line of site wireless communications, Bluetooth is an option as well.

The MB200i series features a durable, lightweight, smooth edged polycarbonate body and shock-absorbing mechanism to withstand the impact of mobile printer application use. The MB200i series was designed to withstand drops of 2m (6.56') on all 6 flat sides.

These printers are the fastest in their class. By combining a high speed energy saving CPU, high torque motors, enhanced electronics and the latest in battery power technology, these printers achieve a stunning print speed of up to 4 inches per second (103mm/s).

The large label capacity (2.63" OD roll size) allows for more labels per roll than most of the competition while remaining the most compact and lightweight in its class.

	MB200i
Outer Diameter of Paper	2.63" (67mm)
Weight/Dimension	.89 lbs. (405g) 5.03" W x 3.5" D x 2.9" H (128mm W x 73mm D x 88mm H)

3 PRODUCT FEATURES

3.1 Electrical Design

3.1.1 Low Power Consumption and Intelligent Mobile Processor

MB200i uses a 32-bit RISC SH-3 CPU that operates with a large 32-kilobyte (32KB), one-cycle access cache memory, and offers lower power consumption of 200mW during normal operation and high throughput. Another great feature of this CPU is that it can automatically reduce power consumption by halting the operation of specific on-chip functions whenever they are in idle states, resulting in extended operation time. The printer mechanism is controlled by a motor with high-speed and advanced technology, ensuring the MB200i can print at a faster speed of up to 4 inches per second (103mm/s)

3.1.2 Advanced Battery Technology

	MB200i
Battery type	Li-ion
Voltage rating	7.4V
Current rating	2400 mAh

SATO's MB200i adopted a new battery cell technology, which increases the current capacity without any increase in size and weight. With a higher current rating battery cell, the printer can print more labels on a single battery charge. An optional gang charger is available for fast and easy battery charging of up to 5 batteries simultaneously.

3.1.3 Memory with Large User Storage Area

SATO's MB200i offers a larger memory capacity to store user-defined information. Memory segmentation of the user-defined storage is tabulated below:

DESCRIPTION	AREA OF STORAGE	SIZE (IN K BYTE)
Font Data Storage	Flash ROM	256
Font Information Storage	Flash ROM	16
Customized Font Storage	Flash ROM	16
Receiving Buffer	RAM	40

3.1.4 Supported Interfaces

Optional Wireless Built-in Interface
- Bluetooth or
- Wireless LAN

IrDA Interface Port

RS232 Interface Port

The standard interface for MB200i is RS232 and IRDA (Infrared). Bluetooth and Wireless LAN are also available as optional factory fitted interface modules. The built-in wireless module in the MB200i is compliant with Wireless LAN IEEE802.11b standard.

The printer features network security options such as 802.1X authentication, 64/128-bit WEP encryption, and supports WPA (Wi-Fi Protected Access) for both 802.1x and WPA-PSK.esax.

NETWORK FUNCTION	**MB200i**
WLAN Mode	AdHoc and Infrastructure
SECURITY FUNCTION	
WEP	YES
WAP	YES
AUTHENTICATION FUNCTION	
IEEE802.1x certified	YES
WPA-PSK Mode	YES
EAP-TKIP	YES
EAP-PEAP	YES
EAP-TLS	YES
EAP-MD5	YES

3.2 Mechanical Design

3.2.1 Polycarbonate Construction – RoHS Compliant

		
Smooth Edged, Modular Design	Light and Portable Printer	Optional Holster or Water-Proof Case

The printer's polycarbonate construction offers high performance properties suitable for most mobile applications in harsh environments. This advanced material body provides MB200i with operating capabilities in normal as well as extreme printing conditions ranging from 5°F to 122°F (-15°C to 50°C) 30%-80% non-condensing relative humidity. The cover is reinforced for extra shock-absorbing protection. Additionally, the polycarbonate material is virtually unbreakable with its ability to withstand drops to concrete on its flat surfaces from 2M.

In addition, vibration endurance tests also prove that the MB200i is able to operate while undergoing 36,000 vibrations without damage.

An optional waterproof case is available and protects the printer allowing its operation during inclimate weather conditions. These covers are waterproof-certified to comply with the JIS protection Level 3 standard.

RoHS Directive
The printer complies with the RoHS Directive, which guarantees that the printer body does not contain the RoHS constrained substances (toxic metals commonly found in industrial workplaces) above the concentration values. The RoHS constraints are:

Chromium compounds	below 0.1%
Lead and its compounds	below 0.1%
Mercury and its compounds	below 0.1%
Cadmium and its compounds	below 0.01%
Polybrominated biphenyl (PBB)	below 0.1%
Polybrominated diphenyl ether (PBDE)	below 0.1%

The absence of such toxins from this product reduces health risks to users and the environment in term of pollution. It also ensures that the product can be sold into Europe, which requires all devices adhere to the RoHS. By summer of 2006 it is expected that the US will also require these same requirements. The entire unit also features anti-bacterial protection embedded on the outer-cover of the printer unit. This is especially helpful for the health conscious and for hospital applications.

3.2.2 Large LCD

The MB200i printer that is equipped with the optional wireless 802.11b interface module features a large LCD. The size of the LCD is 1.18" W (30mm) x .87" H (22mm). Its icon drive intuitive display allows the user to easily monitor the battery life, error messages and wireless LAN connectivity strength.

3.2.3 Large Media Capacity

The MB200i supports a media capacity size of up to 2.64" OD (67mm). The larger roll capacity of the MB200i allows for 37% more label capacity thereby reducing the amount of roll changes, increasing employee productivity

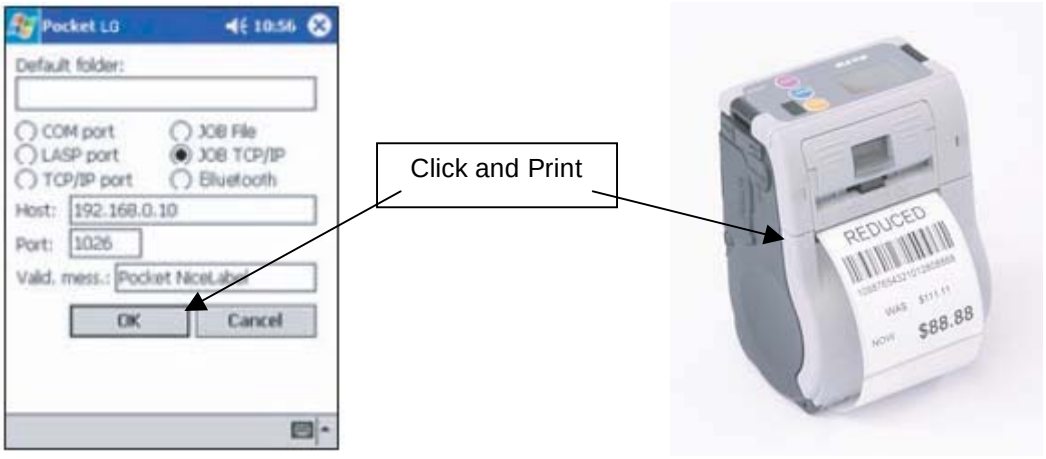
MB200i 67mm OD

3.3 Firmware Design

3.3.1 Programming Language

The MB200i supports the SATO Barcode Programming Language SBPL.

4 SATO MOBILE PRINTING SOLUTION & POCKET GALLERY



Pocket Label Gallery is an add-on module to the Label Gallery software to enable the MB200i printer to operate with Windows™ CE enabled handheld terminals. With the release of Label Gallery 2.0 this software features a True Pro version with the option to add multiple user (terminals) licensing.

1. Direct Printing from Terminal - you can send label information to the printer directly from the Pocket Label Galley application from its print command menu.

2. Distributed Printing - This approach will create a "print file" and send it to the respective clients/server, which they are interconnected in a Local Area Network environment through a TCP/IP socket connection. The "print file" contains information about the destination of printer-to-printer, print quantity and label data to be printed.

3. Print Application Programmable Interface (Command Library) - provide an API so that programmers can write custom applications that are consistent with the operating environment.

The pocket programming command Pocket Label Gallery Programming Guide. PDF is at www.satoworldwide.com

The current version of Pocket Label Gallery supports ARM, MIPS, x86, SH3 and SH4 with the following platforms:

- Microsoft Window CE.NET operating system
- Pocket PC2002
- Handheld PC 2000 (H/PC 2000)
- Handheld PC Pro (H/PC Pro)

Pocket Label Gallery has been tested on the following handheld terminals (although it is not limited to these terminals):

- Philips NINO: MIPS Palm Size
- HP Jornada 420: SH3, PPC
- HHP Dolphin 7900 Series
- Husky: MIPS, H/Pc Pro
- Compaq iPAQ: ARM, Pocket PC
- Symbol PPT 2800 Series: ARM, Pocket PC and Pocket PC 2002
- Intermec 700 Series Mobile Computer: ARM, pocket PC and Pocket PC 2002
- Intermec 6551 Pen Tablet Computer: MIPS HPC2000
- Psion Net Pad Window CE.NET: ARMV4 processor
- Fujitsu iPad Window CE.NET: ARMV4 processor or ARMV4i processor
- Casio DT-XT Windows CE.NET: ARMV4

5 WARRANTY INFORMATION

SATO warrants that when purchased from SATO or through an authorized SATO distributor or reseller; this printer, its components, and accessories are in good working order and are free from defects in workmanship and materials.

The warranty period for Printers (excluding the print head, platen roller and battery) is one (1) year from the purchase date. Warranties applicable to products commence on the date as stated on the sales invoice provided by the reseller. Commencement dates of warranties applicable to other sovereignties may be found in their relative literature.

The warranty period for Spare Parts (excluding print heads, platen rollers and battery) is one (1) year from the date of purchase. The warranty period for the Printheads and Platen Rollers is: Direct Thermal Applications: one (1) year or 15km (600,000 linear print inches), whichever occurs first. The warranty period for batteries is 90 days.