MCL-Collection

and the

Symbol MC1000

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MCL-Collection and the Symbol MC1000

This document provides some basic information relevant to the use of the Symbol MC1000 terminal in an MCL-Collection environment. It is in no way intended to replace the Manuals specific to the MC1000 produced by Symbol Technologies.

Overview of MCL-Collection components

The following components of the MCL-Collection support the MC1000:

- MCL-Designer for Symbol Pocket PC/CE 3.16 or greater
- MCL-Designer Device Plug-in (DDP) for MC1000 version 3.16 or greater
- MCL-Client for MC1000 version 3.13 or greater
- MCL-Link v3.02.10 or greater
- MCL-Net

The MCL-Client is factory installed, at no cost to the customer, by Symbol on all English OS version MC1000 terminals. A web downloadable version of the MCL-Client is also available and may be installed and used at no cost on English OS MC1000 terminals.

MCL-Collection includes support for the following MC1000 optional capabilities:

- WiFi wireless LAN communications
- Bluetooth printing

Optional WiFi and Bluetooth SDIO cards for the MC1000 must be purchased separately.

Introduction to MC1000

The MC1000 includes a fast Intel X-Scale processor, 32MB of RAM, 32MB of ROM, a large keypad, and a one-dimensional (1D) laser barcode scanner or linear imager. Data is transferred to a host system via USB, RS-232, or WiFi. If you require WiFi communications or Bluetooth printing capability you may insert an optional Secure Digital (SD) card into the user accessible slot to achieve this. Symbol Technologies recommends specific cards for this purpose. See Appendix 2 and 3 for details on specific cards that MCL Technologies has certified.

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Installing MCL-Client

Symbol plans to begin factory embedding MCL-Client on the MC1000 in Q2 2006.

Therefore, depending on when you receive your MC1000, it may or may not have MCL-Client preloaded on the device. However, even if MCL-Client has been installed by the factory, you may wish to upgrade your MCL-Client software to take advantage of a new feature or problem correction not provided by the current factory embedded version.

If MCL-Client is embedded and you do not need to upgrade it, then ignore this section.

To manually install MCL-Client on your MC1000 follow the instructions given below:

1. If it is not already installed on your PC, you must download and install ActiveSync 3.8 or greater, such as:
    http://www.microsoft.com/windowsmobile/downloads/activesync38.mspx

2. Establish a "guest connection" with your MC1000. When this is done, you will see your device appearing in My Computer. (For more details on how this is done see Appendix 1).
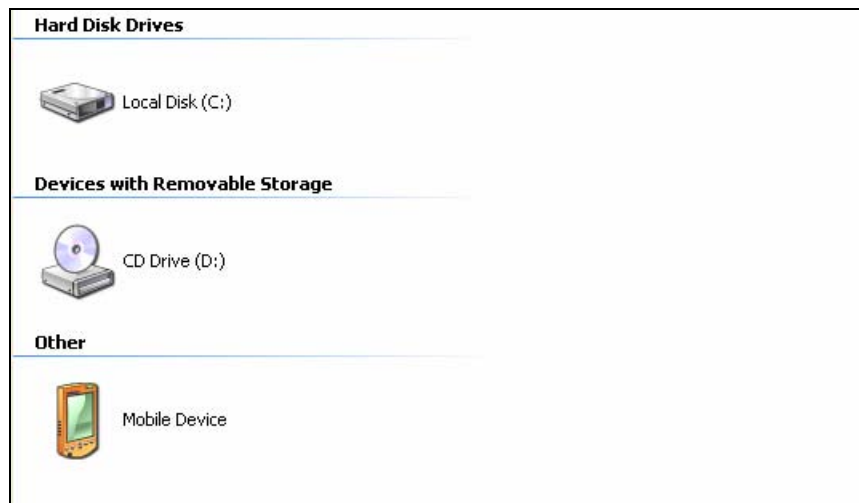
Figure 1 – "My Computer" Showing Mobile Device

3. Download the MCL-Client V3 for the MC1000 from the Download section of our Symbol-dedicated website (http://symbol.ftp.mcl-collection.com/).

4. **On your PC**, click on Mobile Device in My Computer as shown above, open the Temp folder, then simply drag-and-drop the downloaded MCL-Client ".cab" file from step (3) into this Temp folder.

5. **On your MC1000 device**, find the transferred file in the Temp folder, and run this. It will unpack, and your MCL-Client will be successfully installed. An MCL Icon has now been added to your device desktop.

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Reboot Sequences on the MC1000

Resetting the Mobile Computer

If the mobile computer stops responding to input, reset it. There are two types of resets, warm boot and cold boot. A warm boot restarts the mobile computer by closing all running programs. All data that is not saved is lost. A cold boot also restarts the mobile computer, but erases all stored records and entries from RAM. It also restores formats, preferences, and other settings to their factory default settings. Perform a warm boot first. This restarts the mobile computer and saves all stored records and entries. If the mobile computer still does not respond, perform a cold boot.

Performing a Warm Boot

To perform a warm boot press and hold the **Power** button until a message appears to warm boot the mobile computer. As the mobile computer initializes, the MC1000 desktop appears.

Note: Files that remain open during a warm boot may not be retained.

Performing a Cold Boot

A cold boot restarts the mobile computer and erases all user stored records and entries from RAM. Never perform a cold boot unless a warm boot does not solve the problem. A cold boot resets the mobile computer to the default setting and removes added applications and all stored data.

To perform a cold boot press and hold the **Power** button for at least 15 seconds. As the mobile computer initializes its Flash File system, the Symbol splash window appears for about 15 seconds.

Figure 2 – MC1000 Symbol Splash Screen

Note:

Files stored in the Program Files folder are **discarded** after a cold boot.
Files stored in the Application folder are **retained** after a cold boot.

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USB Operational Communications

MCL-Collection supports USB for operational communications. MCL's implementation of USB gives customers the same capabilities as using RS232 serial communications for sequential, point-to-point mobile computer communications.

Requirements

Several MCL components are required to create and deploy an MCL application using USB for operational communications.

- MCL-Designer V3 version 3.16 or greater
Windows XP or Windows 2000
ActiveSync 3.8 or greater installed
MC1000 MCL-Designer Device Plug-in v3.16 or greater

- MCL-Link version 3.02.10 or greater
Windows XP or Windows 2000
ActiveSync 3.8 or greater installed
MCL-Link uses UDP sockets to communicate. Therefore, a TCP/IP stack must also be installed

- MCL-Client version 3.13 or greater
ActiveSync 3.8 installed on the MC1000
MC1000 USB adapter or cradle with USB port

Getting Started

To use USB operationally in your MCL application, select it in the MCL-Client System Menu in the "communication mode" combo object.

Limitations

The MCL-Client relies on ActiveSync already being installed on the WinCE terminal. MCL-Client does not use ActiveSync; it only uses the ActiveSync USB client driver. However, this means that only MCL-Client or ActiveSync may be used at any given time on the MC1000. When MCL-Client is running, it disables ActiveSync. When you quit MCL-Client, it re-enables ActiveSync before terminating.

If the USB option is selected in the MCL-Client System Menu, MCL-Client monopolizes the USB port. To use the USB port for another software package, close the MCL-Client.

More Information

For additional information, refer to "MCL USB Deployment Notes" available for download from the MCL website at http://www.mcl-collection.com.

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English Version Operating System

MCL-Client is currently only factory installed and available at no cost on the English Language OS versions of the MC1000.

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Auto Boot into MCL

If the MCL-Client has been factory installed on the MC1000 terminal, MCL may start automatically upon terminal boot. In the event that MCL does not start automatically, you can configure the system to auto boot into MCL. This may be necessary, for example, following a manual installation of MCL-Client.

To set up MCL-Client to auto boot into MCL, access the MCL-Client System Menu. Then follow the instructions given below.

1. Enter the System Menu and select option 5, "Setup Menu".
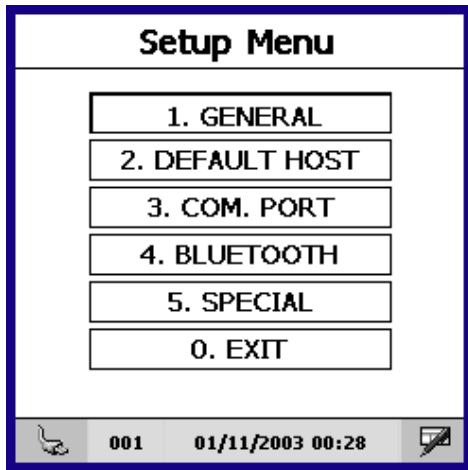
2. In the Setup Menu, select option 5, "Special".

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3. In the Special menu, select option 1, "Yes Auto Restart".

4. After selecting option 1 in the Special menu, you will receive a message saying "The operation was done successfully". After receiving this message, the next time you boot the MC1000, the terminal will automatically start MCL.

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Migration Wizard

MCL Technologies has a Migration Wizard that instantly forward migrates your Symbol DR-DOS terminal MCL applications to run on Symbol's MC1000, MC3000, MC50, and MC9000 mobile computers. The Migration Wizard does more than just upgrade your application. It imports, converts, upgrades and *enhances* your Symbol DR-DOS MCL applications to run on the new generation of mobile computers.

The Migration Wizard is an add-on to the MCL-Designer for Symbol devices.

More Information

For additional information, refer to "Preserving Your Investment" available for download from the MCL website at http://www.mcl-collection.com.

A related document Future-proof Your Mobile Applications with MCL Wizard is also available from Symbol Technologies at http://www.symbol.com/MC1000/.

Figure 3 – MCL-Designer Migration Wizard

SD Cards

The MC1000 has an SD card slot that may be used to hold an SD memory card or an SDIO card to support Bluetooth printing or WiFi communications.

SD Memory Card Installation

An SD memory card may be used for storage of lookup files and data collection files for batch file upload and download to a host system.

To install an SD memory card on an MC1000:

1. Press the red Power button to turn off the screen, this sets the mobile computer to suspend mode.

2. Loosen the two captive screws securing the SD card cover.

3. Insert the SD memory card into the SD card slot. Note the position of the notch on SD card.
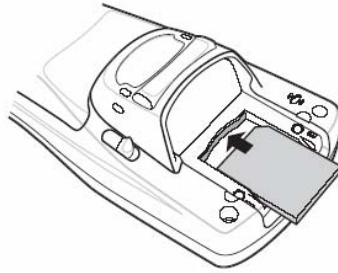

Figure 4 – SD Memory Card Insertion

Bluetooth Setup

Note that only the following Bluetooth card from Socket Communications, and recommended by Symbol Technologies, has been tested by MCL Technologies:

❧ Bluetooth: Socket BL4800-392

Please see Appendix 2 for setup details.

WiFi Setup

Note that only the following WiFi card from Socket Communications, and recommended by Symbol Technologies, has been tested by MCL Technologies:

❧ Wireless LAN (802.11b): Socket WL6209-602 (International)

Please see Appendix 3 for setup details.

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Appendix 1 – Establishing a Guest Connection

In order to run an application created using MCL-Designer and use MCL-Link and MCL-Net for data communications between the MC1000 and a host system, an MCL-Client must first be installed on the mobile computer. If the MCL-Client is not factory installed or if you want to upgrade the factory installed MCL-Client, you'll need to install the MCL-Client yourself.

See the section "Installing an MCL-Client" for information about how to install an MCL-Client on an MC1000.

This appendix describes how to establish a guest connection as indicated in step 2 of the section "Installing an MCL-Client". This process involves a Host PC Setup and Mobile Computer Setup as described below.

Host PC Setup

Installing ActiveSync

To install ActiveSync on the host computer, download the latest version of the software from the Microsoft web site at http://www.microsoft.com. Refer to the installation and RAS instructions included with the ActiveSync software.

Microsoft recommends installing ActiveSync on the host computer before connecting the mobile computer.

Setting Up an ActiveSync Connection on the Host Computer

1. Select *Start - Programs - Microsoft ActiveSync* on the host computer. The ActiveSync Window appears.

Figure 5 – ActiveSync Window

2. In the ActiveSync window, select File - Connection Settings. The Connection Settings window appears.
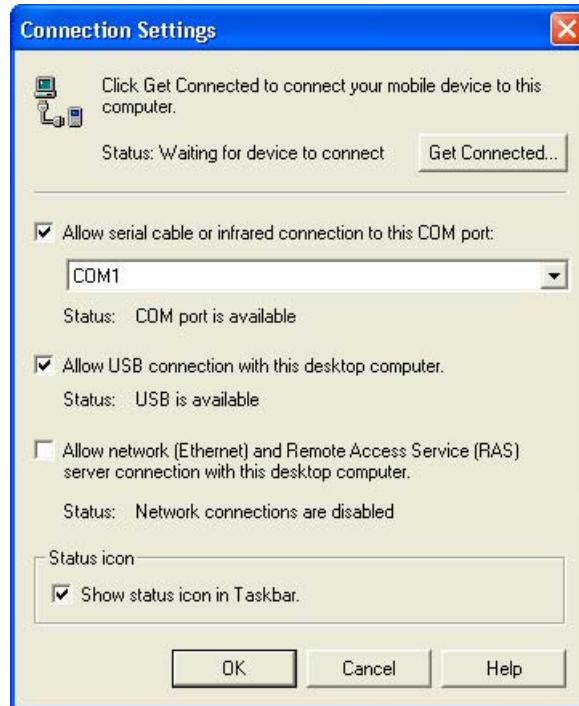

Figure 6 – ActiveSync: Connection Settings

3. Select the appropriate check box for the type of connection to be used.

4. Select the Show status icon in Taskbar check box.

5. Click **OK** to save any changes made.

Setting up a Partnership

1. On the host computer, select Start - Programs - Microsoft ActiveSync - File - *Get Connected*.

Figure 7 – ActiveSync: Get Connected Window

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2. Connect the mobile computer to the host computer using one of the appropriate connections as shown below.

Figure 8 – Serial Connection via Cradle
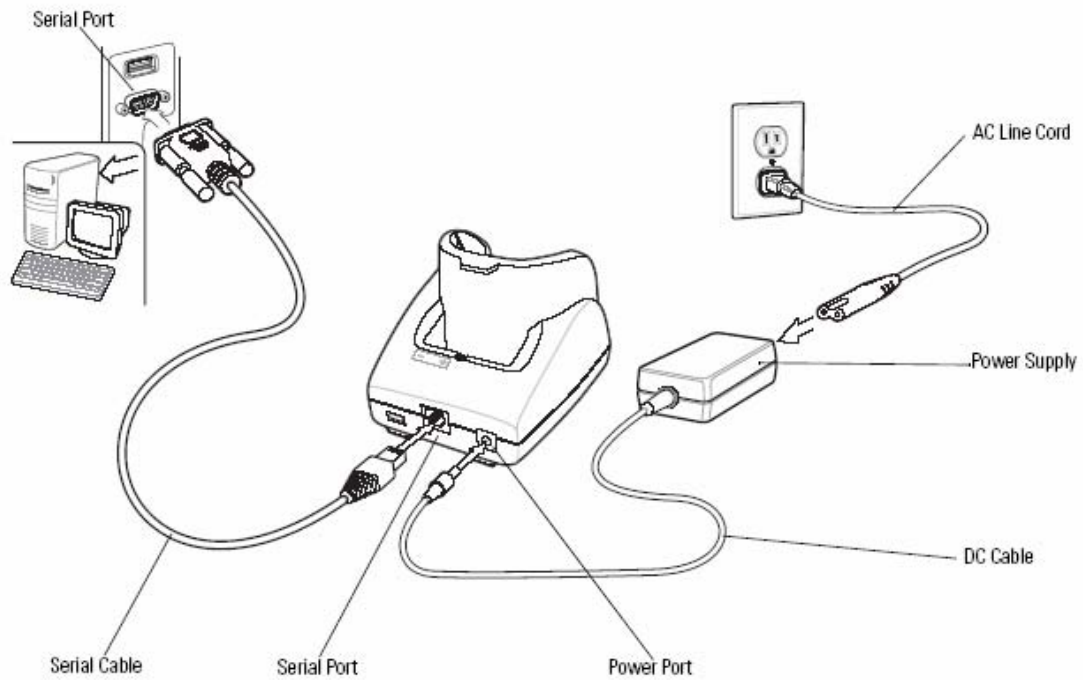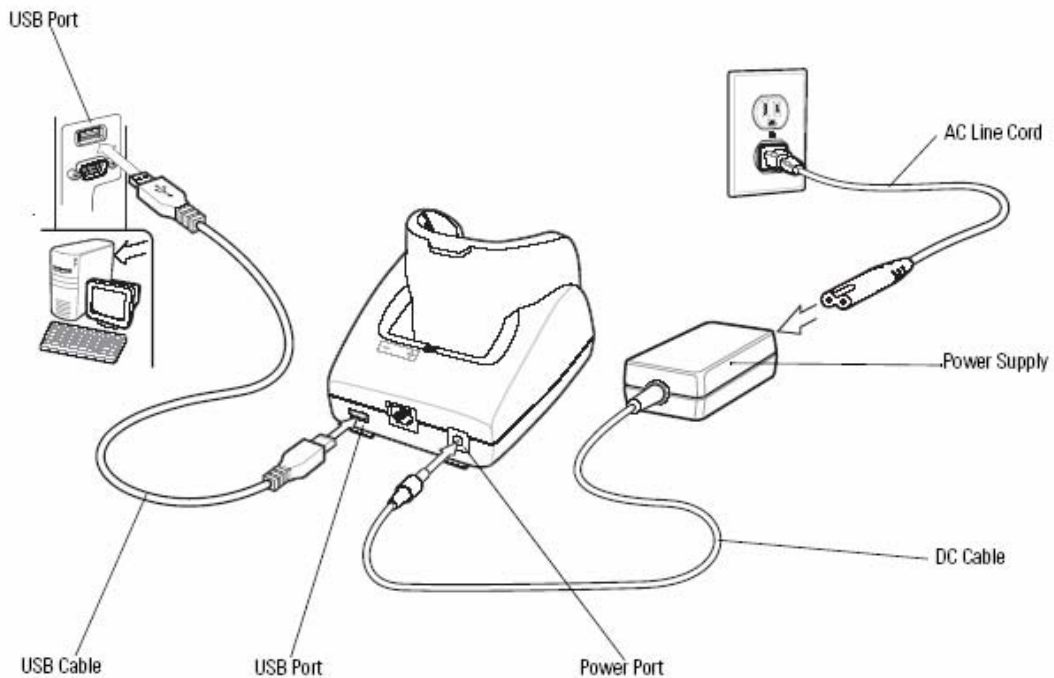

Figure 9 – USB Connection via Cradle

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a) Slide the bottom of the mobile computer into the cable cup and gently press it down until it is firmly seated in the cable cup.

b) Connect the other end of the cable to the appropriate host device.
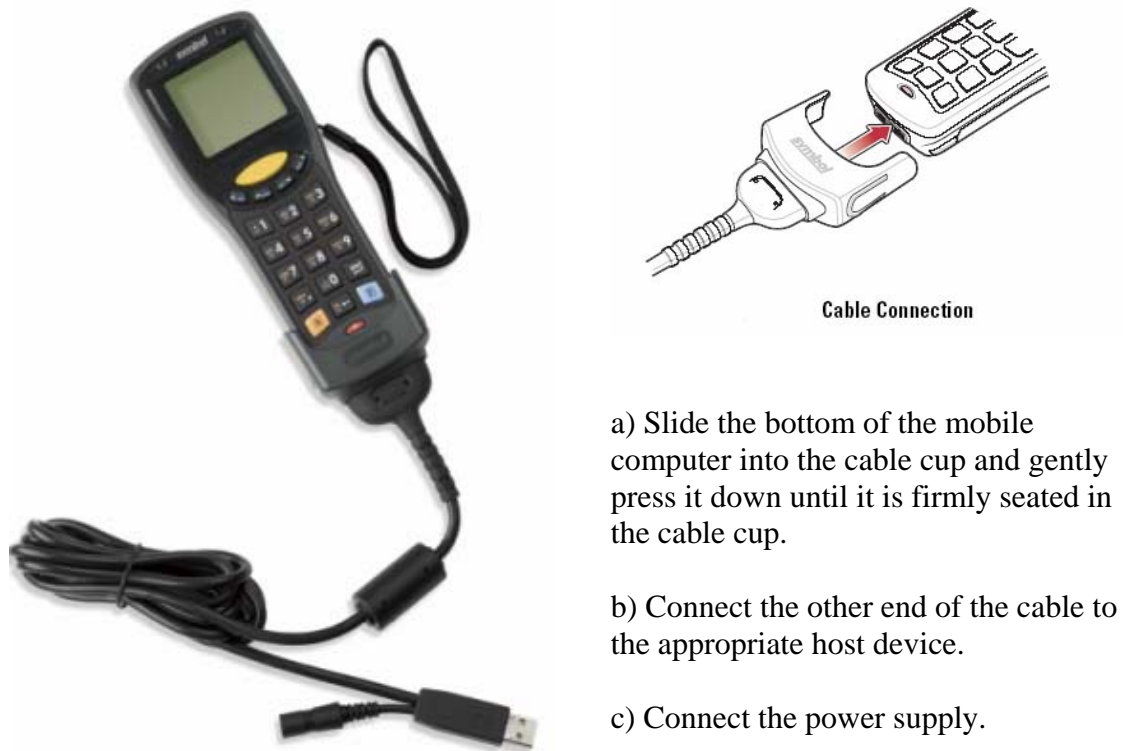
c) Connect the power supply.

Figure 10 – USB Connection via Adapter

3. On the host computer, select **Next** in the *Get Connected* window. The host computer and the mobile computer attempt to communicate. The *New Partnership* window appears.
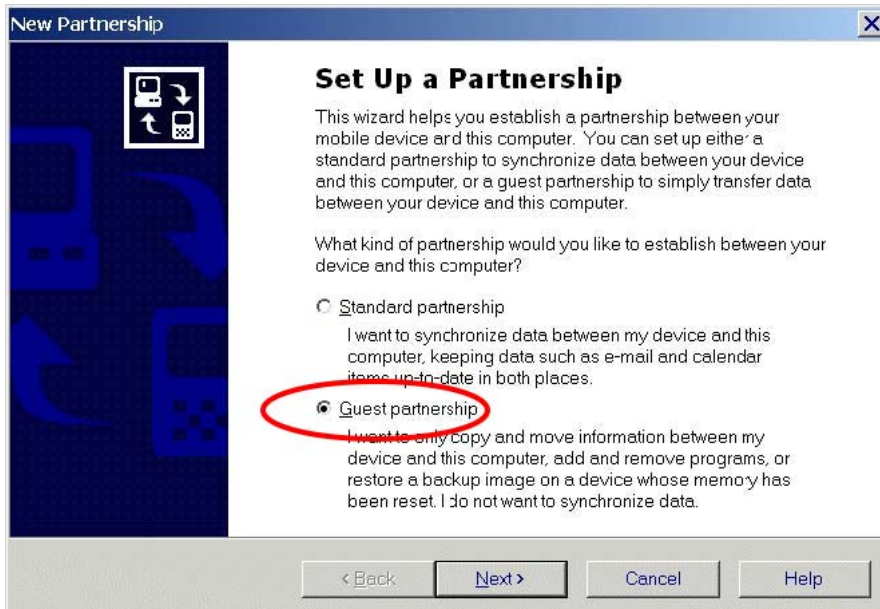

Figure 11 – ActiveSync: Guest Partnership Window

4. Click the *Guest partnership* radio button and then select **Next**.

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Mobile Computer Setup

Setup the mobile computer to communicate either with a serial connection or a USB connection. Set the mobile computer communication settings to match the communication settings to be used with ActiveSync. USB is the default so the following 9 step process is not necessary if you intend to use USB

Serial/USB Connection Setup

1. On the mobile computer press **F** - **CTRL** - **F** - **ESC** to open the *Start* Menu.
2. Scroll up to *Settings* and press **ENT**. The *Control Panel* appears.
3. Scroll to the *PC Connections* icon and press **ENT**. The *PC Connection* window appears.

4. Press **F** - **TAB** to highlight on   the **Change Connection...** button.

5. Press **ENT**. The *Change Connection* window appears.

6. Use the scroll up and down keys. Select: *Serial 115200.*

7. Press **ENT**.

8. Press **F** - **TAB**.

9. Press **ENT** to exit the *PC Connection* window and **ENT** to exit the *Control Panel* window.

10. Ensure that ActiveSync is installed on the host computer and a partnership is established.

11. Start ActiveSync if it is not running on the host computer. To start, select *Start - Programs - Microsoft ActiveSync.*

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Appendix 2 – Bluetooth Setup

Socket's SDIO Connection Kit enables your MC1000 with *Bluetooth®* wireless technology. With this kit, your mobile computer will be able to communicate with *Bluetooth* enabled printers.

MCL Technologies has tested MCL-Client with the following card from Socket Communications:

- Socket BL4800-392

Drivers and manuals can be downloaded from Socket's website at:
http://www.socketcom.com/support/mc1000/
Support for Socket can be obtained at:
http://www.socketcom.com/support/

Socket COM SDIO Bluetooth adapter installation procedure

Install the SDIO card on your MC1000:
1. Press the red Power button to turn off the screen.
2. Loosen the two captive screws securing the SD card cover.
3. Insert the SDIO card into the SD card slot. Note the position of the card notch.
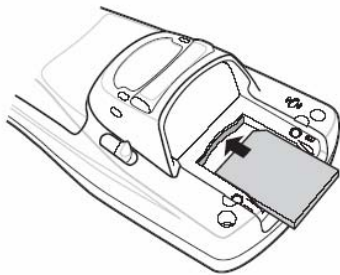
The following explains how this card's drivers should be set up on your MC1000 in order to be used with MCL-Client.

1. Install the Socket COM SDIO Bluetooth driver on the MC1000.

2. In the \Application directory, run "BtStack.CENET240x240ARMV4.CAB"

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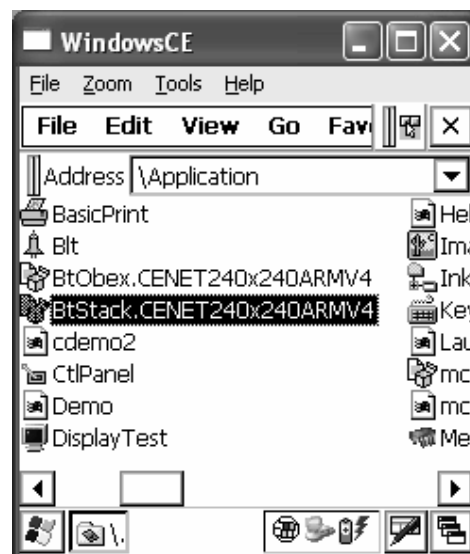
3. Choose OK to accept the default directory.

4. Select "Next" to continue installation.

5. Enter the desired name for your device.

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6. IMPORTANT: You have to:

▪ Deselect
Bluetooth LAP (LAN Access)
Bluetooth Desktop (ActiveSync)
Bluetooth Printer (Printing)
Bluetooth FAX (Faxing)

▪ Select
Bluetooth COM (Generic serial).

7. Select "Finish"

8. Turn the terminal off momentarily using the red on/off button, and then turn it back on for the settings to be accepted.

9. The Bluetooth icon should appear at bottom of the terminal.

10. The adapter is now ready to be used by MCL.

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Appendix 3 – WiFi Setup

Socket's SDIO WiFi card allows your MC1000 to communicate over WLAN networks in an MCL-Collection environment.

MCL Technologies has tested MCL-Client with the following card from Socket Communications:

- Socket WL6209-602 (International)

Drivers and manuals can be downloaded from Socket's website at:
http://www.socketcom.com/support/mc1000/
Support for Socket can be obtained at:
http://www.socketcom.com/support/

Socket COM SDIO Wireless LAN adapter installation procedure

Install the SDIO card on your MC1000:
1. Press the red Power button to turn off the screen.
2. Loosen the two captive screws securing the SD card cover.
3. Insert the SDIO card into the SD card slot. Note the position of the card notch.
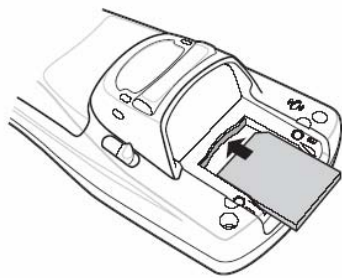
The following explains how this card's drivers should be set up on your MC1000 in order to be used with MCL-Client.
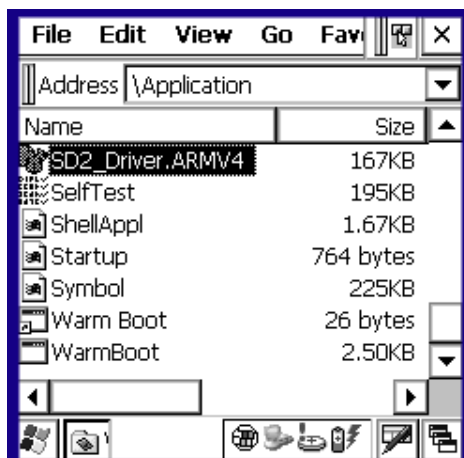
1. Copy the provided cabinet file onto the device.

2. In the \Application directory, run the .cab file "SD2_Driver.ARMV4.cab"

3. Accept the default path.

4. Turn the terminal off momentarily using the red on/off button, and then turn it back on for the settings to be accepted.

5. When the screen reappears you can select your chosen wireless network.

6. Set your options to correspond to the setting of your wireless network.

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7. You should now be connected to your chosen wireless network

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Top Reasons to Use MCL-Collection

- Core competency in development tools for data capture, mobile workforce applications development, deployment, and management.

- High productivity development environment to create applications that integrate data capture technologies, wireless communications, and mobile computing.

- Development environment to create multimodal applications combining technologies such as barcode scanners, touch screens, keyboards, signature capture, imagers, radio frequency identification, displays, printers, and voice recognition.

- Flexible, modular deployment architecture:

Building blocks to customize host access, network size, and communications modes.
Easy concurrent access to host applications, ODBC compliant databases, warehouse management systems (WMS), and enterprise resource planning (ERP) systems.
Scalable deployments from 1 to 62,500 concurrent mobile terminals per server.
Efficient for small system deployments.
Powerful and optimized for large distributed system deployments.
Real-time, on-demand, or batch data communications.
  o Seamless, transparent transitions back and forth between these modes of communication.
Continuously, casually, or occasionally connected users.
  o Seamless, transparent transitions back and forth between states of connection.

- Framework so you can focus on functional business issues, and not on implementation issues and constantly changing low-level technologies such as operating systems, wireless infrastructures, and data capture methods.

- A focus on minimizing your total cost of application ownership:

High-productivity development environment.
Multimodal implementations of data capture technologies.
Low on-going maintenance effort.
Modular, flexible architecture.
Easy application deployment and management.
Cross-platform compatibilities.
Forward migration paths.
Future-proofed applications.
Investment preservation.

- Benefits to your organization from data capture, mobile worker applications created using MCL-Collection:

A mobilized workforce.
Workforce productivity improvements.
Cost reductions.
Competitive advantages

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MCL-Designer
High-productivity, horizontal development
environment to create
enterprise-ready, multimodal,
data capture applications.

MCL-Link
Batch/ Point-to-Point, Serial:
▪ Direct Connect RS-232
▪ Modem

MCL-Net
Real-Time/ Concurrent Users:
Wireless
▪ WLAN: WiFi, 802.11
▪ WWAN: GSM, GPRS,
  Wired Ethernet

MCL-Bridges
▪ Host Applications
▪ Back Office Applications
▪ ERP: SAP
▪ Warehouse Management (WMS)
▪ ODBC: Oracle, Access, FoxPro,
  DB2, Excel, Sybase, SQL

MCL-Collection with Vocollect Voice™
Voice Recognition, Voice Synthesis

MCL Technologies Headquarters
Chaussée de Bruxelles, 572
1410 Waterloo – Belgium

Tel   +32.2.724 35 00
Fax   +32.2.724 35 04

marketing@mcl-collection.com

support@mcl-collction.com

MCL Technologies US – Competence Centre
Competence.usa@mcl-collection.com

MCL Technologies UK – Competence Centre
Competence.uk@mcl-collection.com

MCL Technologies Ireland – Competence
Centre
Competence.ie@mcl-collection.com

MCL Technologies NL – Competence Centre
Competence.nl@mcl-collection.com

About MCL Technologies

MCL Technologies is a recognized leader in delivering high-productivity software
development tools for mobile workforce application development, deployment, and
management. Its enterprise-ready, standards-based software suite, MCL-Collection,
seamlessly integrates the latest technologies with mobile computer, multi-manufacturer,
cross-platform compatibility. Through the integration of mobile computing, wireless
infrastructures, and data capture technologies like barcode scanners, radio frequency
identification, and voice recognition, MCL-Collection helps organizations deploy mission
critical and on-demand multimodal applications to improve workforce productivity, reduce
costs, and achieve competitive advantage. Since 1992, MCL-Collection has been
implemented in thousands of locations around the world by large and small organizations
with sectors of activities as varied as retail, banking, healthcare, government, transportation
and logistics, warehousing, field service, and manufacturing. More information is available at
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