DuraMax-HG

Rugged Handheld Quick Reference Guide

V 0.05 | Bulletin XXXX | Effective Spring 2007

Grayhill Part Number:

M1YY1023

561 Hillgrove Avenue
LaGrange, IL 60525

Phone: (708) 354-1040
Fax: (708) 354-2820
On the Internet:
http://www.grayhill.com/CustomMobile

Product Reference Guide

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Copyright © 2007 Grayhill, Inc. All rights reserved.

The information supplied in this manual is believed to be reliable and accurate at the time of its publication. Grayhill, Inc. assumes no responsibility for any errors, omissions, or the suitability of its product(s) for a particular application.

Warranty

Industrial Handheld Computers from Grayhill, Inc., (i.e., "Product") are warrantied against defects in materials and workmanship under normal use, for a period of 1 year from the date of purchase. This warranty does not apply to units that have been abused or stressed beyond the published environmental and electrical specifications. In the event of a product failure due to materials or workmanship, Grayhill will repair or replace the defective product. This warranty is limited to the original purchase price of the unit and does not cover installation, labor or any other contingent costs. For warranty service, return the defective product to Grayhill, shipping prepaid, for prompt repair or replacement. The foregoing sets forth the full extent of Grayhill's warranties regarding the Product. Repair or replacement at Grayhill's option is the exclusive remedy.

THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED; AND GRAYHILL SPECIFICALLY DISCLAIMS ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL GRAYHILL, ITS SUPPLIERS OR LICENSORS BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT; FOR ANY LOSS OF USE; LOSS OF TIME; INCONVENIENCE; COMMERCIAL LOSS; LOST PROFITS OR SAVINGS; OR OTHER INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. THEREFORE, THE FOREGOING EXCLUSIONS MAY NOT APPLY IN ALL CASES.

This warranty provides specific legal rights. Other rights, which vary from state to state, may also apply.

Ordering Guide

All programs and files on the CD included with this Product are protected by copyright. Grayhill, Inc. authorizes duplication of the contained programs and files as necessary for use by the licensee; however, general distribution of these programs and/or files is strictly forbidden without prior written consent from Grayhill, Inc.

Grayhill Product	**Grayhill Part Number**
Rugged Mobile Handheld QVGA Display GPS, BlueTooth, IP67	M1YY1023-2
Rugged Mobile Handheld QVGA Display GPS, Barometer, Compass, 802.11, BlueTooth, IP67	M1YY1023-3
Handheld Lithium Ion Battery 10.5Whr	M1YY1020-8
Handheld Lithium Polymer Battery 15.5Whr	M1YY1020-3
Charging Cable with USB Host and USB Client Snap Version	M1HH4151-1
Charging Cable with USB Host, USB Client, and RS-232 Snap Version	M1HH4151-3
Auto Cable	01YY5061-2
USB To Serial Adapter	01YY5062-1
Evaluation Kit – 1 Handheld QVGA Display (M1YY1023-3) 1 Handheld Lithium Ion Battery (M1YY1020-3) 1 Handheld Product CD 1 Charging cable (M1HH4152-1) 1 Stylus	DURAMAXEVT35HG

Audience

This manual is designed to be a quick reference resource for the Grayhill Handheld. The information it provides is intended for qualified electrical personnel familiar with installing, programming, and maintaining industrial networks and industrial automation.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Table of Contents

Warranty 1
Introduction 3
Summary of Features 3
Typical Uses 3
Handheld Product Components 3
Evaluation Kit Contents 5
Setting Up the Handheld 4
Charge the Handheld 4
Turn On the Handheld 5
Align the Handheld Touch Screen 6
Resetting 6
Using the Handheld 7
Handheld Buttons 7
Connectivity 8
Using the Stylus 8
Task Bar and Start Menu 9
Pre-Installed Programs 9
Using the Keyboard 10
Changing Handheld Settings 11
Field Swapping the Battery 12
Storing Data 13
Built-In Flash Memory 13
Wired Communications 14
Running ActiveSync 17
Disconnecting ActiveSync 17
Wireless Communications 18
WiFi (802.11x) 18
BlueTooth 18
Compass and Barometer 19
GPS 19
Regulatory Information (Pending) 20
FCC Notices 20
Service Information 21

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Introduction

The Grayhill Industrial Handheld Computer is a rugged handheld computer designed for use in heavy industrial or commercial applications. The Handheld provides wireless connectivity and durable mobile personal computing functionality for personnel working in extreme environments.

Summary of Features

- **Environmentally Sealed and Submersible**
- **Daylight Viewing Ability**
- **3.5" VGA (640x480) or QVGA (320x240) Transflective Display**
- **Ruggedness:** Solid frame; industrial-strength, high-impact touch screen
- **Dimensions:** 7.6" x 3.3" x 1.7"
- **Weight:** 20oz. with battery
- **Operating System:** Windows CE 5.0
- **Processor:** Intel XScale PXA270 416 MHz
- **Battery Life:** 8 hours at maximum power consumption
- **64 MB RAM and 64 MB Non-Volatile Flash Memory:** No loss of data upon hard reset
- **Auxiliary Storage Capabilities:** Secure Digital / Compact Flash
- **Multiple On-Board Wireless Options:** WiFi (802.11x), Bluetooth
- **Wired Connections:** Active Sync and USB via cable
- **Audio:** Speakers and Microphone
- **GPS:** On-board GPS with internal antenna and connection for external antenna
- **Other Features:** Compass, barometer, Hot Swap

Typical Uses

Wireless communications address a range of industrial and commercial communications challenges. Communications using radio waves can be made over long distances; through the heat of blast furnaces; and in the cold temperatures and precipitation that may be present at outdoor sites.

Whether working in construction, manufacturing, mining, or other physically demanding jobs, field personnel will find the Grayhill Handheld useful because of its comprehensive communications options; and its ability to withstand hard knocks, dusty job sites, extreme temperatures, rain, snow, and even submersion in water.

Handheld Product Components

The portable Handheld is housed in a 7.6" x 3.3" x 1.7" rugged plastic frame that features a rubber boot for added durability. It features a 3.5" VGA or QVGA display with a rugged 5-wire touch screen. The Handheld also includes two (2) keypads: one for navigation and one for numeric entry.

Accessories that accompany the Handheld include a Lithium Ion battery or Lithium Polymer Battery; an AC adapter that includes USB Active Sync and USB Host; and a companion CD with an electronic version of this guide.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Evaluation Kit Contents

The Handheld Evaluation Kit includes the following components. For detailed ordering information, please refer to the Ordering Guide.

Handheld Kit Components
1 Handheld Standard
1 Handheld Stylus
1 Handheld Lithium Ion Battery (15.5Whr)
1 Handheld AC Adapter with USB Active Sync connection and USB Host Connection
1 Handheld Product CD

Table 1
Grayhill Handheld evaluation kit components

Setting Up the Handheld

The Grayhill Handheld is shipped with a rechargeable Lithium Ion battery, which is not installed at time of shipment. Some initial setup is required.

Charging the Handheld

Before using your Handheld for the first time, charge its battery for about three (3) hours, connecting the Handheld to an electrical outlet using the Grayhill Charging cable.

A completely charged battery will power the Handheld for eight (6-8) hours of maximum power consumption, depending upon the type of battery ordered with the system.

Charging the Battery Using the AC Adapter

Attach the AC adapter to the Handheld's external connector, then connect the power cord to an electrical outlet. Refer to Figure 5.

WARNING: Use only a Grayhill-approved AC adapter with the Handheld. Use of another AC adapter may cause a fire or an explosion. Always connect the AC adapter first to the Handheld. Use the adapter with a properly grounded supply to avoid electric shock. Before plugging the power cord into the wall socket, make sure its voltage and frequency match that of the AC adapter. If using an extension cord with the AC adapter provided, ensure that the total current rating of the product does not exceed the current rating of the extension cord.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

LEDs

- When the Handheld is fully charged, the green ***Power*** LED will glow **steadily green**.
- When the unit is unplugged from AC or the Battery is not charging, the LED will be **off**.
- While the battery is charging, the LED will glow **steadily amber**.
- If there is a low battery, the LED will **flash red**.
- If there is a fault or no battery present, the LED will glow **steadily red**.

	Adapter Present		No Adapter
Battery Status	**Charger ON**	**Charger OFF**	**Not Charging**
Battery Reports Fully Charged	Green	Green	None
Battery Reports Fully Discharged	Amber	Flash Red	Flash Red
Battery Reports Between Charged and Discharged	Amber	None	None
Battery Status Unknown or Disconnected	Red	Red	Red

Table 2
Battery Status Lights

Turning On the Handheld

If your Handheld has been turned off, turn it on by pressing the ***Power*** button, which is located on the lower center of the Handheld's frame. The first time you power on your Handheld, it should take approximately 45 seconds to activate.

Figure 1
Power button

Instant On/Off

Once the unit is initially powered up, the Handheld will turn on instantly when you press the *Power* button, and turn off instantly when you press the *Power* button again. This instant on/off feature is designed to facilitate work under harsh and unpredictable conditions.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Aligning the Handheld Touch Screen

The Handheld's touch screen may require initial calibration to align the touch screen cursor with the tip of your stylus. To launch the calibration, tap ; then tap *Settings;* then tap *Control Panel*; then tap

. Click on the calibration tab, and then click on *Recalibrate*. To calibrate your screen, tap the center of each alignment target with the tip of the stylus. Once the calibration is successful the screen will prompt the user to press escape or tap the screen.

Figure 2
Recalibration Prompt Screen

Resetting

By default, the Handheld's instant-off feature causes it to go into immediate "low power" mode where closed programs are still in memory, but the screen's backlight is off. If the Handheld will not be used in the near future, batteries should be removed.

Soft resets of the Handheld are accomplished by:

1) Selecting *Restart,* located in MyDevice>Windows>Restart.exe, *or*

2) Responding affirmatively to a request for restart from an installer or other program. When so instructed, click *Yes* on the pop up box for restart.

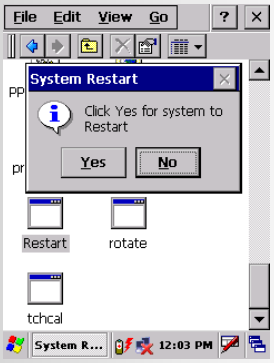

Figure 3
Restart Prompt

To conduct a hard reset, hold the *Power* button down for 6-10 seconds, until the screen goes black. This will clear the Handheld's RAM and reload the OS from Flash.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Using the Handheld

The Handheld's external features are designed for use in harsh conditions or on rugged terrain. Its QVGA or VGA display, external buttons, and battery are built to resist impact.

Handheld Buttons

Figure 4
Handheld front view

Power/Sleep Button

Firmly press the ***Power*** button on the bottom center of the Handheld frame to turn the Handheld on. Press the ***Power*** button again to put it into low power mode.

Navigation Button

The Handheld features an 8-way navigation button, which can be customized.

Hot Keys

Function keys 1 – 6 are the hot keys. Three Hot Keys are located to the left of the navigation key, and three Hot Keys are to the right. You may assign any functions you wish to each of these keys via *Settings>Contol Panel>HotKey* on the *Start* menu. The hot keys are programmed to the following default settings: Hot Key 1: *Tab*, Hot Key 2: *Backlight Control*, Hot Key 3: *Escape*, Hot Key 4: *Virtual Keyboard*, Hot Key 5: *Start Menu*, Hot Key 6: *Enter*.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Connectivity

Figure 5
Handheld cable

- The main port to connect the cable is located on the bottom of the unit.
- The USB A-Type Female connector facilitates connectivity with peripherals, such as with an external keyboard or a mass storage device.
- The USB A-Type Male connector is for connecting to another PC via Active Sync.
- The Serial Cable offers Serial Communications (RX and TX only).
- The AC adapter is capable of 100 VAC - 240VAC 50/60 Hz. Plugs for universal compatibility for other countries other than US are available.

Using the Stylus

You may use the Handheld stylus like a mouse to navigate menus and select items on the Handheld touch screen.

Tapping: Tap the touch screen with the stylus to select or open an item. Tapping with the stylus is equivalent to using your mouse to click an item on your PC screen.

Dragging: Place the stylus on the touch screen and drag the stylus across the screen to select text and images. Drag the stylus down a list to select multiple items.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Task Bar and Start Menu

When you power on the Handheld, the *Task Bar* will appear at the bottom of the Handheld display.

Task Bar

The Task Bar at the bottom of the display contains the *Start* menu and other items. You can perform a variety of tasks by tapping your stylus on the corresponding Task Bar item.

Figure 6
Handheld task bar

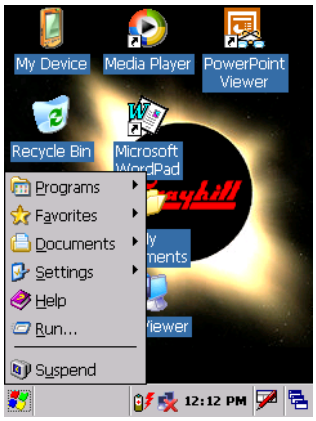

Figure 7
Handheld start menu

Start Menu

You can display the *Start* menu by tapping . The *Start* menu drops down, showing utilities such as *Programs*, *Favorites*, *Settings*, *Find*, and *Help* for the current screen.

Factory-Installed Programs

Certain programs are pre-installed for you on the Handheld. When you first power on the Handheld, the following programs will appear on the *Start* menu:

- ActiveSync
- Word Viewer
- Media Player
- Image Viewer
- Excel Viewer
- Internet Explorer
- Windows Explorer
- PDF Viewer
- PowerPoint Viewer

When the Handheld is connected to your regular computer via the Grayhill cable, you can install other programs on the Handheld. Note: Each program must be compatible with CE 5.0. Also on a hard boot the program will be lost and need to be re-installed.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Using the Keyboard

The Handheld provides a soft keyboard that lets you type letters, numbers, and symbols by tapping them with the stylus. When you tap a text entry field in a program, the soft keyboard is activate, as shown the figure below. Tap each letter, number, or symbol in the order you wish to enter them into the text field. The soft keyboard can also be accessed manually by tapping the keyboard icon in the lower right hand corner of the screen.

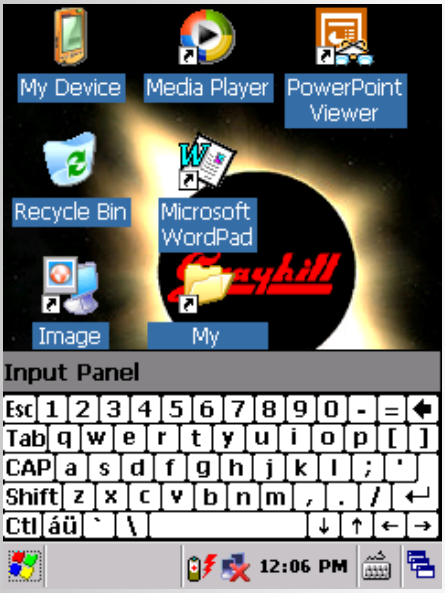

Figure 8
The Handheld soft keyboard

Special Keyboard Keys

Note that the soft keyboard also provides these special keys:

- Navigation keys to move within the text field
- Enter key
- Tab key
- All Caps key
- Shift key
- Control key
- Accent keys

To use the *Navigation*, *Enter*, and *Tab* keys, simply tap them. Tap the *All Caps*, *Shift*, or *Control* key, or one of the *Accent* keys, then tap the appropriate letter, number, or symbol. Just as on a normal keyboard, simply tap the *All Caps* key again to enter lower-case letters.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Changing Handheld Settings

Handheld settings, such as the brightness of the Handheld backlight, can be modified using *Windows Control Panel Applets*. Settings are stored in permanent flash memory and are maintained through a power reset or a hard reset.

To change a Handheld setting, tap ; then tap *Settings;* then tap *Control Panel*.

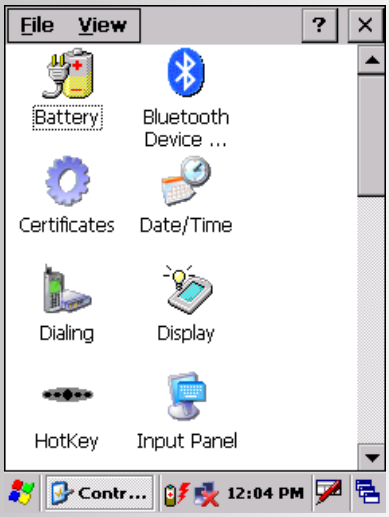

Figure 9
The Handheld control panel

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Field Swapping the Battery

The Handheld is designed to permit quick field swapping of the battery. It features ride-through technology that allows users a full 45 seconds to swap the battery without requiring a hard-boot of the system.

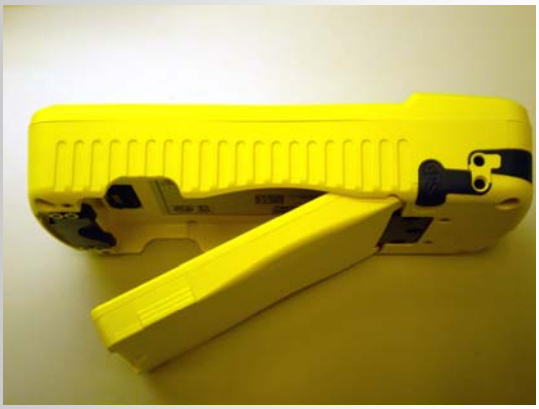

Figure 10
Handheld battery

Battery Charging and Usage Tips

The batteries that may be used with the handheld utilize *smart charging* and *smart gauging* technology. To see the status of the battery during discharge or charge, tap the Battery Icon in the lower portion of the display or simply open the Battery control panel applet. To avoid damaging the battery when the handheld is not in use for more than 24 hours, the battery should always be removed from the unit. Likewise, it should never be stored fully discharged or charged; rather, it is recommended that the battery be stored at roughly 50% capacity. Should the battery discharge completely and not be re-charged for long periods of time, its built-in recovery technology will minimize damage during re-charge. During this interval, the unit is in "Zero Volt Discharge" recovery mode and it may seem that the battery is taking longer than usual to charge. In fact, it may take several hours for the battery to recover and re-charge depending upon its state of discharge.

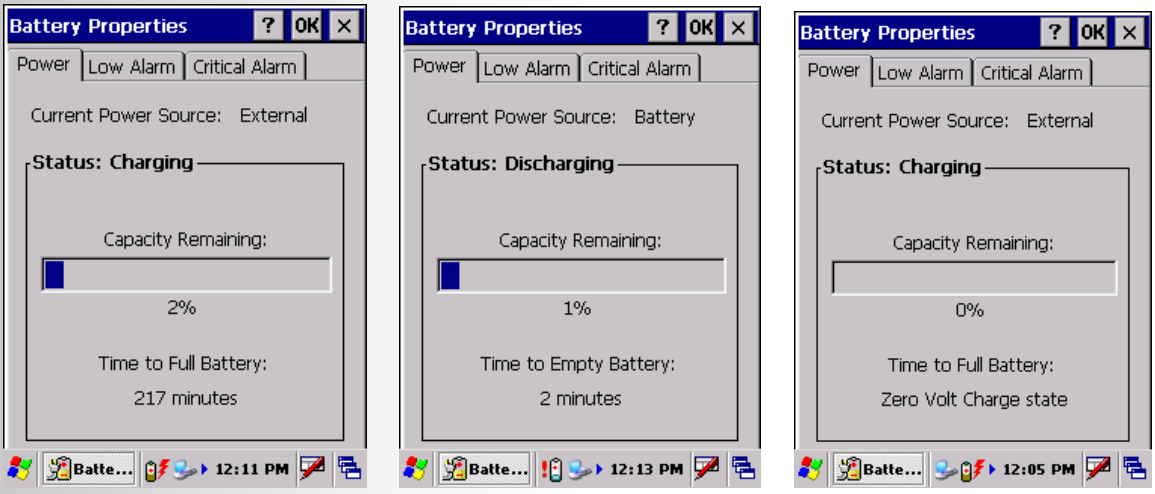

Figure 11
Stages of battery discharge & recovery

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Storing Data

There are multiple ways to store data content when using the Handheld. You can save content to:

- Handheld built-in flash memory
- Compact Flash or Secure Digital cards; slot is accessible via the top of the unit, under the access door.
- Your desktop or laptop, via a wired or wireless connection

Storing data via wired or wireless connectivity is addressed in subsequent sections.

Figure 12
Compact Flash/Secure Digital slot

Built-In Flash Memory

In addition to 64 MB of RAM, the Handheld provides 64 MB of non-volatile flash storage. Once content is saved to flash memory, it is permanently stored until a user deletes it. No loss of data stored in flash memory occurs even in the event of a hard reset.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Wired Communications

Wired data communications allow transfer of files for storage on your desktop or laptop; and installation of software components on the Handheld.

Installing ActiveSync on Your Computer

ActiveSync is pre-installed on your Handheld, but may not be installed on your desktop or laptop computer. Run a search for ActiveSync on your regular computer if unsure whether or not it is installed on the computer.

> **Please note:** ActiveSync must be installed on your regular computer before you can run the utility.

If the ActiveSync application is not present on your regular computer, install ActiveSync from the Handheld Product CD. You can also download the most current version of ActiveSync from
http://www.microsoft.com/windowsmobile/activesync/activesync45.mspx
Note that the ActiveSync installation steps may vary from the steps given here.

After starting Microsoft ActiveSync Setup on your regular computer, you will be asked for the folder in which ActiveSync should be installed. We recommend the default folder. Click *Next*.

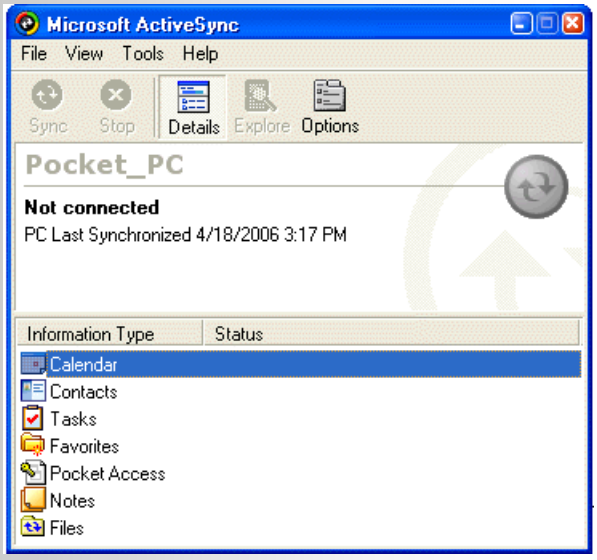

Figure 13
ActiveSync's Get Connected Dialog

Choosing the ActiveSync Partnership Type

ActiveSync offers two ways to connect from the Handheld to your computer. These different types of connections are called *partnerships*. When installing, the next ActiveSync dialog asks you to choose either the *Standard Partnership* or the *Guest Partnership*. There are advantages and disadvantages to each type of partnership (see Table, following page).

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

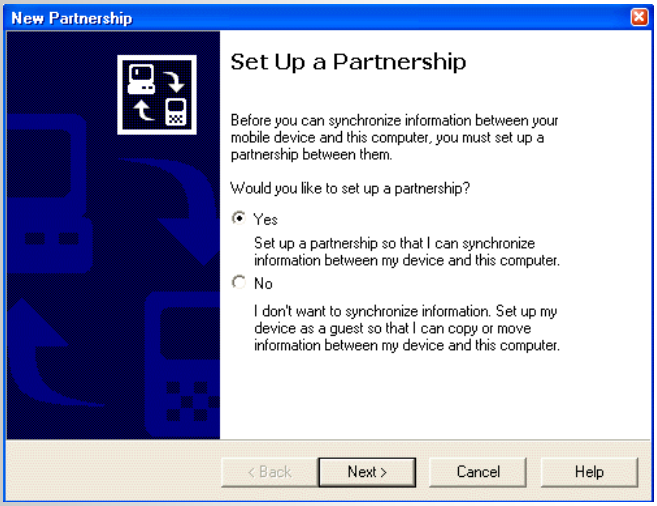

Figure 14
ActiveSync's Partnership dialog

Table 3: Partnership Advantages & Disadvantages

Connection Type	Advantages	Disadvantages
Standard Partnership	***Easier:*** Files on each computer are automatically synchronized. ***More Convenient:*** After the first time, you can connect from Handheld to PC via wired or wireless LAN. ***Faster:*** Subsequent connections are speedier, totally automatic. ***More Flexible:*** This partnership offers more file sharing options. ***In Sync:*** Your Handheld's clock is automatically set to the time on your regular computer's clock.	***Less Control:*** File updating is automatic; correct file updating is dependent on correct setup. ***Less Safe:*** Unintended file updates are possible. ***More Lengthy Setup:*** There are more questions to answer when first choosing this partnership. ***Doubly Wrong:*** If your regular computer's clock is wrong, your Handheld's clock will be wrong.
Guest Partnership	***More Control:*** Files are manually moved/copied between computers. ***Safer:*** Since you're in control of file synchronization, data cannot be inadvertently written over. ***Faster Setup:*** There are fewer questions asked when setting up this partnership type. ***Allows for Multiple Partners:*** This partnership is for use on shared or borrowed computers.	***Synchronization Less Certain:*** Since file updating is manual, there may be inconsistencies. ***Takes Longer:*** Manual updating requires attention to detail. ***Slower Connections:*** Each time you connect, ActiveSync will ask if you want a Guest or a Standard Partnership connection. ***Less Convenient:*** You cannot connect via wireless LAN.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Standard Partnership

If ease of connecting and storing data is what you want, choose the Standard Partnership to have your data automatically synchronized each time you connect using ActiveSync. You can establish one Standard Partnership with your regular computer, or you can establish two Standard Partnerships – perhaps one with your desktop computer, and one with your laptop.

Guest Partnership

Choose a Guest Partnership if you share a computer with someone else, or if you are borrowing someone else's computer. You can set up multiple Guest Partnerships. If you can't decide on a partnership type, establish a Guest Partnership while you evaluate the benefits of a Standard Partnership. Remember that, with a Guest Partnership, you can opt for a Standard Partnership connection each time you connect.

Indicating Your Partnership Choice

Once you have decided on the partnership type, click the checkbox next to the appropriate category, and click *Next*.

Choosing a Name for Your Handheld

Enter a unique name for your Handheld in the next dialog box, and click *Next*.

Selecting Information for Synchronization

If you have selected a Standard Partnership, the next dialog will ask you to indicate data type targets, such as the Calendar, Inbox, etc., that you would like automatically synchronized. Select the checkboxes next to data types you want ActiveSync to automatically synchronize. Deselect the checkboxes next to data types that are not to be automatically synchronized. To customize settings for each program, select the data type, then click the *Settings…* button. When finished, click *Next*.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Running ActiveSync

ActiveSync compares the data on your Handheld with the data on your PC, and then updates all locations with the most recent information. To run ActiveSync using the Grayhill Cable connection, follow these steps:

- Start ActiveSync on your regular computer.
- Connect the Grayhill Cable, with the Handheld installed inside it, to your PC using the USB cable.
- ActiveSync automatically establishes a connection. This may take several seconds.
- If the PC detects the device but does not connect the Grayhill ghusbsh.inf file may need to be installed.
  - To install the Then ActivSync connects you will be prompted to install a new driver.
  - Select the 'Install from a specific location' option and browse to the directory where you put the ghusbsh.inf
- With a Guest Partnership, ActiveSync will ask if you want to connect using your Guest Partnership or with a Standard Partnership. If you stay with a Guest Partnership:
- On your regular computer, open Windows Explorer and double-click the *Explore* icon to view the file structure on your Handheld.
  - In the *Explore* window, the Handheld file structure looks and acts like the file structure as shown in the *Windows Explorer* window on your PC.
  - Manually copy and paste files in between the two file structure windows.
- With a Standard Partnership, ActiveSync automatically synchronizes the data types you selected for synchronization, using any customized settings you chose.
- To change ActiveSync's data types or settings, click *Tools*, *Options* in the ActiveSync program running on your regular computer.
- Once synchronization has completed, open Windows Explorer and double-click the *Explore* icon to view the file structure on your Handheld in order to review the files that ActiveSync has automatically updated for you.

Disconnecting ActiveSync

To avoid connection problems, disconnect ActiveSync on your Handheld before closing ActiveSync on your regular computer:

- Tap the ActiveSync connection icon in the lower right corner of the *Today* screen.
- Tap *Disconnect* in the dialog that appears.
- Remove the USB cable from the Handheld and from your regular computer.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Wireless Communications

WiFi (802.11x)

802.11b/g is an available option on the Handheld. To attain a wireless Internet connection, double-click on the Network Icon at the bottom of the screen. The figure below shows this Icon with a Red X on it.

Figure 15
Network Icon at bottom of screen

BlueTooth

Bluetooth is an available option on the Handheld. To activate Bluetooth on the device, click on the *Bluetooth Device Properties Icon* in the *Settings>Control Pane.* When the device is trying to connect to an active device, click *Scan Device*. The device name will appear in the *Untrusted* box. Click right arrow to move it to the *Trusted* box. To activate, click on the device and click *Active*. A check mark will appear next to active.

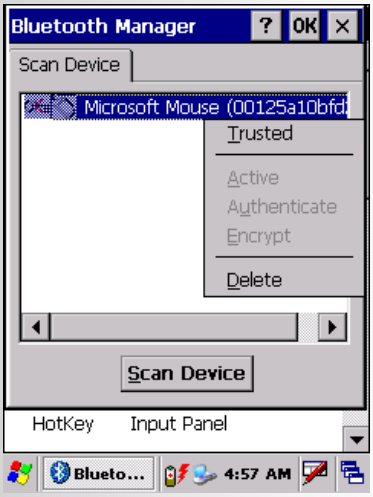

Figure 16
Moving a device to the *Trusted* box

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Compass and Barometer

A compass and barometer is an available option. A simple test application is available. Compass and barometer application of the Handheld are accomplished by selecting *BarComp* located in Mydevice>Windows>BarComp.exe

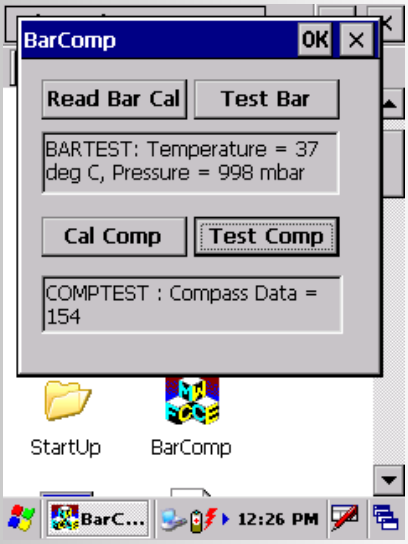

Figure 17
Testing the compass and barometer

GPS

GPS is available on the Handheld, which includes both an internal antenna and an MCX port for connecting an external antenna. Communication to the GPS is accomplished with a custom application on COM 3 at 4800 Baud with standard NMEA messages. Refer to SDK for more information.

Figure 18
External connection port

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Regulatory Information

An Grayhill Industrial Handheld Computer complies with Title 47, Part 15, Section 247 of the FCC Rules for radio communication devices.

FCC Approved (USA)

FCC IDs: Industrial Handheld Computer – NMAM1YY10232
– NMAM1YY10233

Industry Canada Industrie Canada

Industry Canada Certified # : 2972A-M1YY10232

: 2972A-M1YY10233

FCC Notices

This device has been certified by the FCC for use with other products without any further certification (as per FCC section 2.1091). Changes or modifications not expressly approved by Grayhill could void the user's authority to operate the equipment as well as the warranty.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.
Increase the separation between the transmitter and the receiver.
Connect the transmitter into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or ask an experienced radio/TV technician for help.

This wireless probable device has been tested in accordance with the measurement procedures specified in FCC OET 65 SUPPPLEMENT C and IEEE Std. 1528-(July 2001), and has been shown to be capable of compliance for localized specific absorption rate *SAR) for uncontrolled environment/general population exposure limits specified ins OET 65.

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved

Service Information

For service and repair information, please contact:

Grayhill, Inc.
561 Hillgrove Avenue

LaGrange, IL 60525
Phone: (708) 354-1040
Fax: (708) 354-2820

© 2007 Grayhill, Inc. | Proprietary Content | All Rights Reserved