Dolphin 6000 Mobile Computers

with Windows Mobile®6.5

Users Guide

Preliminary

Disclaimer

Trademarks

Patents

Other Trademarks

Conventions

The touch panel display can be activated by using the stylus (included with the device) or a finger. To activate the display, open a file or select a menu, use the bottom tip of the stylus to Tap the touch panel display or gently press the touch panel with your finger.

Safety Information

Working with GPS

Dolphin 6000 HomeBase

Safety Information

Dolphin 6000 mobile computers meet or exceed the requirements of all applicable standards organizations for safe operation. Read the following guidelines carefully before using the mobile computer.

Label Locations
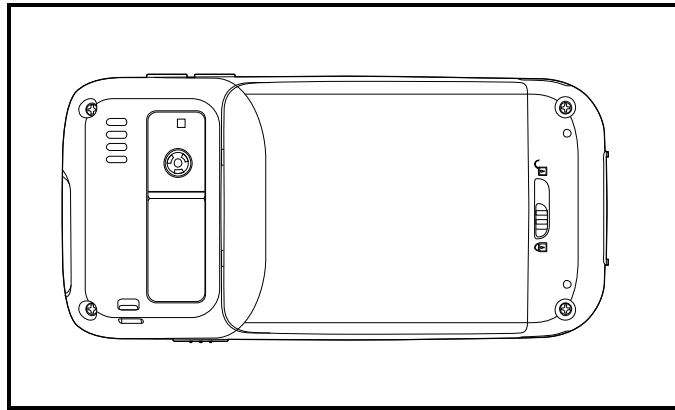
Figure 1-1. Laser Safety Label Location

Laser Safety Label

If the label in figure 1-2 indicates the product contains an engine with a laser light:
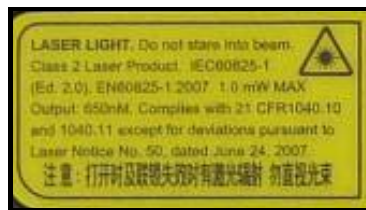
Figure 1-2. Laser Safety Label

Laser Eye Safety Statement

This device has been tested in accordance with and complies with IEC60825-1 (Ed. 2.0), EN60825-1: 2007. Complies with 21 CFR 1040.10 and 1040.11, except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. LASER LIGHT, DO NOT STARE INTO BEAM. CLASS 2 LASER PRODUCT, 1.0 mW MAX OUTPUT: 650nM.

⚠ **WARNING:**

> Use of controls or adjustments to performance or procedures other than those specified herein may result in hazardous radiation .

LED Safety Statement

The LED output on this device has been tested in accordance with IEC60825-1 LED safety and certified to be a Class 1 LED device.

The maximum power outputs for the:

- Visible laser diode @ 650nm, Power 1mW

Operating Temperature

The recommended operating temperature for the device is -10°C - 50°C.

RoHS Chart

有毒有害物质名称及含量的标识格式 (Names and Content of Hazardous Substances or Elements)						
部件名称 (Parts Name)	有毒有害物质或元素 (Toxic and Hazardous Substances or Elements)					
	铅(Pb)	汞(Hg)	镉(Cd)	六价铬(Cr^{6+})	多溴联苯(PBB)	多溴二苯醚(PBDE)
成像式条码阅读器 (Imager)	x	o	o	o	o	o
印刷电路板 (PCB)	x	o	o	o	o	o
外壳 (Housing)	o	o	o	o	o	o
连线 (Cables)	x	o	o	o	o	o
液晶显示器 (LCD)	x	o	o	o	o	o
电池 (Battery)	o	o	o	o	o	o
液晶显示器框架(LCD frame)	o	o	o	o	o	o
键盘 (Keypad)	o	o	o	o	o	o
o: 表示该有毒有害质在该部所有质材料的含量在 SJ/T11363-2006标准规定限量要求下 (Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in China's SJ/T11363-2006.) x: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求 (Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part is above the limit requirement in China's SJ/T11363-2006.)						

Figure 1-3. China RoHS Chart

Agency Information

UL and cUL Statement

UL (Underwriters Laboratories) and cUL (Canadian Underwriters Laboratory) listed: UL60950-1 and CSA C22.2 No. 60950-1-03.

Approvals by Country

Table 1-1. Approvals by Country Table

Country	EMC, Radio, & SAR	Safety
U.S.A.	FCC Part 15, Subpart B FCC Part 15, Subpart C, 15.247 FCC Part 22H FCC Part 24E FCC SAR OET 65 Supplement C	UL60950-1
Canada	ICES-003 (Class B) RSS 132 RSS 133 RSS 210	cUL60950
European Community/CE	EN300328 EN55022 EN55024 EN301489-1 EN301489-7/24 EN301489-17 EN300328 3GPPTS 51.010-1 EN301511 EN50360 EN50361 EN50371 EN50392 IEC6220-1 and IEC6220-2 EN300440	EN/IEC60950-1 EN/IEC60825-1
China	SRRC	GB4943
	MII	
	CCC	
Brazil	Anatel	
Mexico	COFETEL and NOM	NOM-019-SCFI-1998
AUS/NZ	A Tick (GSM) and Ctick (WLAN, BT)	

This Class 2 Laser Product is in accordance with the requirements of IEC 60825-1 Ed. 1.2 Clause 6.2(a).

R&TTE Compliance Statement

Dolphin 6000 RF devices (802.11 b/g, Bluetooth and/or GSM) are in conformity with all essential requirements of the R&TTE Directive (1999/5/EC).

This device is marked with CE0682 in accordance with the Class II product requirements specified in the R&TTE Directive. This device complies to 2006/95/EC Low Voltage Directive when supplied with the recommended power supply. The manufacturer shall not be liable for use of our product with equipment (i.e., power supplies, personal computers, etc.) that is not CE marked and does not comply with the Low Voltage Directive.

The equipment is intended for use throughout the European Community; PAN European Frequency Range: 2.402–2.480 GHz. Restrictions for use in France are as follows:

- Indoor use: Maximum power (EIRP*) of 100 mW for the entire 2.400–2.4835 GHz

- Outdoor use: Maximum power (EIRP*) of 100 mW for the 2.400–2.454 GHz band & maximum power (EIRP*) of 10 mW for the 2.454–2.483 MGHz band.

Dolphin 6000 RF Device

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.

- This device must accept any interference received, including interference that may cause undesired operation.

This device 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 device 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. There is no guarantee that interference will not occur in a particular installation. If this device causes harmful interference to radio or television reception, which can be determined by turning the device 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 equipment and receiver.

- Connect the device into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

If necessary, consult the dealer or an experienced radio/television technician for additional suggestions. For additional information, refer to *Something About Interference,* available at the FCC local regional offices. Our company is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by our company. The correction is the responsibility of the user. Use only shielded data cables with this system.

NOTE:
In accordance with FCC 15.21, unauthorized changes or modifications could void the user's authority to operate the equipment.

FCC : IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

FCC+IC Exposure :

+ **IMPORTANT:**

FCC Radiation Exposure Statement:

The product comply with the US/Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or reduce output power if it doesn't affect the transmission/receiving quality.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IC (French) :

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

+ **IMPORTANT:**

(Pour l'utilisation des appareils portables)

Déclaration d'exposition aux radiations:

Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé.

Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.

Canadian Compliance

This Class B digital device complies with Canadian ICES-003. Operation is subject to the following two conditions:

- The device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation.

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. The device (or its transmit antenna) installed outdoors is subject to licensing.

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.

For European Community Users

The manufacturer complies with Directive 2002/96/EC of The European Parliament, and of The Council of 27 January 2003 on waste electrical and electronic equipment (WEEE).

Waste Electrical and Electronic Equipment

⚠ CAUTION:

This device requires the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment, if not properly disposed.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, it is encouraged to use the appropriate procedures for product disposal. Those procedures will reuse or recycle most of the materials of the product being disposed of.

The crossed out wheeled bin symbol 🗑 indicates the product should not be disposed of along with municipal waste and encourages the appropriate procedure for device disposal.

If more information is needed on the collection, reuse, and recycling systems, contact the local or regional waste administration.

Electrically Powered Devices

Most manufacturers of medical devices adhere to the IEC 601-1-2 standard. Pacemakers and hearing aids are considered electrically powered devices. This standard requires devices to operate properly in an EM Field with a strength of 3V/m over a frequency range of 26 to 1000MHz. The maximum allowable field strength emitted by the Dolphin 6000 device is 0.3V/m according to Subpart B of Part 1 of the FCC rules. The RF from the Dolphin 6000 device has no effect on medical devices that meet the IEC specification.

Microwaves

The radio in the Dolphin 6000 RF device operates on the same frequency band as a microwave oven. If a microwave is used within range of the Dolphin 6000 RF device, a performance degradation in the wireless network may be noticeable. The microwave and wireless network will continue to function.

Getting Started

Out of the Box

Verify that the carton contains the following items:

- Dolphin 6000 mobile computer (the device)
- Main battery pack (5.7V Li-ion)
- Quick Start Guide

⇒ **NOTE:**

　　　If accessories were ordered, make sure they are included with the order.

　　　Keep original packaging to return device for service if required.

Install Main Battery Pack

The Dolphin 6000 is shipped with the battery packaged separately from device. Perform the following to install main battery:

1. Slide latch to unlock battery door.
2. Open battery door.
3. Install battery into battery well.
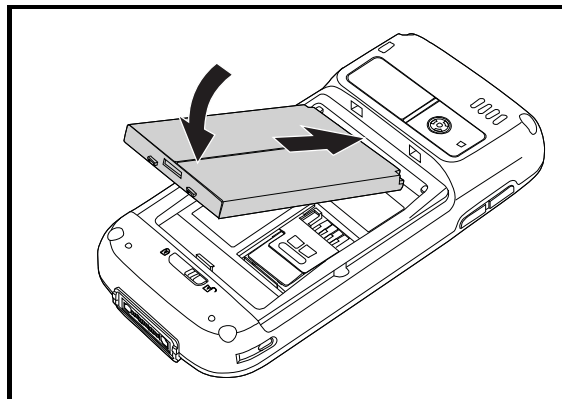
Figure 2-1.　Inserting Battery

4. Install battery door.

⇒ **NOTE:**

　　　Install battery door before powering device.

Charge the Batteries

Power for Dolphin 6000 device comes from main battery pack, accessed from back panel.

Before Initial Use

Devices are shipped with both batteries discharged of all power. Initial charging time for main battery pack is 4 hours. Insert the device into the cradle to charge.

Charging Using the Communication Cable

1. Connect USB to I/O connector on device.
2. Plug power cord into power adapter.
3. Plug power adapter cable into power connector on COMM cable.
4. Plug COMM cable into appropriate port on host device.
5. Plug power cord into standard wall outlet. LED on front of device flashes and illuminates red when device starts initializing boot process.
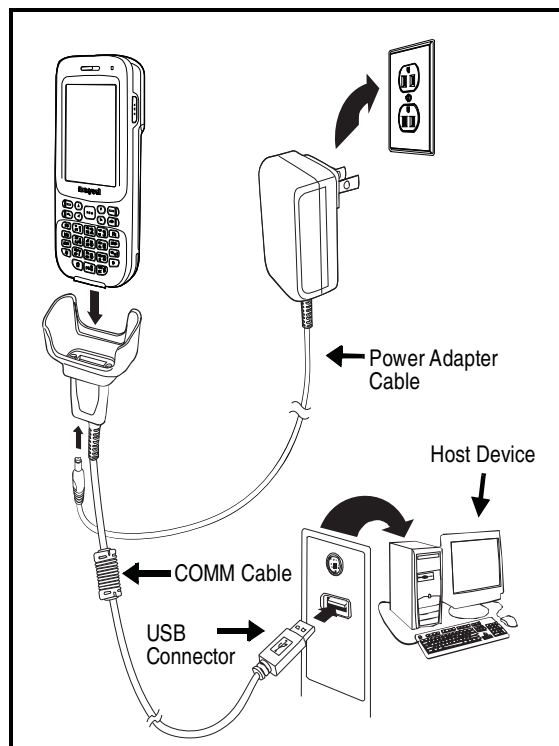
Figure 2-2.   Charging Connections

Boot the Device

The device boots when power is applied and the PWR button is pressed.

⚠ CAUTION:

Do not press any keys or interrupt the boot process. When boot process is complete, Today screen appears, and device is ready for use.

⇛ NOTE:

Today screen appears several times during boot process. Wait several seconds before using device to make sure boot process is complete.

Using Touch Panel Display

The touch panel display is activated by using stylus (included with the device) or a finger. To activate display, open a file or select a menu. Use bottom of stylus to tap touch panel display or gently press touch panel with a finger.

Today Screen

After the device initializes the first time, the Today screen appear.

Figure 2-3. Today Screen

Navigation Bar

The Navigation bar is found on top of the screen. The active program and current time are shown.

Figure 2-4. Navigation Bar

Command Bar

The Command bar is found on bottom of the screen.

Figure 2-5. Command Bar

Navigation Bar Icons

Table 2-1.   Icons Table

Indicator	Meaning
	Synchronizing data
	The device could not synchronize data with the workstation via ActiveSync
	New e-mail
	New text message
	New voicemail
	New instant message
	Vibrate on
	Ringer off
	Speakerphone on
	Voice call in progress
	Calls are forwarded
	Call on hold
	Missed call
	Data call in progress
	Battery has a full charge
	Battery has a high charge
	Battery has a medium charge
	Battery has a low charge
	Battery has a very low charge and requires charging
	Device is running on external power. If a battery pack is installed, battery is charging in the background
	The device is not connected to external power. A battery is installed, but is defective; its charge level cannot be measured

Table 2-1.   Icons Table (Continued)

Indicator	Meaning
	No SIM card is installed
G	GPRS available
	GPRS connecting
	GPRS in use
E	EDGE available
	EDGE connecting
	EDGE in use
	Radio is off
	The radio is not connected to a network
	The radio is connected. The bars indicate signal strength
	No radio signal
	The device is searching for a signal
	Wi-Fi is on, but device is not connected
	Wi-Fi data call
	Pending alarm
	Bluetooth

Set Time Zone, Time, and Date

1. On the Today screen, tap the time and date section (A).

Figure 2-6.   Time and Date

The Clock & Alarms menu will open.

2. Select *Time* tab to set system clock.
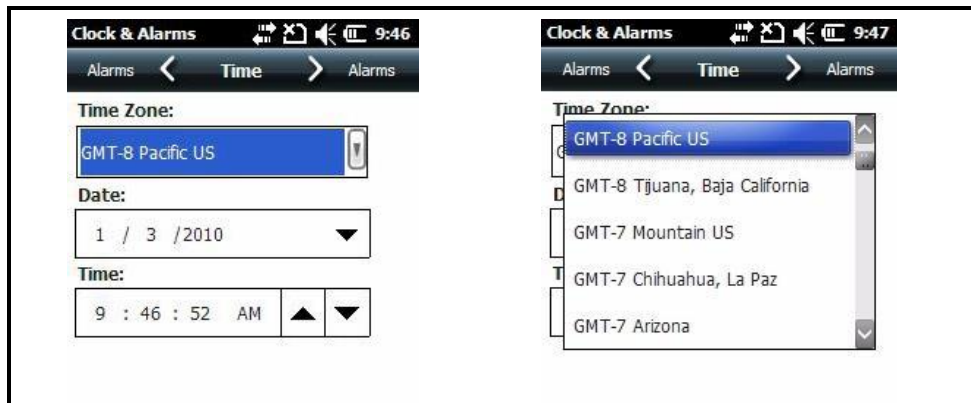
Figure 2-7.   Clock Settings

3. Tap Time Zone box to open drop-down menu.
4. Set correct time zone from drop-down menu.
5. Set correct time and date in remaining fields and tap *OK* to save.

Pop-Up Menus

Pop-up Menus allow a choice of action for a selected file.

1. Tap and hold the stylus on the action to open the pop-up menu.
2. When menu appears, lift the stylus, and tap the action desired.

Figure 2-8.   Pop-Up Menu

3. Tap outside the menu to close without performing an action.

Selecting Programs

1. Tap the Windows Icon to view the Start Menu.
2. Open the desired program by tapping on the program icon.
3. Move an icon to top of the Start Menu by tapping then holding the stylus on the icon, while dragging the icon to the top of the Start Menu.
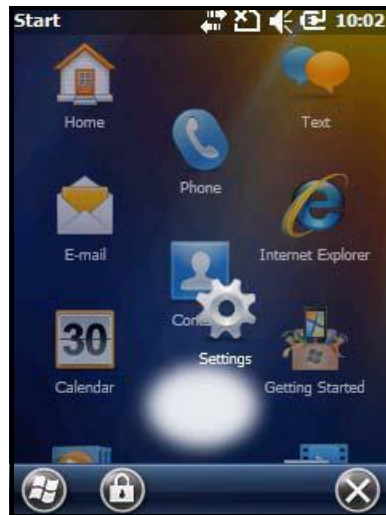
Figure 2-9.   Moving an Icon

File Explorer

Use File Explorer to find and move files.

1. Tap ⊞ > *File Explorer*.
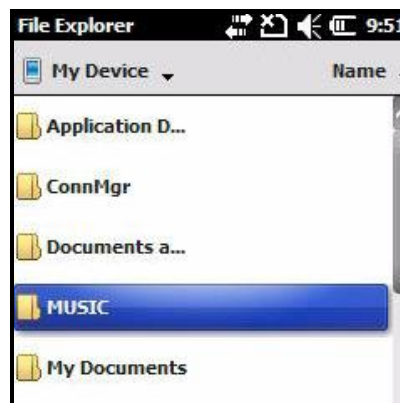
Figure 2-10.   File Explorer Menu

2. Locate file.

3. To move file, hold the stylus on the file to bring up the menu shown in Figure 2-11. Tap **Cut** or **Copy** on menu.

Figure 2-11.   Cut or Copy

4. Navigate to the desired destination.

5. Hold stylus in the blank area of the window.

⇒ **NOTE:**

　　If there is no blank area in the window go to step 7.

6. Tap **Paste** on menu (Figure 2-12).

Figure 2-12.   Paste

7. Tap Menu on Command bar. A pop-up menu will appear (Figure 2-13).

Figure 2-13.   Paste Procedure

8.   Tap down arrow to view Edit.

9.   Tap *Edit > Paste*

Search Phone

 Use the Search Phone application to quickly find information.

1.   Tap ⊞ *> Search Phone*.
2.   To find a file, type name of file in Search For box.

3.   Select type of data in Type box

4.   Tap *Search* on the Command bar.

5.   Select *Larger than 64 KB* in the Type box drop-down menu to find large files.

Hardware Overview

Standard Configurations

WLAN, WPAN, WWAN with GPS and Camera

- WLAN- Wireless Local Area Network
- WPAN- Wireless Personal Area Network
- WWAN- Wireless Wide Area Network

The following is a list of configuration features:

- Microsoft Windows Mobile ® 6.5 Professional
- MTK MT6516 ARM9 416MHz Processor
- 256MB SDRAM X 512MB Flash
- 29-Key Numeric Keypad
- 5.7V Li-ion rechargeable battery pack
- Adaptus Imaging Technology: IS4813 single line laser scan engine
- 802.11b/g, Bluetooth, and GSM/GPRS/EDGE
- GPS
- 3 megapixel auto focus color camera

Peripherals

HomeBase

The Dolphin 6000 HomeBase provides charging and communication functionality. It supports both RS232 and USB communications, that enables the device to interact with the majority of PC-based enterprise systems.

The device also contains an auxiliary battery well that can charge a spare Li-ion battery.

The following is a list of the HomeBase features:

- RS232 (RX, TX, CTS, RTS), D-sub connector
- USB Client, Mini USB connector
- DC-IN
- Separate battery charger.

NOTE:
USB cable must be used within 125 cm to guarantee transmission quality.

For more information, refer to Dolphin 6000 HomeBase.

Accessories

Communication/Charging Cables

The Dolphin 6000 communication/charging cable kit is an all-in-one solution for mobile applications. The cable kit performs the following:

- Powers the device
- Charges the system Main Battery
- Communicates with host or peripheral devices without a cradle
- Supports USB communication
- Functions with U.S., E.U., U.K., China, Brazil, Mexico, Australia and New Zealand power cords. Refer to Approvals by Country Table.

⇒ **NOTE:**
The system is available with U.K or European power cord.

Li-ion Battery Pack

The 5.7V Li-ion rechargeable battery pack provides the main power for the device.

Vehicle Charging Cable

The vehicle charging cable for the Dolphin 6000 is an optional accessory.

USB Client Holder Cable

The USB Client Holder Cable includes the following:

- USB Client
- DC-IN

Front View
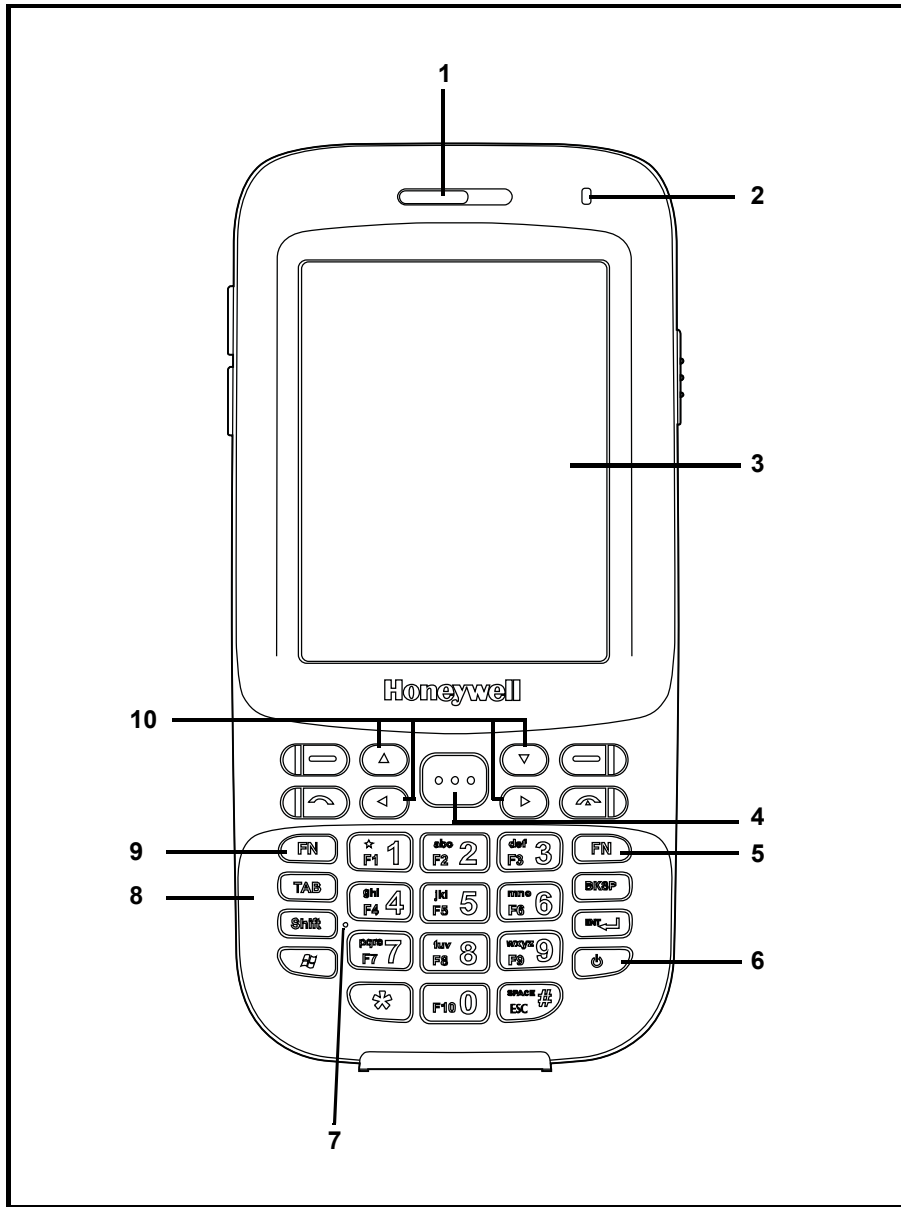
Figure 3-1. Front View

Table 3-1.   Front View

No	Item	Description
1	Front Speaker	Receives voice calls when using a handset. Refer to Voice Communication.
2	Indicator Light Emitting Diode (LED)	Flashes and illuminates during resets and scanning/imaging. Can be programmed by various software applications.
3	Touch Panel Display	A color 2.8 inch liquid crystal display (LCD) touch panel is covered with an industrial, protective lens The video graphic array (QVGA) display resolution of 240 X 320.
4	SCAN Key	Activates the scanner/imager. Is a system wakeup control for the device.
5	Blue FN Key	Switches the numeric keypad to an alpha/numeric mode or to F1-F10 function keys mode.
6	Power Key	Puts the device in the Suspend Mode or wakes the device from the Suspend Mode. Refer to Suspend Mode.
7	Microphone	Provides audio input for the handset and speakerphone voice calls. Refer to Voice Communication.
8	Recessed Keypad	The device has a 29-key alpha/numeric keypad. For more information refer to Using the Keypad.
9	Orange FN Key	Switches the numeric keypad from lower case or upper case modes.
10	Navigation Keys	When selected, move through the software programs. Refer to Using the Navigation Keys.

Base View
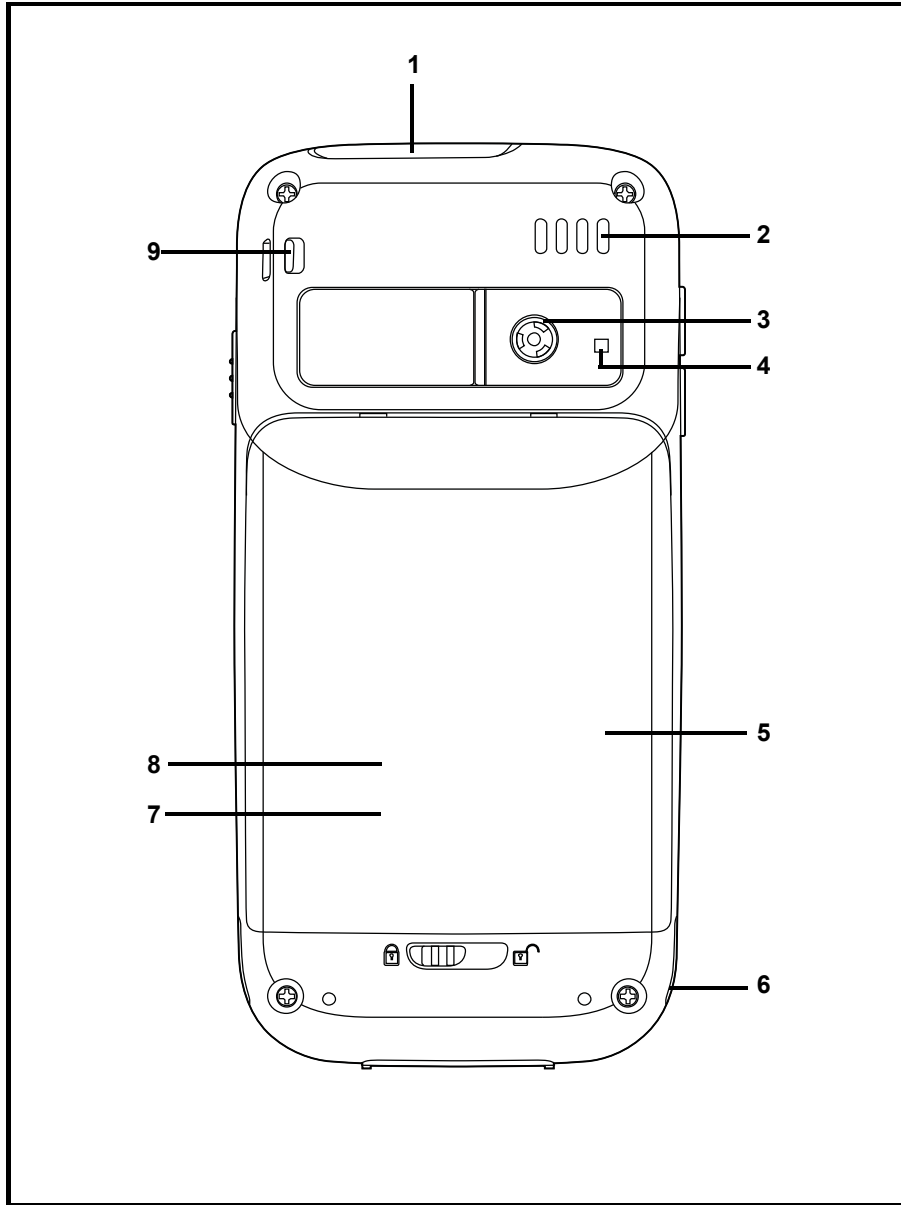
Figure 3-2.   Base View

Table 3-2. Base View

No	Item	Description
1	Image/Scan Engine Window	The image engine reads and decodes linear, stacked linear (e.g., PDF417), and 1D matrix bar code symbologies. For greater accuracy contains a laser aimer. Refer to Using the Scan Image Engine.
2	Rear Speaker	Provides audio signals when scanning bar code labels or entering data. Supports playback for wave and MP3 files, software mixer, and Speakerphone for WWAN/GSM audio and VoIP. The operating frequency range is 1000-4000Hz at >86 dB.
3	Color Camera	Provides easy picture caption with Automated Camera Control (ACC). Additional features include automated picture profiles and an Application Programming Interface (API).
4	Camera Flash	Can be used and is controlled by the devices color camera.
5	Battery Door	Secures the Li-ion Battery Pack in the device battery well. Refer to Battery Pack.
6	Fastener for the Stylus Tether	A coiled, elastic cord that tethers the stylus to the device
7	Subscriber Identity Module (SIM) Card Socket	Connection for SIM Card use. Refer to Installing a SIM Card. **NOTE:** SIM Card is located underneath the battery door.
8	Memory Card Socket	Provides the user with an option to expand the device's memory capacity. Supports industry-standard MicroSD and MicroSDHC memory interfaces. Refer to Memory Card Installation. **NOTE:** Memory Card Socket is located underneath the battery door.
9	Lanyard Slot	Attach point for lanyard

Left View
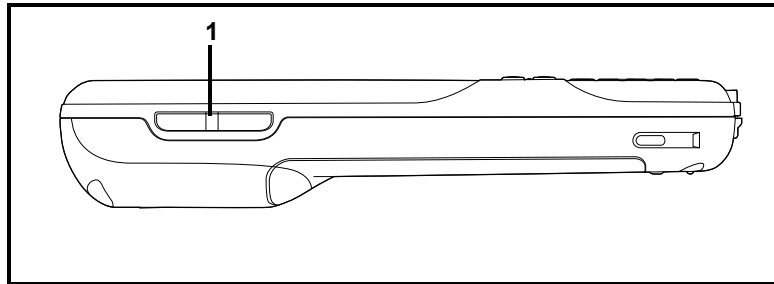
Figure 3-3.   Left View

Table 3-3.   Left View

No	Item	Description
1	Volume Control Button	Used to raise or lower the device volume.

Right View
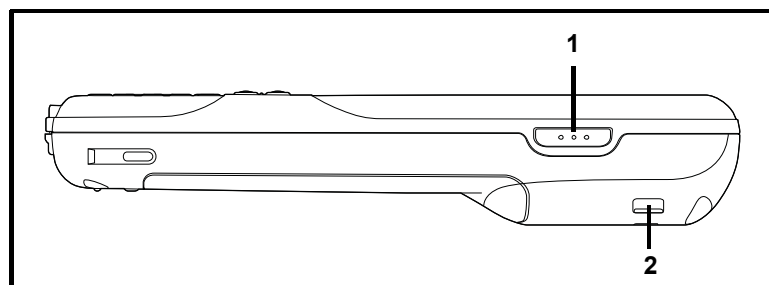
Figure 3-4.   Right View

Table 3-4.   Right View

No	Item	Description
1	Right Button	Triggers the scanner/imager. Can be reassigned to launch applications or execute commands.
2	Lanyard Slot	Attach point for lanyard

Memory Card Installation

Perform the following to install the Memory Card:

1. Power down device.
2. Unlock Battery Door.
3. Remove Battery Door and Battery.
4. Slide latch toward top of device to unlock SIM card.
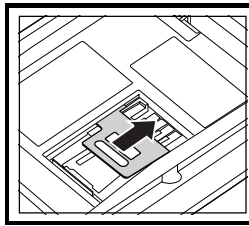
Figure 3-5.   SIM Card latch

5. Lift SIM card latch to reveal Sim card.
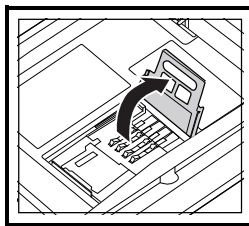
Figure 3-6.   SIM Card latch

6. Remove Sim card and reveal memory card latch.
7. Unlock memory card latch by sliding latch away from serial number label located in battery well.
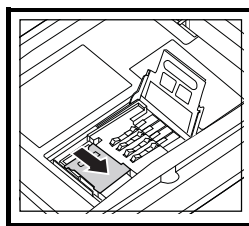
Figure 3-7.   Memory Card latch

8. Lift latch up to expose MicroSD or MicroSDHC socket.
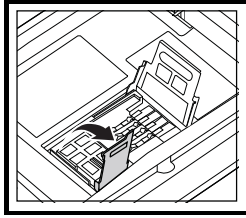
Figure 3-8.   Memory Card socket

9.   Insert microSD or microSDHC card into microSD or microSDHC socket.
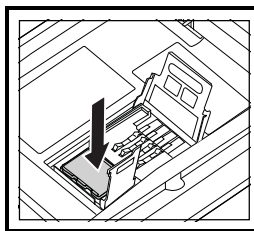
⇛ **NOTE:**

Make sure interface on memory card is connected to interface in the socket.

10. Align corner on card with corner of socket.

11. Close memory card latch.
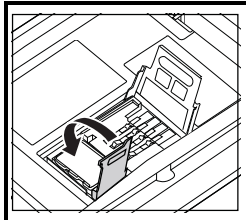
Figure 3-9.   Memory Card latch

12. Lock memory card latch by sliding latch toward serial number label.
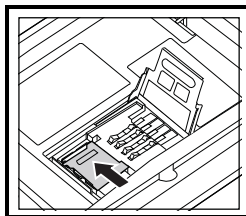
Figure 3-10.   Memory Card latch

13. Insert SIM card into SIM card socket.

14. Close SIM card latch.
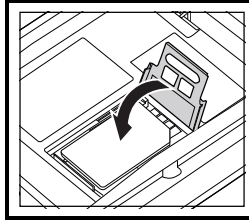
Figure 3-11.   SIM card latch

15. Lock SIM card latch by sliding latch up towards bottom of device.
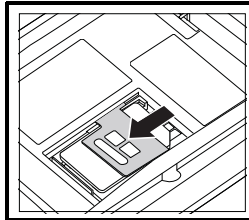
Figure 3-12.   SIM card latch

16. Install Battery
17. Install and lock Battery Door.
18. Power on device.

NOTE:
> It is recommended to format all SD cards before initial use.

Installing a SIM Card

Perform the following to install the Sim card:

1. Power down device.
2. Unlock Battery Door.
3. Remove Battery Door and Battery.
4. Slide latch toward top of device to unlock SIM latch if applicable.
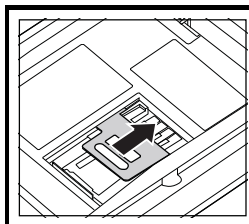
Figure 3-13.   SIM Card latch

5. Lift SIM card latch

6. Insert SIM card into SIM card socket.

7. Close SIM card latch.
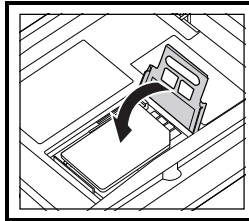
Figure 3-14. SIM card latch

8. Lock SIM card latch by sliding latch up towards bottom of device.
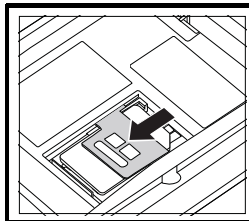
Figure 3-15. SIM card latch

9. Install Battery

10. Install and lock Battery Door.

11. Power on device.

NOTE:

It is recommended to format all SD cards before initial use.

Bottom Rear Panel

Figure 3-16 and Table 3-5 provide a description of the 16 pin I/O connector.
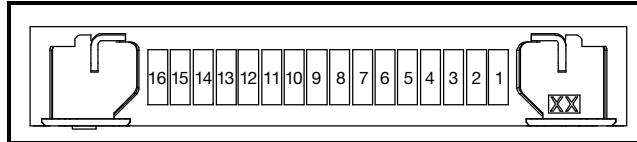
Figure 3-16.   I/O Connector

Table 3-5.   Bottom Rear Panel

Pin	Description
1	GND
2	VBUS
3	USBC-
4	USBC+
5	UART4_RTS
6	UART1_RX
7	UART1_TX
8	GND
9	UART4_CTS
10	GND
11	GND
12	Cradle_Detect
13	UART4_TX
14	UART4_RX
15	VCC
16	VCC

I/O Connector

The I/O connector provides the following:

- Support DC charging of device and battery
- Facilitate RS232 serial communications interface, including RX, TX, RTS, CTS and GND signals
- USB interface to a host workstation via cradle or communication table

All Dolphin 6000 peripherals are designed to work exclusively through this connector. The I/O connector supports RS232 and USB communication. For RS232, the maximum communication speed is 115.2 Kbps with seven baud rate settings. For USB, communication speed is up to 12 Mbps.

Using the Touch Panel

When using the device touch panel, it is recommended to use screen protectors and proper stylus. Screen protectors are meant to defend the touch panel when using high to medium level user interaction with the device through the touch panel.

For general use, it is suggested to replace the screen protector every thirty (30) days. Cycles may vary according to the average level of the usage of the touch panel.

Battery Pack

The 5.7V, 12W hour Li-ion Battery Pack is the primary power source for the Device. The Li-ion Battery is designed to operate in a temperature range of -10°C to 50°C (14°F to 122°F).

Charging Options

If the battery is installed in the device, it will be charged if the device is in the HomeBase. If the battery is not installed in the device, it may be charged by placing it in the battery well. Use the Dolphin 6000 HomeBase (Refer to Dolphin 6000 HomeBase).

Charging Time

The Li-ion Battery Pack requires 4 hours to charge completely before initial use.

Storing Batteries

To maintain optimal battery performance, follow these storage guidelines:

- Avoid storing batteries outside the specified range of -4° to 104° F (-20° to 40°C) or in extremely high humidity.
- For prolonged storage, do not keep batteries stored in a charger that is connected to a power source.

Battery Pack Use and Disposal

The following are guidelines for the safe use and disposal of batteries:

- Follow local regulations for battery disposal.
- Replace defective batteries immediately. Using a defective battery could damage the Dolphin 6000 device.
- Do not use a battery in any other manner outside its intended use in Dolphin 6000 device and peripherals.
- Excessive discharge damages a battery. Recharge the battery when the device indicates low battery power.
- Battery life is limited. Replace after battery is unable to hold an adequate charge.
- If the battery or charger are not working properly, replace as soon as possible.

Managing Battery Power

Default Critical and Low Battery Points

When the device is running on battery power (as opposed to external power), warnings are displayed when the battery reaches critical and low battery points.

Checking Battery Power

In order to check the battery power:

1. Navigate to **Start** > **Settings** > **System > Power**.
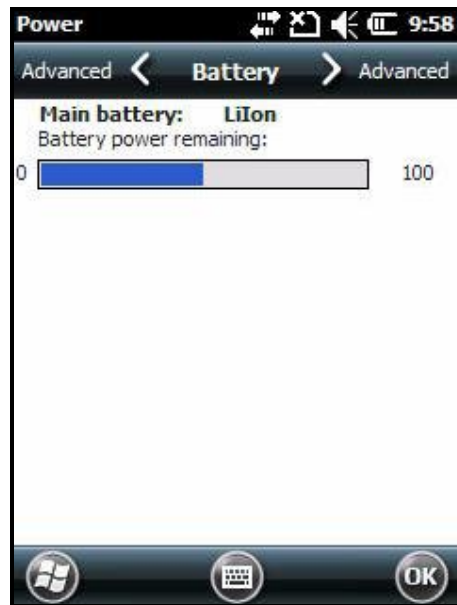
Figure 3-17.   Power Menu

Resetting the Device

Two options to reset the system are:

- Soft Reset
- Hard Reset.

Soft Reset (Warm Boot)

Soft Reset clears program memory and keeps storage memory. A Soft Reset can be implemented through the System API.

Hard Reset (Cold Boot)

A Hard Reset is defined as the toggling of a hardware reset input signal to a processor and other system hardware components. It does not flush or attempt to preserve buffered file system contents. A Hard Reset can be implemented through the System API.

In order to perform a Cold Boot:

1. Press and hold the power button for 3 seconds. The pop-up in Figure 3-18 appears.

Figure 3-18.   Hard Reset

Suspend Mode

The device goes into the Suspend Mode automatically when inactive for a period of time. To set a time interval, select `Advanced` in the Power System Setting menu. Refer to Power.

To set the device into Suspend Mode, press the **Power** key and the screen goes blank.

⟹ **NOTE:**

> If is not on the Today screen, press the **Power** key to return to Today screen and press the **Power** key again to set device into Suspend Mode.

To wake the device from Suspend Mode, press the Power key.

Hardware Maintenance

When needed, clean the image engine window and the LCD display with a clean, non-abrasive, lint-free cloth. The device can be cleaned with a damp cloth.

Hardware Overview

Using the Scan Image Engine

Overview

The barcode engine in the Dolphin 6000 is the Honeywell IS4813.

Angled Imaging

The scan engine view of field is 54 degrees.

Image Engine Specifications

Table 4-1. Depth of Field vs. Minimum Bar Code Element

Bar Code Element Width			Depth of Field* (In the Field of View)		
			Start (Frm Engine Face)	End (Frm Engine Face)	Total
1D	.13 mm	5.2 mil	70 mm (2.75")	95 mm (3.75")	25 mm (1.00")
	.19 mm	7.5 mil	57 mm (2.25")	171 mm (6.75")	114 mm (4.50")
	.26 mm	10.4 mil	50 mm (2.00")	210 mm (10.00")	160 mm (6.25")
	.33 mm	13.0 mil	50 mm (2.00")	254 mm (10.00")	204 mm (8.00")
	.49 mm	19.5 mil	75 mm (2.95")	300 mm (11.81")	225 mm (8.86")

* For non-decode IS4813 and IS4815 engines, depth of field data is for reference only. Actual values may vary depending on environmental conditions, host hardware, and decoding software.

Depth of field data was measured at 25°C under typical indoor lighting. Performance may vary depending on testing conditions.

Laser Specifications

The maximum power output for each diode is:

- Illumination LED: 194.0 uW

Supported Bar Code Symbologies

Table 4-2. Symbology List

Symbology Type	Symbology Name
1D Symbology	UPC A
1D Symbology	UPC E
1D Symbology	EAN 8
1D Symbology	EAN 13
1D Symbology	BOOKLAND EAN
1D Symbology	CODE 128
1D Symbology	GS1 128 (EAN 128)
1D Symbology	ISBT 128
1D Symbology	CODE 39
1D Symbology	TRIOPTIC CODE 39
1D Symbology	CODE 93
1D Symbology	CODE 11
1D Symbology	INTERLEAVED 2 OF 5
1D Symbology	MATRIX 2 OF 5
1D Symbology	AIRLINE 2 OF 5
1D Symbology	HONG KONG 2 OF 5
1D Symbology	DISCRETE 2 OF 5 (STANDARD 2 OF 5)
1D Symbology	CODABAR
1D Symbology	MSI PLESSEY
1D Symbology	UK PLESSEY
1D Symbology	TELEPEN
1D Symbology	GS1_DATABAR 14
1D Symbology	GS1_DATABAR LIMITED
1D Symbology	GS1_DATABAR EXPANDED
1D Symbology	UCC_COUPON

Decoding

Decode a Bar Code

Point the aiming beam at bar code. The aiming beam must align with bar code for better results.

A range of 4-10 inches (10-25 cm) from bar code is recommended.

1. Tap (⊞) > *IS4813_Demo*.
2. Aim scanner at bar code.
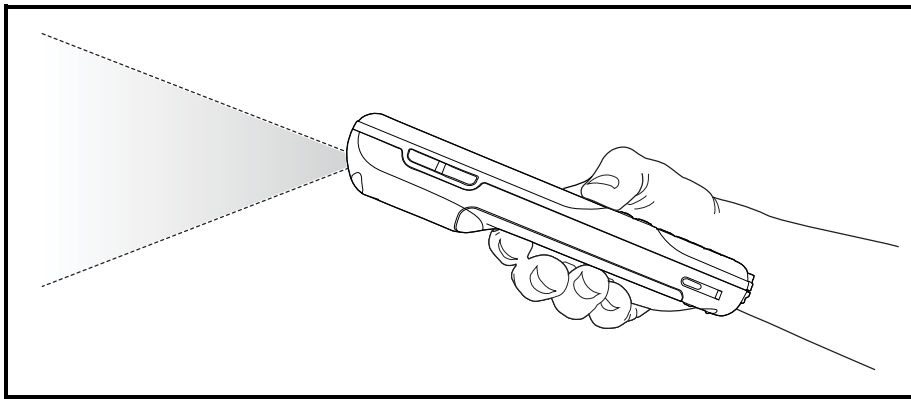
Figure 4-1.   Scanning a Bar Code

3. Activate and point aiming beam by pressing and holding the ***SCAN*** key.
4. The scan LED flashes red.
5. Hold device with aiming beam over bar code

➡ **NOTE:**

When bar code is decoded, the LED flashes green and there is a beep sound. The bar code information is entered into IS4813_Demo application.

Aiming Options

The aiming beam is smaller when holding the device closer to bar code and the aiming beam is larger when it is farther from bar code.

The aiming beam must be aimed closer to symbologies that have smaller bars or elements (mil size). The aiming beam must be aimed farther from symbologies that have larger bars or elements (mil size).

5300 Red High-Vis Aiming Pattern

The Dolphin 6000 device has a 5300 imager. The high-vis aimers frames the bar code accurately.

5100 Red Aiming Beam

Linear Bar Code

Figure 4-2.   Red Aiming Beam

Using the Camera

Overview

The Dolphin 6000 device is installed with a 3.0-megapixel color camera, Automated Camera Control (ACC) and an Application Programming Interface (API). The API provides easy access to color picture and video capture functions. The camera lens and camera flash are located on the back of the device.

Taking a picture

1. Tap (⊞) > **Pictures & Videos -> Camera**
2. Point camera lens at object.
3. Adjust position of camera lens to make sure object is showing on screen.
4. Press **ENT** key on keypad to take picture.

Menu

Tap **Menu** on the Command Bar to change camera settings, switch to video mode to see more camera options.

Item	Descriptions
Video	Start Video Mode
Mode	Normal Mode, Burst Mode, Timer Mode
Brightness	Set the brightness setting from +3.0 EV to -3.0 EV in .5 EV increments
Resolution	Set picture resolution (i.e., 320 x 240, 640 x 480, 1280x960, 2048x1536)
Zoom	Set zoom (x1, x2, x3, x4, x5, x6)
Focus Mode	Focus On, Focus Off, Focus on Trigger, or Fixed-Focus
Focus Trigger	
White Balance	Set mode to Auto, Cloudy, Sunlight, Incandescent, Fluorescent, Tungsten
Flash	Turn Camera Flash On or Camera Flash Off
Options	Set General, Slide Show, Camera, and Video options

Options

Tap **Menu -> Options**. The Options menu contains four tabs:

General Tab	Slide Show Tab	Camera Tab	Video Tab
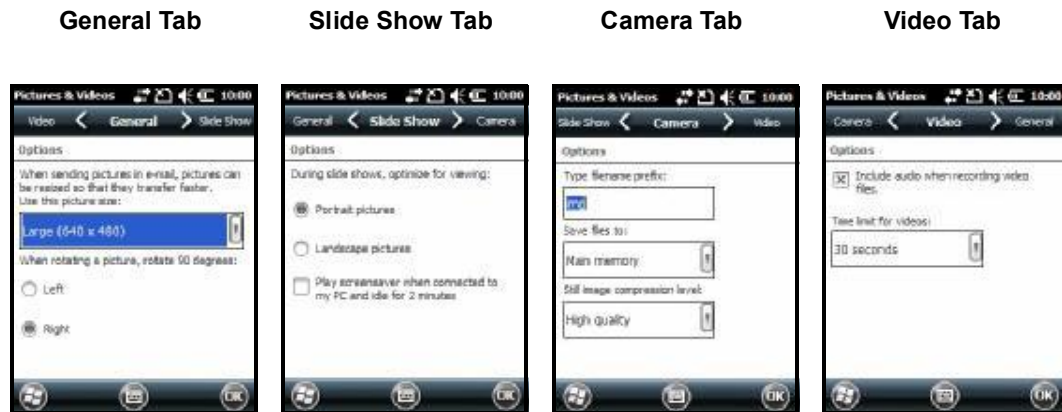
Figure 5-1. Options Menu Tabs

Recording Video

1. Tap (⊞) > **Pictures & Videos -> Camera -> Menu -> Video**
2. Point camera lens at object.
3. Adjust position of camera lens to make sure object is showing on screen.
4. Press **ENT** key on keypad to start recording.
5. Tap **Stop** on the screen or press **ENT** on keypad to stop recording.

Using the Keypad

Keypad

The Dolphin 6000 series has a 29-key alpha/numeric keypad.
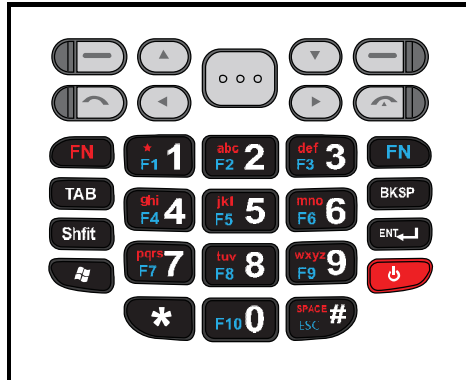
Figure 6-1.   Keypad

Using the Function Keys

Table 6-1.   Function Keys Table

Name	Key	Function
Backspace		Moves cursor back one space each time key is pressed. If typing text, it deletes previous character each time it is pressed.
Enter (ENT)		Confirms data entry.
Escape (ESC)		Cancels current action. Press *esc* key to return to previous menu.
Power Key		Puts the device into and wakes the device from Suspend Mode; see Suspend Mode on page 17.
SCAN Key		Wakes the device from Sleep Mode and activates the scan application.
SPACE		Moves cursor ahead one space.
TAB		Moves cursor to next tab stop or next control (on a form).
4-way Navigation Keys		Moves cursor left, right, up or down.
Volume Up Input		Volume level increases.
Volume Down Input		Volume level decreases.
Shift Key		Changes keyboard between uppercase alphabet mode and lowercase alphabet mode.
Orange FN Key		The orange FN key has 3 operating modes for Normal (default), Upper case and Lower case mode. Press orange key to change each mode.
Blue FN Key		The blue FN key activates F1~F10 function keys. Press blue key again to return to default mode.

Using the Navigation Keys

Located below the touchpanel display, the navigation keys moves the cursor through text, icons, folders and application screens.

29-Key Numeric Keypad
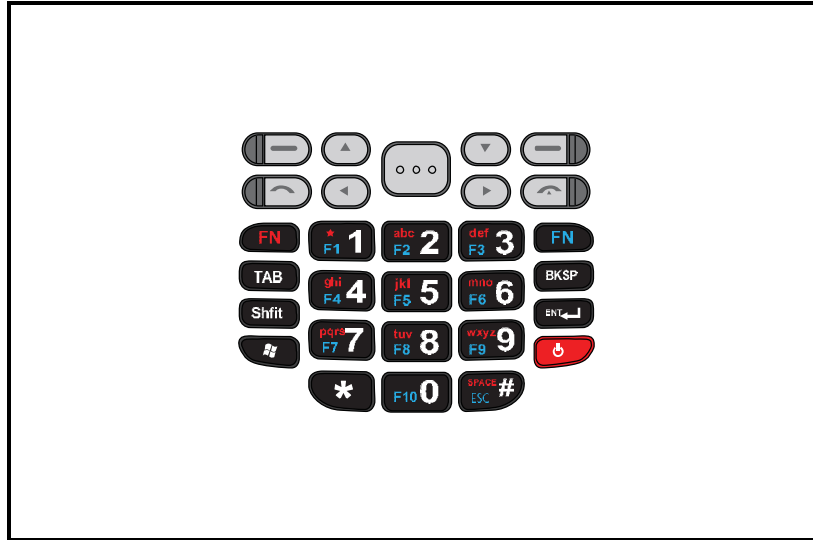
Figure 6-2.   Keypad Buttons

Keypad Combinations

Table 6-2.   Keypad Combinations Table

Numeric Keypad	Orange FN Key			Blue FN Key
	Numeric Mode (Default)	**Lower Case Mode**	**Upper Case Mode**	**Toggle On/Off, the Off mode will operate on default mode of Orange FN Key**
Left -	Left -	Left -	Left -	Left -
Up	Up	Up	Up	Up
Scan	Scan	Scan	Scan	Scan
Down	Down	Down	Down	Down
Right -	Right -	Right -	Right -	Right -
(Green Call Button)	(Green Call Button)	(Green Call Button)	(Green Call Button)	(Green Call Button)

Table 6-2.   Keypad Combinations Table (Continued)

Left	Left	Left	Left	Left
Right	Right	Right	Right	Right
(Red End Call Button)	(Red End Call Button)	(Red End Call Button)	(Red End Call Button)	(Red End Call Button)
1 F1 *	1	*	*	F1
2 F2 abc	2	abc	ABC	F2
3 F3 def	3	def	DEF	F3
4 F4 ghi	4	ghi	GHI	F4
5 F5 jkl	5	jkl	JKL	F5
6 F6 mno	6	mno	MNO	F6
7 F7 pqrs	7	pqrs	PQRS	F7
8 F8 tuv	8	tuv	TUV	F8
9 F9 wxyz	9	wxyz	WXYZ	F9
*	*			
0 F10	0			F10
# ESC SPACE	#	SPACE	SPACE	ESC
BKSP	BKSP	BKSP	BKSP	BKSP
Shift	Shift	Shift	Shift	Shift
Enter	Enter	Enter	Enter	Enter
Windows	Windows	Windows	Windows	Windows
Tab	Tab	Tab	Tab	Tab
Right Side	Scan	Scan	Scan	Scan
Volume Up	Volume Up	Volume Up	Volume Up	Volume Up
Volume Down	Volume Down	Volume Down	Volume Down	Volume Down
Power	Power	Power	Power	Power

System Settings

Overview

The device settings can be changed in the *Settings* menu. Tap ⊞ -> *Settings* and *Settings* menu will open.

Figure 7-1.   Settings Menu

Table 7-1.   Settings Menu Icons Table

Icon		Description
Bluetooth		Adjust Bluetooth radio settings. This icon will show only if Bluetooth radio and driver are installed. See Working with Bluetooth Radio.
Clocks & Alarms		Set system clock, date, time and schedule alarms. See Clock & Alarms.
Lock		Make password to limit access to device.
Sounds & Notifications		Set sound volume, enable or disable sounds, change sound settings and enable or disable vibrator.
Today		Change appearance and information on Today screen.
Connections		Change network connections settings. See Connections Menu.
Personal		Change button settings and set SIP options. See Personal Menu.
Power		See Power.
System		Change system settings. See System Menu.
Microsoft My Phone		Synchronize phone contacts, calendar, tasks, text messages, music, photos, videos, and other documents with a My Phone account at http:\\myphone.microsoft.com.

Clock & Alarms

To adjust the time and date:

1. Navigate to *Clock & Alarms* menu.
2. Use stylus or finger and tap **time and date** section.

OR

Tap (⊞) > **Settings -> Clock & Alarms.** The **Clock & Alarms** menu will open.

Figure 7-2.   Time and Date

3. Select **Time** tab. This setting sets system clock.
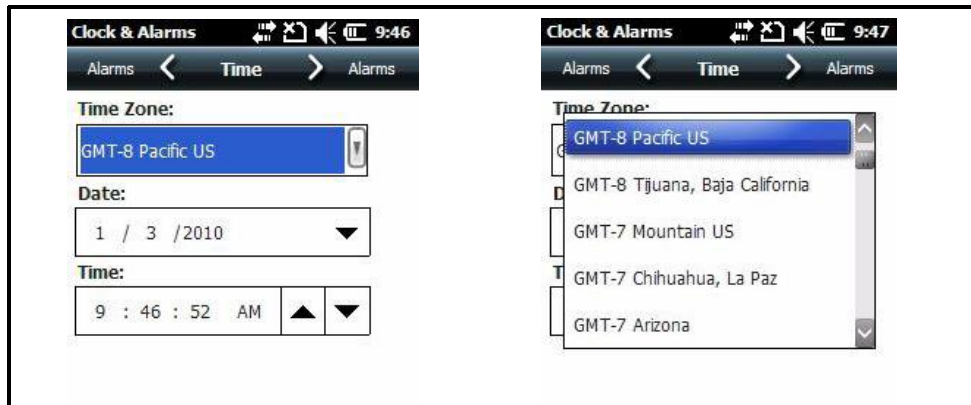
Figure 7-3.   Clock Settings

4. Tap **Time Zone** box to open the drop-down menu.
5. Set correct time zone from drop-down menu.
6. Set correct time and date in the remaining fields
7. Tap **OK** to save.

Personal Menu

To view the *Personal* Menu:

1. Tap ![Start icon] > ***Settings -> Personal***

Figure 7-4.   Personal Menu

Table 7-2.   Personal Menu Icons Table

Icon		Description
Buttons		Program side buttons on Dolphin 6000 to do specified tasks. See Keypad.
Owner Information		Enter contact information. This information will appear on the Today screen.
Phone		When GSM radio is turned on, tap this icon to set up user settings and enable or disable vibrator function. See Setup Options for system notifications.

![Note icon] **NOTE:**

Personal settings are kept in RAM memory. They are replaced by system defaults after a Hard Reset. For more information about resets, see Resetting the Device.

Using File Explorer

If a specific program is not found, use *File Explorer* on the device or *ActiveSync* on a workstation to make a shortcut of a program and put shortcut in *Start* menu folder.

⇒ NOTE:

It is recommend to *Copy* and *Paste* a shortcut so that program settings are not changed by accident. Use *Copy* and *Paste* shortcut to help make sure program files stay where they must be for system to find them.

1. Tap (⊞) *> File Explorer*
2. Navigate to *My Device -> Program Files*.

Figure 7-5.   Selecting My Device

3. Use stylus to hold the program. A pop-up menu appears.
4. Tap *Copy* on pop-up menu.
5. Navigate to the Windows folder and open *Start* Menu (*My Device -> Windows -> Start Menu*). Then tap and hold a blank area in the window, and tap *Paste Shortcut* on pop-up menu.
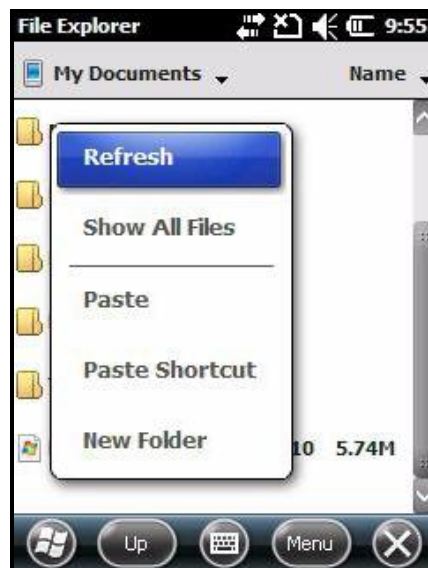
Figure 7-6.   Selecting Paste Shortcut

If there is no blank area in window, tap **Menu -> Edit -> Paste Shortcut**.

Figure 7-7.   Paste Procedure

6. Go to **Start** menu to make sure copied program is in **Start** menu folder.

Using ActiveSync on the Workstation

In *ActiveSync*, perform the same process as on device, except that *Explore* utility (Windows Explorer) is used to copy and paste the shortcut.

1. Open **ActiveSync -> Explore** and navigate to program.
2. Right-click on program and click **Create Shortcut**.
3. Select shortcut, right-click, and select **Cut**.
4. Navigate to *Start Menu* folder (**> Start Menu**).
5. Right-click on empty area and select **Paste Shortcut**.
6. On device, click on to go to *Start* menu.
7. Make sure program is there.

System Menu

The system settings can be changed in the *System* menu. To view the *System* menu:

1. Go to (⊞) **Settings -> System**.
2. Tap an icon to open a system setting.

Figure 7-8.   System Menu

Table 7-3.   **System Menu Icons Table**

	Icon	See Page
About		See About.
Backlight		See Backlight.
Certificates		See Certificates.
Encryption		See Encryption.
Error Reporting		See Error Reporting.
External GPS		See External GPS.
Managed Programs		
Memory		See Memory.
Regional Settings		See Regional Settings.

Table 7-3.   System Menu Icons Table (Continued)

	Icon	**See Page**
Remove Programs		See Remove Programs.
Screen		See Screen.
Task Manager		See Task Manager.
A-GPS		
CleanBoot		
Customer Feedback		
Version		
Network Time		
Schedule Power On/Off		
Windows Update		

About

The *About* menu shows information about device. There are four tabs:

- *Version Tab*: Shows information about software, operating system, processor and memory.

- *Device ID Tab*: Shows information the device uses to identify itself to other devices. It is important to know this information if device will be a part of a network.

    - *Device Name*: Shows system's default name. (This is the name used by ActiveSync.)

    - *Description*: Shows description of the device ID.

- *Copyrights Tab*: Shows copyright information.

- *Phone Tab*: Shows hardware version, software version, IMEI serial number, bluetooth firmware version and driver information.

Backlight

The Backlight menu adjusts the backlight level for screen.

To adjust the backlight level settings:

1. Tap (⊞) > *Settings -> System -> Backlight*.

Figure 7-9.   Battery Power Tab

There are three tabs:

Battery Power	Settings for backlight to turn off when device is using battery power.
External Power	Settings for backlight to turn off when device is using external power.
Brightness	Settings for backlight brightness when device is using battery power or external power.

The options on Battery Power tab and External Power tab are same.

Turn Off Backlight	Choose this option when for backlight to automatically turn off.
Turn On Backlight	Choose this option for backlight to turn on when a button or touch screen is tapped with stylus or pressed with finger.

Backlight Intensity

In the backlight menu, tap Brightness tab and move slider to change screen brightness for battery power and external power settings. The default setting is 4.
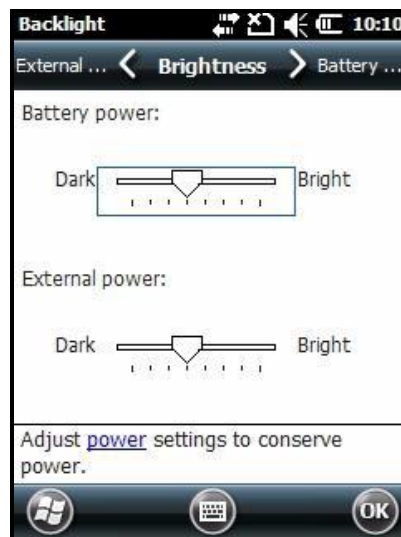
Figure 7-10.   Brightness Tab

Certificates

The Certificates menu shows certificates that the operating system recognizes.

Figure 7-11.   Certificates Menu

Encryption

The Encryption menu can be adjusted to encrypt files on storage cards so those files cannot be read by another device.

Figure 7-12. Encryption Menu

Error Reporting

The Error Reporting menu can be adjusted enable or disable error reporting function of Windows Mobile© 6.5.

Figure 7-13. Error Reporting Menu

External GPS

The External GPS menu gives the option to choose a port for a third-party GPS software application to access GPS receiver.
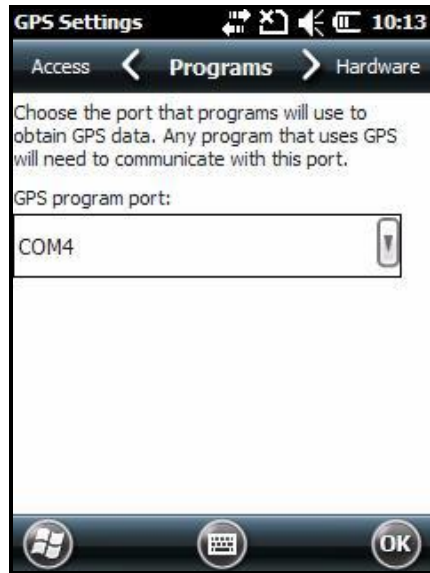
Figure 7-14.   External GPS Menu

⇒ **NOTE:**

Installation settings from GPS manufacturer to set connection is required.

Memory

The Memory menu shows capacity and usage statistics for RAM (volatile and Storage Card non-volatile) memory. View this setting when system messages about memory is received.

The device's memory allocation cannot be changed in Memory menu.

There are two tabs:

- Main
- Storage Card

Main
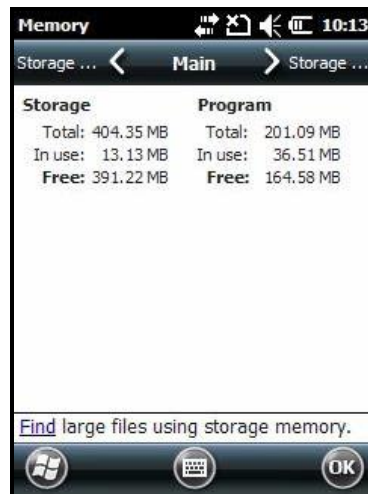
Figure 7-15.   Main

The *Main* tab shows usage statistics of on-board RAM (volatile) memory.

Columns:

- Storage = RAM memory used to keep programs and program data.
- Program = RAM memory used to run programs.

Rows:

- Total = Shows current Megabytes (MB) of memory that can be used.
- In use = Shows total MB of memory being used.
- Free = Shows total MB of available memory.

Storage Card

Figure 7-16.   Storage Card

The *Storage Card* tab shows capacity and usage statistics of Storage Card.

Select *memory* type from drop-down list.

- Total storage card memory = Total Megabytes (MB) of memory capacity of Storage Card

- In use **=** MB currently being used

- Free = MB that can still be used

Storage Card—One memory card can be installed in the Dolphin 6000 device. If memory card is installed in the device, select it in drop-down list and see capacity and usage statistics for card.

Power

The Power settings menu has two tabs:

- Battery
- Advanced

Battery
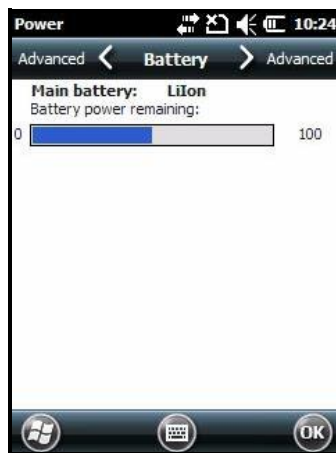
Figure 7-17. Battery

⇒ **NOTE:**
 For more information, see Battery Pack.

Advanced Tab

In the Advanced tab, settings can be adjusted for screen to turn off when device is not in use.

To change settings for On battery power:

1. Tap box that shows time. A drop-down list will open.
2. Set amount of time to pass before screen will turn off when device is not in use.

To change settings for On external power:

1. Tap box that shows time. A drop-down list will open.
2. Set amount of time to pass before screen will turn off when device is not in use.
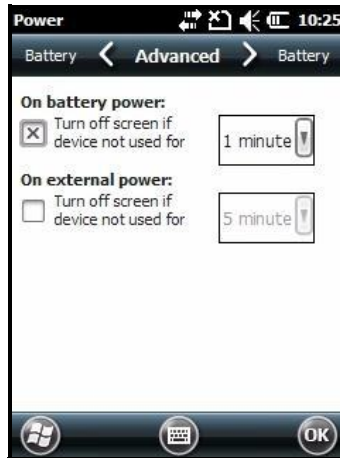
Figure 7-18.   Advanced Tab

NOTE:
> There is an option to set automatic turn-off times for device to save power. When device is turned off, that means device is in *Suspend Mode*. See Suspend Mode.

Regional Settings

The appearance and formatting can be adjusted to a geographic region in *Regional Settings* menu. Numbers (decimal places), currency (using $), time and date changes can be made. These settings apply to all screens. The *Region* tab shows region in drop-down list at top.

The device has many pre-programmed regional settings. Choose one from list and results appear on screen.

To see settings or change a setting:

1. Choose a tab
2. Make change
3. Tap *OK* on *Command* bar to save.

Remove Programs

In *Remove Programs* menu, programs installed on the device can be removed. Use this setting to troubleshoot when a messages is received and says device has no more memory. The programs will be removed from RAM memory. Any program (usually CAB or DLL files) saved in *Auto-install* folder (*My Device -> IPSM -> Autoinstall*) will re-install after hard reset.

NOTE:
> For information about hard reset process, see Hard Reset (Cold Boot).

1. Tap the *Remove Programs* Icon.
2. Select program to remove.

Figure 7-19.   Remove Programs Menu

3. Tap *Remove*. The message in Figure 7-20 appears.

Figure 7-20.   Remove Program Pop-Up

4. Tap *Yes*. Wait for program to be removed.
5. Check and see that program is not showing in list.

Screen

The Screen menu has three tabs:

- General
- ClearType
- Text Size

General
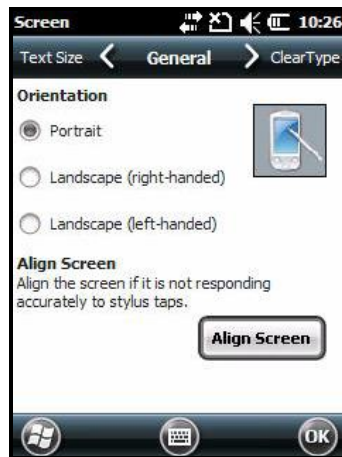
Figure 7-21. General Tab

Orientation

The General tab is used to set dynamic screen rotation. There are three types of screen orientations:

- Portrait
- Landscape (right-handed)
- Landscape (left-handed)

Align Screen

The screen can be re-aligned in General tab. If tapping buttons or icons with stylus does not work correctly, the screen must be re-aligned.

1. Tap *Align Screen* to open align screen window.
2. Tap a target several times with stylus. This re-calibrates touch screen.

   - Align Screen must be done using the stylus. The stylus tip is necessary for calibration.
   - Tap stylus into center of target once and release. Do not tap target more than one time.

ClearType
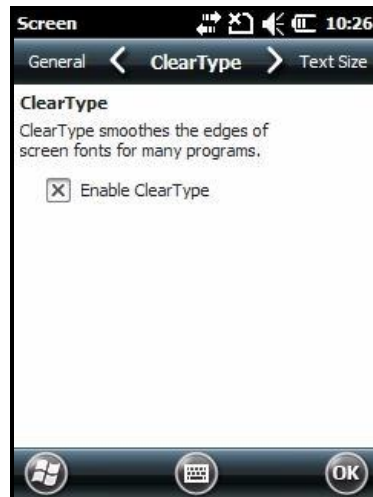
Figure 7-22.   ClearType Tab

The screen supports ClearType font rendering.

To turn on ClearType font rendering, tap *Enable ClearType* and tap *OK*.

➡ **NOTE:**

For more information about ClearType font rendering, visit:
www.microsoft.com/typography/WhatIsClearType.mspx.
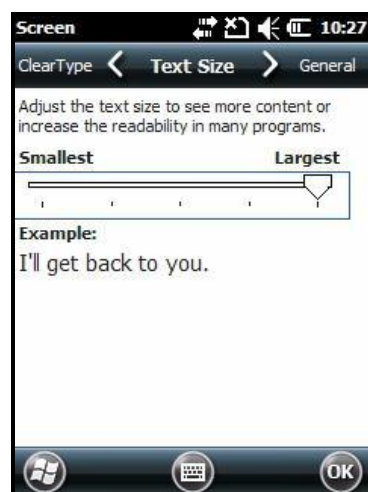
Text Size

Figure 7-23.   Text Size Tab

In Text Size tab, font scaling can change in:

- Today screen
- Contacts
- Calendar
- Messaging
- Tasks

Font scaling means point size of fonts can increase or decrease in applications.

To change font size:

1. Move slider to Smallest or Largest. The Example text changes to show the font change.
2. Tap *OK* to save font size setting.

Task Manager

Task Manager shows information about applications and processes that are being used on device. Use Task Manager to view memory and CPU usage of applications and processes. View Task Manager when memory errors are received or when device operation is slow.
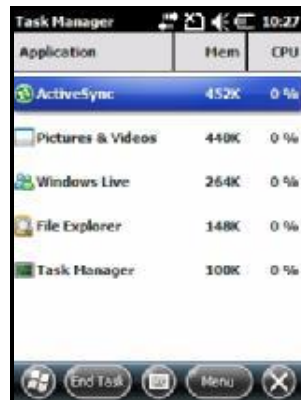
Figure 7-24. Task Manager Menu

Using the Task Manager

Applications
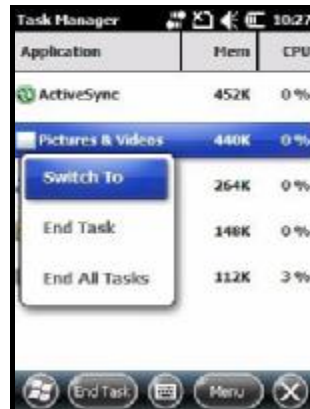
Figure 7-25. Applications in the Task Manager

To see status of programs running:
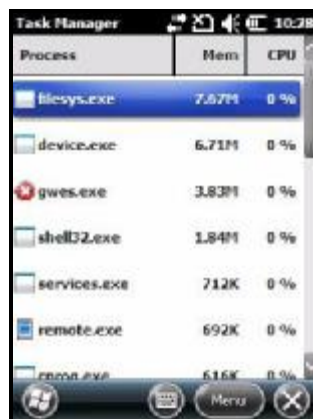
1. Tap **Menu** button on Command bar
2. Tap **View -> Applications**.
3. Tap and hold on an application
4. Tap **Switch To** on pop-up menu.

5. Tap and hold on an application.

6. Tap **End Task** or **End All Tasks** on pop-up menu.

⇒ **NOTE:**

When stopping a program, more RAM memory will be available. When stopping a program in *Task Manager*, unsaved data in that program is lost. To make more available memory and not lose data, go to active program and save data before closing program.

Processes

Figure 7-26. Processes in the Task Manager

To view information about processes:

1. Tap **Menu** button on Command bar.

2. Tap **View -> Processes**.

Communication

Connections Menu

The Connections menu provides access to the device's wireless communication options.

Figure 8-1.   Connections Menu

Table 8-1.   Connection Menu

Icon	Description
Beam	Enables infrared communication.
Connections	Opens Microsoft's connections manager. Refer to Connections Manager.
Wireless Manager	Manages the wireless radios installed on the device. Refer to Wireless Manager.
USB to PC	Enables advanced wired USB to PC communication via ActiveSync. Refer to ActiveSync Communication.
Wireless LAN	Enables to configure Wireless Zero Config (WZC). This icon appears only if the 802.11b/g driver is loaded on the device and the WLAN Security Supplicant is not loaded. By default, the Wireless Zero Config is disabled and the supplicant is loaded. This icon appears only if the supplicant is removed and the device is Cold Booted.
Domain Enroll	Connects the phone to the company resources.
Connect Config	Enables automatic data configuration.
WLAN Mode	Enables WLAN configuration.

⟹ NOTE:

All server-assigned IP addresses use Dynamic Host Configuration Protocol (DHCP).

Connections Manager

Microsoft's Connections Manager sets up multiple network connections to the Internet Service Providers (ISPs) via the external modem.

➡ **NOTE:**

Do not enter connection parameters in the connections manager if:

- One of the on-board wireless radios is used to connect to a network. The Dolphin 6000 device uses the settings from each radio's configuration utility to connect.

- Wireless Zero Config is used. By default, WZC is disabled on Dolphin 6000 devices.

To open the *Connections Manager*, navigate to *Start-> Settings-> Connections-> Connections* icon .

Figure 8-2.   Connections Manager

Tasks Tab

The Tasks tab enables to initially configure, then manage network settings when using a modem. User's should select an item from the menu and follow the instructions on the screen to complete the network configuration.

My ISP

Enables to add and manage modem connections to an ISP. To complete the setup screens, get the following information from the ISP:

- ISP dial-up access telephone number
- Username
- Password
- TCP/IP settings

My Work Network

Enables to establish the following connection types:

- Modem
- Virtual Private Network (VPN)
- Proxy server connection

⇒ NOTE:

> When connected to ISP or private network, during synchronization with the PC, the device downloads the proper proxy settings. If the network connection is not configured on PC or need to be changed, then the ISP or network administrator should provide the following information:

- Proxy sever name
- Server type
- Port
- Type of Socks protocol used
- User name and password.

To complete the setup screens, get the network parameters from system administrator.

Modify an Existing Connection

Manage Existing Connections appears on the Connections tab after at least one network connection has been established.

Tap Manage Existing Connections on the Tasks tab and follow the setup screens.

Figure 8-3.   Manage Existing Connections

Advanced Tab

The Advanced tab enables to select the following:

- Default network
- Dialing rules
- IP address exceptions for modem connections.
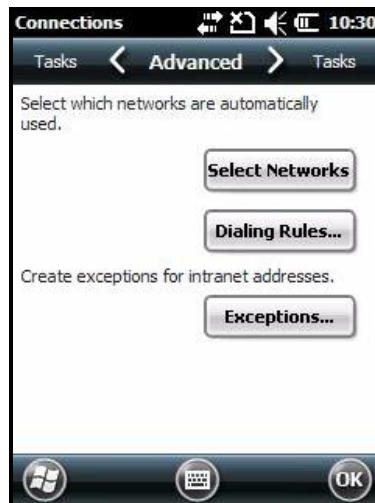
Figure 8-4.   Advanced Tab

➡ **NOTE:**
> Advanced settings should not be modified. Most ISPs use DHCP addresses.

Online Help

For more information about modem connection setup, tap on the Help icon in setup screens.

Wireless Manager

ActiveSync Communication

ActiveSync 4.5 or higher enables to synchronize data between the device and the workstation. In order to perform the synchronization, the program must be installed and configured for the appropriate communication type on the host workstation and Dolphin 6000 device. Dolphin 6000 devices ship with ActiveSync installed by default.

If ActiveSync is already installed on the host workstation, then the workstation and Dolphin 6000 device need to be connected (via Dolphin 6000 peripheral) in order to initiate the communication.

If ActiveSync 4.5 or higher is not installed on the host workstation, it's possible to download the latest version of the program from the www.microsoft.com website.

⚠ **CAUTION:**

When communicating via ActiveSync, the device is designed to be connected to the host workstation with a communication peripheral, such as the charge/communication cable.

NOTE:

If communication in ActiveSync fails, remove the USB cable and connect the USB cable to the host workstation again to initiate the process.

Capabilities

The following is a list of the device's capabilities:

- Back up and restore the device data
- Copy files between the device and workstation.

NOTE:

It is suggested to copy, rather than synchronize the data.

- Defining a synchronization mode. It is possible to synchronize continuously while connected to the workstation or only when the synchronization command is selected.
- Defining the time period and data type to be synchronized. It is possible to choose how many weeks from the past appointments will be synchronized.

Communication Types

The Dolphin 6000 device supports the following types of communication via ActiveSync through its I/O Connector (see page 3-10) on the bottom panel:

USB The USB cable and hardware peripherals allow the device to communicate with a workstation or to networked through a USB hub. The Dolphin 6000 device supports full-speed USB communication (USB 1.1) with maximum data transfer rate: 12 Mbps. The Dolphin 6000 device defaults to USB communication out of the box.

Hardware Requirements for Setup

The following is a list of the hardware requirements needed for Setup:

- Dolphin 6000 communication peripheral or cable
- Dolphin 6000 power cable
- USB cable (for USB communication).

Software Requirements for Communication

To synchronize successfully, ActiveSync v4.5 or higher must be configured for the same communication type on the host workstation and Dolphin 6000 device. ActiveSync must be setup on workstation before initializing synchronization from the device for the first time.

The following is a list of the supported operating systems:

- Windows 98 Second Edition
- Windows ME
- Windows 2000
- Windows NT (4.0 SP6 or higher)
- Windows XP operating systems.

Setting Up the Host Workstation

1. Verify that ActiveSync is configured to use the appropriate communication type by tapping *File > Connection Settings*.

    ● For USB communication, check `Allow USB connections.`

Figure 8-5.   USB Connection Settings

⟹ **NOTE:**

USB can be selected in the software, without affecting the processing. The hardware setup should use only USB.

Communicating with the Dolphin 6000 device

After setting up the workstation and the device, ActiveSync connection should be established automatically. Perform the following:

1. Connect the Dolphin 6000 device to a Dolphin 6000 communication peripheral. The Dolphin 6000 device automatically opens ActiveSync, in order to establish a connection.

Synchronizing with the Host Workstation

The synchronization process begins automatically after Setup, if ActiveSync has been installed to the host workstation and the workstation has been connected to the device.

Exploring the Device from the Workstation

When the Dolphin 6000 device and workstation are connected, open the main ActiveSync window (on the desktop), and tap *Explore*.

Figure 8-6.   ActiveSync Window

The *Mobile Device* folder opens in *Windows Explorer*.

Figure 8-7.   Mobile Device Folder

The Dolphin 6000 device is treated as a mass storage device, and transferring files can be dragged and dropped or copied and pasted.

Installing Additional Software

In addition to the default programs, the user can install any other program that meets the following requirements:

● It is designed for Windows Mobile-based device and for the version of processor of the device.

▭▷ NOTE:
> To verify the processor, navigate to **Start-> Settings-> System-> About-> Version**

● Has an EXE, CAB, or DLL extension.

The requirement to the device is that it must have enough memory to store the program.

The most popular place to find the software is on the Windows Mobile website: www.microsoft.com/windowsmobile/en-us/downloads/default.mspx

Adding Programs to the Device Using ActiveSync

⚠ **CAUTION:**

> When selecting programs, verify that the program and version of the program are designed for Windows Mobile and processor. To verify the processor tap on ***Start-> Settings-> System-> About-> Version***.

Depending on the application, the software must be stored or installed on the host PC. Perform the following:

1. Download the program to the desktop computer from the Internet, CD or disk. It can be a single *setup.exe*, *EXE-*, *CAB-* or *DLL-*file or several files for different types of devices and processors.

2. Many programs provide special installation instructions. Read the installation instructions in *Read Me* files, or documentation that comes with the program.

3. Connect the device to the desktop computer via a communication peripheral.

Installer File

The idea of an installer program is to install on the PC and the device simultaneously. Perform the following:

1. On the PC, double-click the ****.setup.exe* or *EXE**-file. The installation wizard begins.

2. Follow the directions on the PC screen. The installation process includes transferring the software to the device.

Non-Installer File

There are programs that cannot be installed on PCs because they are designed for devices. If the instructions cannot be found in the *Read Me* file or documentation, perform the following:

1. Store the appropriate file or files on the host PC

2. Open ActiveSync and click ***Explore***

3. Click on the ***My Windows Mobile-Based Device*** folder and copy the program file or files to the Program Files folder on the device.

   - If the program has to be part of the Autoinstall that occurs after every Hard Reset, place the program file in the Autoinstall folder located at ***My Windows Mobile-> Based Device-> IPSM-> Autoinstall***

⚠ **CAUTION:**

> Hard Reset erases RAM data.

4. If the file or files have been copied to the Autoinstall folder, the user can tap on the program inside the folder or perform a Hard Reset and the program installation starts automatically. For more information, refer to Hard Reset (Cold Boot).

After the installation on the device is complete, tap ***Start***. The program and its icon appears on the Start screen. Tap on the icon to run the program.

Adding Programs Directly from the Internet

When selecting programs, verify that the program and version of the program are designed for Windows Mobile and the device's processor. Processor can be verified by tapping on **Settings-> System-> About-> Version** tab. Make a note of the information in the ***Processor*** field.

Perform the following:

1. Choose the version of the software that is designed for the specific device and processor. To determine the device and processor type, tap on ***Settings-> System-> About***. Make a note of the information in the *Processor* field.

2. Download the program to the device straight from the Internet, using Internet Explorer Mobile. It can be a single setup.exe, EXE-, CAB- or DLL-file or several files for different types of devices and processors.

3. Many programs provide special installation instructions. Read the installation instructions in Read Me files, or documentation that comes with the program.

4. Tap on an EXE-file. The installation wizard begins. Follow the directions on the screen.

5. Select the radio or radio combination and tap ***Apply***. The Radio Manager begins enabling radio or radio combination.

6. When enabled, the Status field reads `Success`.

COM Port Assignment Table

Table 8-2.   COM Port Assignment Table

COM Port	Description
COM0	Not accessible
COM1	Not accessible
COM2	Not accessible
COM3	Serial Port: Rs232 Connector on the bottom panel
COM4	GPS Com Port
COM5	Bluetooth DUN
COM6	Unused
COM7	Unused
COM8	Unused
COM9	BT BTHATCI server

Working with GSM/GPRS/EDGE

Overview

The Dolphin 6000 device is designed with an integrated, embedded GSM/GPRS/EDGE penta-band radio module for WWAN communication.

GSM	Global System for Mobile communications, GSM is an open, non-proprietary wireless WAN system.
GPRS	General Packet Radio Service, GPRS is a non-voice service that allows packet-switched data to be instantly sent and received across mobile telephone networks.
EDGE	E-GPRS is a non-voice service that allows packet-switched data to be instantly sent and received across mobile telephone networks at a higher data rate than standard GPRS.

Requirements

Using GSM/GPRS/EDGE requires:

- Network subscription to a GSM/GPRS/EDGE network (must know what service providers are in the area)
- An installed SIM card that has been activated by the network service provider (see SIM Card Installation on page 9-2).

Voice and Data Communication

Dolphin 6000 devices with integrated GSM/GPRS/EDGE radios are best for the following two-way voice and data communications:

- Voice: GSM voice data (dial-up)
- Data: Available speed depends on the wireless network carrier and their supported packet-data technology and network conditions.
- GPRS Class 10: data transmission max. 85.6 kbps (DL), max. 42.8 kbps (UL)
- EDGE (E-GPRS) Class 10: data transmission max. 237 Kbps (DL), max. 118 kbps (UL)

GSM radio for voice communication and data communication can be used, but not at same time. If making a voice call, the device cannot send data. If sending data, the device cannot make voice calls.

SIM Card Installation

Subscriber Information Module, a SIM card contains subscriber's personal information, GSM/GPRS radio settings, security keys, contacts, etc. SIM cards can be installed in compatible mobile devices that can switch devices without losing personal and setup information.
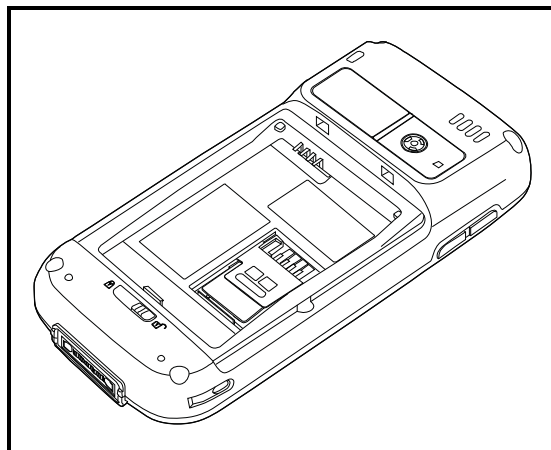
Figure 9-1.   SIM Card Location

SIM Card Requirements

Before installing the SIM card:

- The service provider must activate the SIM card.
- The device must be turned off.

⮕ **NOTE:**
If no SIM card is installed, emergency phone calls such as 9-1-1 can still be done.

Installing a SIM Card

1. Power down device.
2. Unlock battery door.
3. Remove battery door and battery.
4. Unlock SIM card latch by sliding the latch toward top of device.
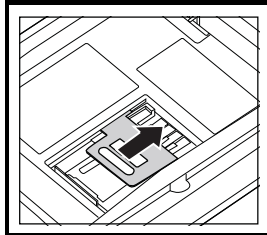
Figure 9-2.   SIM Card latch

5. Lift latch up to expose SIM card socket.
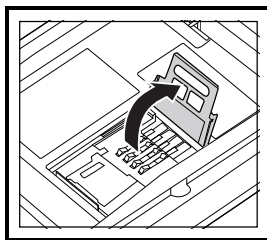
Figure 9-3.   SIM Card latch

6. Insert SIM card into SIM card socket.
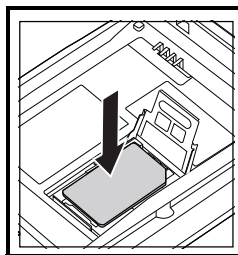
Figure 9-4.   SIM Card

⮑ **NOTE:**

Make sure interface on the card is connected to SIM Card interface in socket, align corner of the card with corner of the socket.

7. Close SIM card latch.
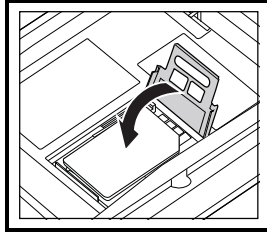
Figure 9-5.   SIM Card latch

8. Lock SIM card latch by sliding the latch toward bottom of device.
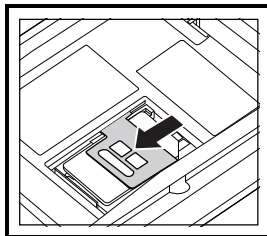
Figure 9-6.   SIM Card latch

9. Install battery and battery door.
10. Lock battery door.

Enabling the GSM Radio

Voice Communication

Dolphin 6000 device can operate as a phone over GSM radio.

Audio Modes

Hands-free
Mode

Volume Control

Press the up or down arrow on Volume Control button on left side of device to adjust volume of speaker

Accessing the Dialer Window

When GSM radio is active, tap 🏁 > **Phone**.

The Phone dialer opens.

Figure 9-7.   Phone Dialer

Dialing

Once the dialer window is open, the device can dial two ways:

- Use touch screen and tap buttons on dialer window.
- Use physical keypad (when keypad is in numeric mode).

Sending Calls

After number is dialed, tap *Talk* on the screen or press green *Send* key on keypad.

Figure 9-8.   Phone Dialer Options

NOTE:
> The Voice call in progress icon in the navigation bar indicates phone is in use.

Ending Calls

While the phone call is active, tap *End* on the screen or press red *End* key on keypad.

Keypad Combinations for Calls

Keypad	To Send a Call, Please...	To End a Call, Please...
29-key numeric keypad	Green Send Key	Red End Key

Accessing Voice Mail

Tap (🟦) > *Phone -> Speed Dial -> Voice Mail -> Call*.

NOTE:
> Update voice mail retrieval number by turning off device and then turn on device in Wireless Manager. See Enabling the GSM Radio on page 9-4.

View Options

Tap *Menu -> View*.

Figure 9-9. View Options Pop-Up Menu

Setup Options

Tap *Menu -> Options*. The Phone menu will open and there are sounds, services, network and security tabs.

Figure 9-10. Options Pop-Up

Sounds

In Sounds tab, ring tones, ring types and keypad sounds can be changed.

Figure 9-11.   Sounds Tab

Services

The phone will read settings for each service on SIM card and show the available options from carrier.

Figure 9-12.   Services Tab

Network

There are options to find and set networks on Network tab.
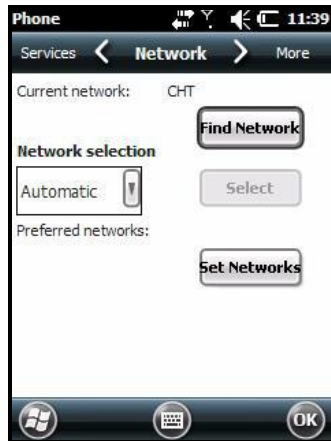
Figure 9-13.   Network Tab

Security

There are options to make or change a PIN on Security tab.

Figure 9-14.   Security Tab

Data Communication

Data communication can be set up in Connections Manager. The carrier on SIM card is the ISP.

System Requirements

- The GSM radio must be enabled. Refer to Enabling the GSM Radio.
- Must have an active SIM card with a data plan installed. Refer to SIM Card Installation.

Information Requirements

The following is required from SIM card carrier:

- APN (access point name).
- Username and password of account.

Establishing Data Communication

1. Tap (⊞) > *Settings -> Connection -> Connections*.
2. Under My ISP, tap *Add a new modem connection*.
3. Enter a name for connection. Select Cellular Line (GPRS) as modem
4. Tap *Next*.

Figure 9-15.   Make New Connection

5. Enter Access point name. Tap *Next*.
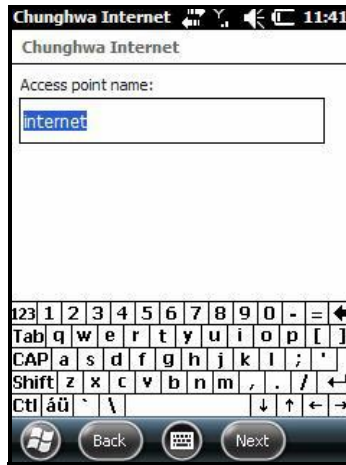
Figure 9-16.   Access Point Name

6. Enter username and password from account. Tap *Finish*.
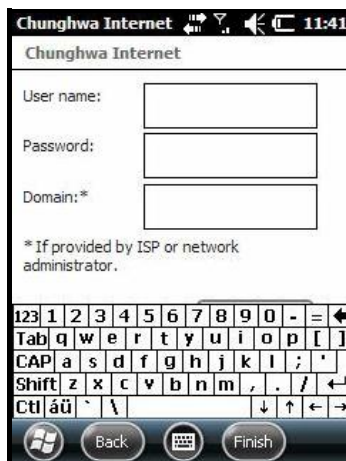
Figure 9-17.   Username and Password

7. In Connections window, tap *Manage existing connections*. The new connection should show on list in modem tab.

Figure 9-18. Modem Tab

8. Press the connection. A pop-up menu appears. (Figure 9-19)
9. Select *Connect* on the pop-up menu.

Figure 9-19. Connect on the Pop-Up Menu

10. The network icon in the navigation bar shows GSM radio is attempting to connect.

➡ **NOTE:**

When the device is on a 2G (EDGE/GPRS) network, a data connection failure occurs if device is in use for a voice call while trying data connection. Voice and data use at the same time is only supported if device is on a 3G network. In 2G mode, a voice call has priority over data connection. Active data connection is automatically set in park mode and data is retrieved when voice call ends.

11. When connection is complete, network icon changes to Signal Strength Icon. Data can now be sent over GSM.

Ending the Data Connection

The default setting makes data connection disconnect after an specific amount of time passes and is not in use. This amount of time is set by the ISP.

To end data connection manually, tap **network icon** in navigation bar and tap **Disconnect** on the pop-up bubble.

Manual Network Selection

Select *Automatic* or *Manual* network selection in the Network tab. The device defaults to Automatic network selection.

1. When an active SIM card is inserted in device, tap (⊞) > *Settings -> Personal -> Phone -> Menu -> Options.* The Phone menu window opens.
2. Choose *Network* tab.
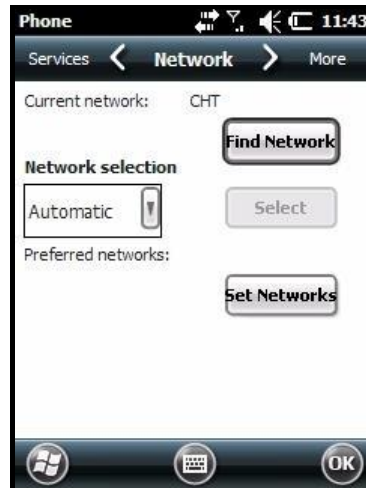
Figure 9-20.   Network Tab

3. Under Network selection, choose *Automatic* (the default setting) or *Manual*.

   a. If Manual is selected, the device will search for available networks.
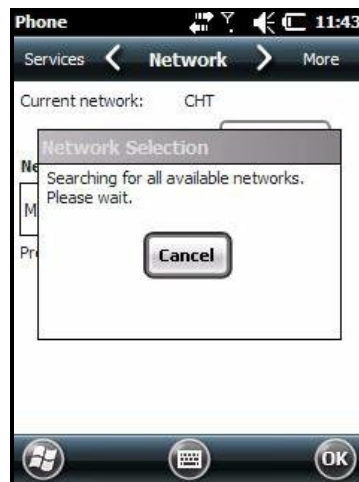
Figure 9-21.   Network Selection Pop-Up

b. The available networks are shown.
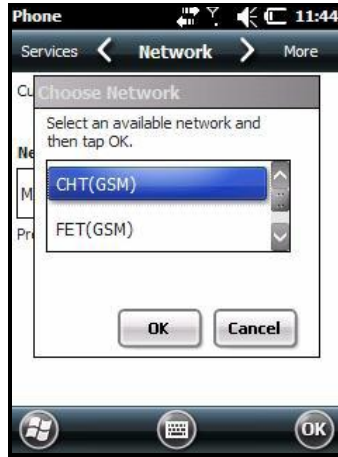
Figure 9-22.   Choose Available Network

c. Choose a new network and tap *OK*. The device registers on new network and *Network* tab will open.
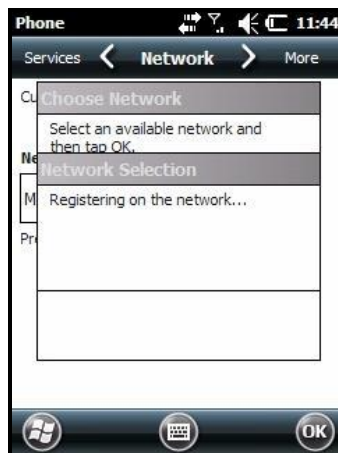
Figure 9-23.   Register Network

d. To switch to another network, tap *Select* button and process repeats.

4. To switch back to automatic roaming, select *Automatic* under Select networks and tap *OK*.

Working with Bluetooth Radio

Enabling the Bluetooth Radio

Connecting to Bluetooth Devices

The device must find other bluetooth devices. Choose an available device and connect to it. Pairing occurs as part of connection process.

1. In Wireless Manager, tap *Menu > Bluetooth Settings*.

OR

Tap (🎙) *> Settings > Bluetooth.*

Figure 10-1.   Devices Tab

2. Tap *Add new device*. The device will start looking for other Bluetooth devices.

Figure 10-2.   Searching for Bluetooth Devices

3. Choose a device in list and tap **Next**.

Figure 10-3.   Select a Bluetooth Device

4. It is necessary to enter a passcode:

    a. If device has a passcode, enter it in Passcode box and tap **Next**.

    b. If device does not have a specific passcode, enter one in the Passcode box and tap **Next**. The Bluetooth radio tries to connect with device.

Figure 10-4.   Enter a Passcode

5. If a passcode is created, the other device will ask to enter same passcode.

6. Enter passcode to make paired connection. If you entered a device specific passcode, it is not necessary to do anything on other device.

7. When connection is complete, a list of supported services is shown.
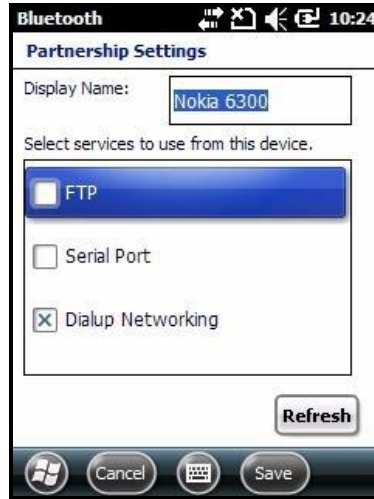
Figure 10-5.   List of Supported Services

8. Choose services to use and tap *Save*. The services on new devices must be selected or pairing will not include those services, even if devices are paired. If services are not selected, the device will keep asking for passcode. The device appears in the list on the main window.

Figure 10-6.   Devices List

After passcodes have been accepted on both devices, there is now a trusted (paired) connection.

Pairing and Trusted Devices

The Dolphin 6000 supports pairing. Pairing happens during general connection setup. Paired devices are trusted devices. This means there is unrestricted access to all services (including services that require authorization and authentication).

A connection can remove pairing. A device that is connected to Dolphin 6000 device but not paired with it is an untrusted device. Transferring content to untrusted devices can be done by requiring authorization each time (i.e. the beginning of a file exchange). Use the Beam File method of file transfer to send a file as an untrusted device.

NOTE:

See Transferring Files.

Types of Devices and Services

The Bluetooth radio scans for available Bluetooth devices in range if Add new device is tapped on the Devices tab. These are Bluetooth devices that are discoverable.

Device Types

Figure 10-7.   Selecting a Bluetooth Device

Supported Services

The Partnership Settings menu will only show services that are supported on both devices.
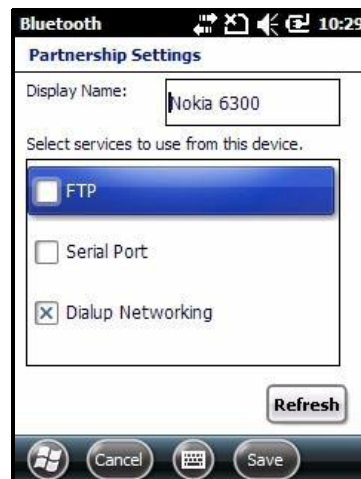
Figure 10-8.   Partnership Settings

Connecting to Bluetooth Printers

1. Make sure the Bluetooth printer is in range and set to discoverable by other Bluetooth devices.
2. Look up Bluetooth printer's broadcasted ID.
3. Search for compatible bluetooth devices (Tap *Settings > Bluetooth > Add new device*)
4. Look for Bluetooth printer's broadcasted ID in list of available devices.
5. Click on Bluetooth printer's ID and wait to enter Passcode.
6. Enter Passcode and tap *Next*. The passcode can default to "1111" or "0000." If there is no default, look in printer manual for passcode.
7. Choose a printing-related service in list of services.
8. Tap *Save* to make a connection on the device.

Connecting to Bluetooth Headsets

1. Make sure the Bluetooth headset is in range and set to discoverable by other Bluetooth devices.
2. Look up headset's broadcasted ID.
3. Search for compatible bluetooth devices (Tap *Settings > Bluetooth > Add new device*)
4. Look for headset's broadcasted ID in list of available devices.
5. Click on headset's ID and wait to enter a passcode.
6. Enter Passcode and tap *Next*. The passcode can default to "1111" or "0000." If there is no default, look in the headset manual for the passcode.
7. Choose *Headset* in list of services.
8. Tap *Save* to make a connection on device.

Transferring Files

1. Press ![Windows icon] > *File Explorer*.
2. Navigate to file to transfer.
3. Press hold on the file for pop-up menu to open
4. Tap *Beam File*.

Figure 10-9.   Beam File on the Pop-Up Menu

5. The Bluetooth radio will begin to search for available devices.

Figure 10-10.   List of Bluetooth Devices

6. Choose device to send selected file.

7. When trying to connect, the selected device shows Pending.

Figure 10-11. Bluetooth Device Connection

8. When the file is being transferred, the selected device shows Sending.

Figure 10-12. File Transfer

Making the Device Discoverable

The default setting of the Dolphin 6000 device is not discoverable, which means the Dolphin 6000 device will not be found by other Bluetooth devices.

To make device discoverable:

1. Tap **Mode** tab in Bluetooth menu.

Figure 10-13.   Mode Tab

2. Choose **Make this device visible to other devices** and tap **OK**.

Selecting COM Ports

COM ports 0-9 can be selected.

⇒ **NOTE:**
   For more information, see Dolphin 6000 COM Port Assignment Table.

Working with GPS

Overview

The Dolphin 6000 uses a MT3326, a high performance single chip, single die host-based GPS solution that has an on-chip CMOS RF and digital baseband. The MT3326 meets the industry's highest levels of sensitivity, accuracy, and Time-to-First-Fix (TTFF) with lowest power consumption in a small-footprint lead-free package. Its small footprint and minimal accessory gives important reductions in the design, manufacturing and testing resources needed for navigation devices and handsets.

With an on-chip integrated LNA, the MT3326 has a total receiver noise figure of 4 dB (before ADC). With its on-chip image-rejection mixer, the spec of an external SAW filter is decreased. With an on-chip automatic center frequency calibration band pass filter, an external filter is not needed. The integrated PLL with Voltage Controlled Oscillator (VCO) gives excellent phase noise performance and fast locking time.

The MT3326 supports up to 210 PRN channels. With 66 search channels and 22 simultaneous tracking channels, the MT3326 finds and tracks satellites in the shortest time, even at indoor signal levels. The MT3326 supports various location and navigation applications, including GPS, SBAS (WAAS, EGNOS, GAGAN, MSAS), DPGS (RTCM), and AGPS.

The on-chip power management design makes the MT3326 easily included into the system without an extra voltage regulator. With its linear regulator embedded, the MT3326 gives the user plenty of choices for an application circuit.

Through the MT3326's excellent low power consumption properties (acquisition 50mW, tracking 38mW), power sensitive devices, especially embedded systems, do not have to worry about operating time.

With MT3326's powerful interface, a host system can communicate with the MT3326 efficiently through UART and SPI at baud rates as fast as 921600 bps, which saves the host CPU processing time.

From a system design view, if a host system already has TCXO or RTC, the MT3326 can share these sources with a host system and this will save system BOM costs and system PCB area.

Assisted GPS Support

Powering the GPS Module

Communication Ports

Selecting the Port

1. Tap ![Windows icon] **> Settings -> System -> External GPS**.
2. Tap the **GPS program port** box. A drop-down list will open.
3. In GPS program port drop-down list, choose **COM4** or **GPD1** (the GPS Intermediate Driver) as needed by the application.
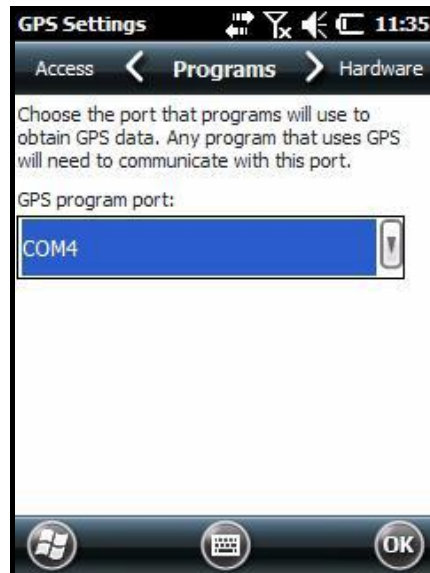
Figure 11-1.   Programs Tab

4. Tap **OK** to save.

COM

- C38400

GPS Intermediate Driver

When the first user of GPD1 opens the port, the GPS Intermediate Driver opens port COM4. The GPS Intermediate Driver lets multiple applications open GPD1, and GPS data is transmitted to all open ports.

When the GPSID driver is in use, the COM4 port is given to GPSID as READ/WRITE (COM4 is still available for access mode of 0).

⇒ **NOTE:**
For more information about Microsoft's GPS Intermediate Driver, refer to:
http://msdn.microsoft.com/en-us/library/ms850332.aspx

Dolphin 6000 HomeBase

Overview

The Dolphin 6000 HomeBase supports both RS232 and USB communications, which makes it able to connect with majority of PC-based enterprise systems.

Capacity

The HomeBase holds one Dolphin 6000 device and has an auxiliary battery well behind the device well. The HomeBase can charge two battery packs:

- Battery installed in Dolphin 6000
- Spare battery

Charge Time

The HomeBase completes a full charge of battery pack installed in the device well in 4 hours. The HomeBase completes a full charge of battery pack in Auxiliary Battery Well in 4 hours (see Auxiliary Battery Well).

Charging Process

The HomeBase gives power to the intelligent battery charging system in Dolphin 6000 device. The charging systems know when a full charge of battery has been completed and switches to a trickle charge to keep a full charge of the battery.

Communications

Satisfactory data communications at speeds of up to 115k baud can be transmitted by HomeBase through RS232 serial port. The data transmission rate goes up to 12 Mbps when using USB port.

Parts and Functions

Front Panel
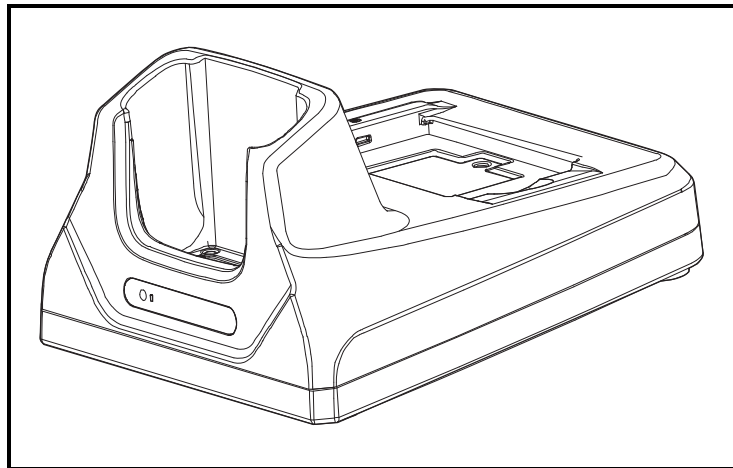
Figure 12-1.   HomeBase Front View

Device Well

Place the Dolphin 6000 in the device well to use the device and to charge battery pack in the device. The HomeBase charges the main battery in 4 hours. If host device is a workstation that uses ActiveSync, synchronization begins immediately.

AUX Battery Status LED

The AUX battery status LED shows the status of battery charging in auxiliary battery well; see Back Panel.

Status	LED color
Pre-charge (for a very low battery?)	Orange
Fast Charge	Red
Full (completed charge)	Green
Battery cannot be charged	Orange Blinking
No Battery	Off
Fault or Over Temperature	Off

➡ **NOTE:**
> For information about charging a battery in auxiliary battery well, see Charging a Battery in the Auxiliary Battery Well.

Back Panel
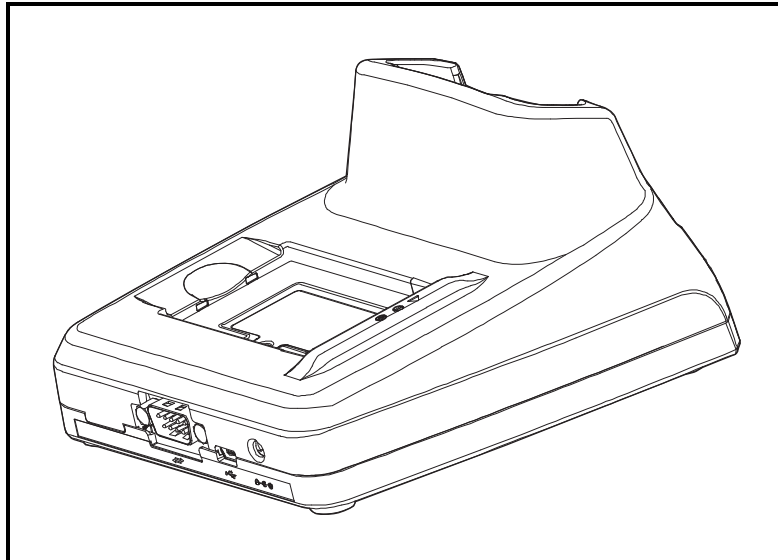
Figure 12-2.   HomeBase Rear View

Auxiliary Battery Well

The HomeBase can charge an additional Li-ion battery pack in 4 hours in the well behind the device. This feature lets you have a separate fully-charged battery for Dolphin 6000.

⇛ NOTE:
> See Charging a Battery in the Auxiliary Battery Well.

USB Port

USB PortThis USB Port is full-speed and 2.0 compliant. Using a USB cable, you can connect the base to a peripheral device, such as a workstation. When the terminal is seated in the terminal well, it is connected to the workstation device via the base.

RS232 Port

Use 9-pin, RS232 cable from Honeywell to connect this port to a peripheral device for RS232 data communication. For more information, see Serial Connector.

DC Power Jack

Use power cable from Honeywell that comes with HomeBase to supply power to this power jack. For more information, see Power section that follows.

Power

The device requires 5V, 2A DC input for communications and battery charging; the power adapter on power cable converts voltage from power source to 5V, 2A DC. Only the Honeywell 5 VDC, 2A power supply provided with HomeBase converts voltage correctly.

It is recommended that the HomeBase be left connected to its power source at all times, so that it is always ready to use.

1. Connect adaptor barrel plug to DC jack on rear panel of HomeBase
2. Plug adaptor AC to indoor wall receptacle

Serial Connector

The following diagram shows pin diagram of serial connector of HomeBase.

Table 12-1.   Serial Connector Pins

Pin	Description
1	N/C
2	TXD
3	RXD
4	DSR
5	GND
6	N/C
7	CTS
8	RTS
9	N/C

⇒ **NOTE:**

Signals referenced are for a DTE device. The HomeBase is at a right-angle to the printed circuit board (PCB).
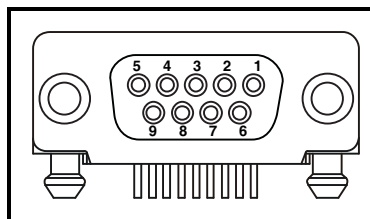

Figure 12-3.   Serial Connector Pins

Charging the Battery

The HomeBase powers the device and charges its battery pack in 4 hours.

The cradle knows when battery pack is fully charged and automatically changes to a trickle charge that keeps the battery at full capacity. The device can stay in the HomeBase without damaging the device or battery packs.

⇒ **NOTE:**
> To check battery power, use Power menu setting; see Power.

⇒ **NOTE:**
> For more information about Li-ion batteries, see Li-ion Battery Pack.

To Power a Device and Charge its Battery

1. Install battery pack in device. Refer to Install Main Battery Pack.
2. Connect HomeBase to power supply.
3. Put device into device well until HomeBase LED on the device turns Red, indicating that it is charging. Make sure the device is seated in order to see the red LED on device. The battery pack will begin to charge.
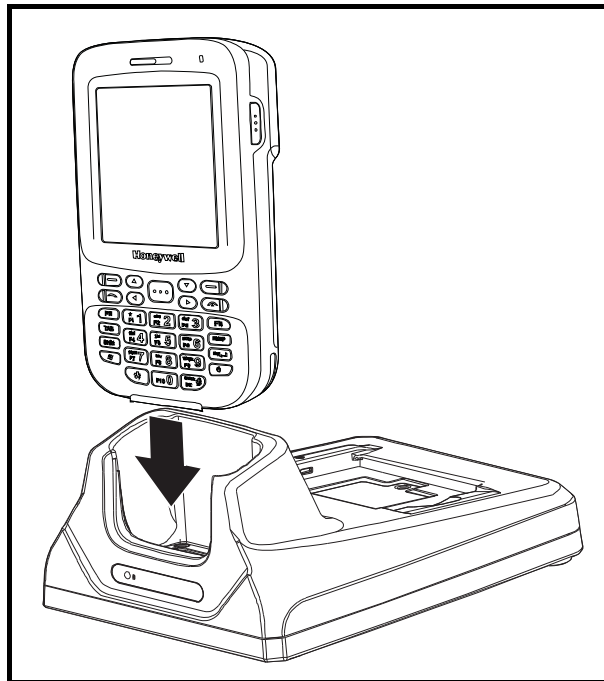
Figure 12-4.   Charging the Device

⚠ **CAUTION:**
> Make sure device is dry before putting it in HomeBase. Do not put a wet device in HomeBase! This can cause damage not covered by the warranty.

Charging a Battery in the Auxiliary Battery Well

The auxiliary battery well located is on the back of the HomeBase and charges a spare battery separately from device well. The Auxiliary Battery LED on front panel shows status of battery in this well.

Complete charge time is 4 hours.

1. Insert end of battery without locking tab into bottom of auxiliary well opening.
2. Put battery into place. The Auxiliary Battery LED becomes red.
3. See Auxiliary Battery LED to monitor charging progress.

Communication

USB

Dolphin 6000 devices support USB communications.

The HomeBase also supports USB communications via USB port located on back of cradle. The HomeBase can be a USB device by interfacing USB signals of Dolphin 6000 device to USB of host workstation. Using a standard USB cable, the HomeBase's USB interface lets Dolphin 6000 communicate with a workstation.

RS232

The HomeBase supports RS232 communications by RS232 Communications Port located on back of cradle. This port lets Dolphin 6000 device communicate to a workstation, modem, or any RS232 device when using a standard serial cable and communications software.

Requirements

- A HomeBase powered by a power cable and power adapter cable
- For RS232 communications, use serial cable
- For USB communications, use USB cable
- ActiveSync v4.5 or above on the host workstation
- Windows$^®$ XP 2003 Server, Windows Vista, or Windows 7 on the host workstation.

Connecting the Communication Cables

⟹ **NOTE:**
ActiveSync 4.5 or higher must be used.

1. Plug in power supply and connect to back of HomeBase.
2. Plug USB or RS232 communication cable into back of HomeBase.
3. Connect communication cable into back of workstation.

⟹ **NOTE:**
The hardware should be installed and operating. Workstation may need to be rebooted to complete the installation process.

Establishing Communication

USB or RS232 communication with the device is usually auto-detected and set by ActiveSync based on the communication cable. ActiveSync will usually set up a USB connection if using a USB cable to connect to workstation. ActiveSync will normally set up a RS232 connection if using a RS232 cable.

⟹ **NOTE:**
For more details, see ActiveSync Communication.

Communicating with the Dolphin 6000 Device

Verifying Communication

Verifying Data Transfer

RS232 Communications Cables
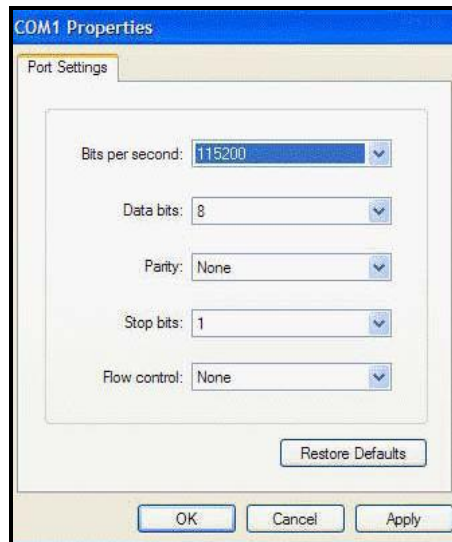
RS232 Pin Configuration

Figure 12-5.   COM1 Properties

FCC Hearing-Aid Compatibility (HAC) Regulations for Wireless Devices

On July 10, 2003, the U.S. Federal Communications Commission (FCC) Report and Order in WT Docket 01-309 modified the exception of wireless phones under the Hearing Aid Compatibility Act of 1988 (HAC Act) to require digital wireless phones be compatible with hearing-aids. The intent of the HAC Act is to ensure reasonable access to telecommunications services for persons with hearing disabilities. While some wireless phones are used near some hearing devices (hearing aids and cochlear implants), users may detect a buzzing, humming, or whining noise. Some hearing devices are more immune than others to this interference noise, and phones also vary in the amount of interference they generate. The wireless telephone industry has developed a rating system for wireless phones, to assist hearing device users find phones that may be compatible with their hearing devices. Not all phones have been rated. Phones that are rated have the rating on their box or a label located on the box. The ratings are not guarantees. Results will vary depending on the user's hearing device and hearing loss. If your hearing device happens to be vulnerable to interference, you may not be able to use a rated phone successfully. Trying out the phone with your hearing device is the best way to evaluate it for your personal needs.

M-Ratings: Phones rated M3 or M4 meet FCC requirements and are likely to generate less interference to hearing devices than phones that are not rated. M4 is the better/higher of the two ratings.

T-Ratings: Phones rated T3 or T4 meet FCC requirements and are likely to be more usable with a hearing aid's telecoil than phones that are not rated. T4 is the better/higher of the two ratings.

Dolphin 6000 complies with the FCC's requirements, and the M rating in this mode is M3 and the T rating in this mode is T3.

Your hearing device manufacturer or hearing health professional may help you find this rating. Higher ratings mean that the hearing device is relatively immune to interference noise. The hearing aid and wireless phone rating values are then added together. A sum of 5 is considered acceptable for normal use. A sum of 6 is considered for better use. A sum of 8 is considered for best use. In the above example, if a hearing aid meets the M2 level rating and the wireless phone meets the M3 level rating, the sum of the two values equal M5. This should provide the hearing aid user with "normal usage" while using their hearing aid with the particular wireless phone. "Normal usage" in this context is defined as a signal quality that is acceptable for normal operation.

This methodology applies equally for T ratings. The M mark is intended to be synonymous with the U mark.