



MobileMapper 10

Getting Started Guide

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Unpacking

Open the receiver box and unpack the following items:

- Receiver
- Battery
- Universal AC adapter
- USB cable
- Back strap
- Lanyard
- Stylus

Inserting the Battery Into the Receiver

Follow the instructions below:

- Turn over the receiver.
- Using a coin, rotate the two screws to open the trap door: turn the left-hand one clockwise by a quarter turn, and the right-hand one anticlockwise, also by a quarter turn.



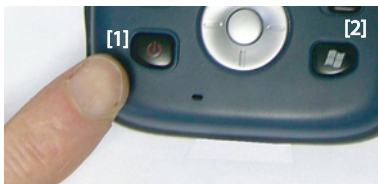
- Pull the trap door open.
- Insert the battery as shown. Orientate the battery so that its electric contacts can come into contact with those in the battery compartment. Insert the upper part of the battery first, as shown, then push the battery in.



- Put the trap door back into place by first inserting the two lugs located at the bottom of the trap door.

Turning the Receiver On

- Then push the door against the receiver case and rotate the two screws back in their initial positions to seal the battery compartment.
- Press the Power key [1] for a couple of seconds until you feel a vibration in your hand, then release the key.



Let the receiver run its boot sequence. Wait until the screen displays the Windows Mobile Home screen.

The operating system used in the receiver is Microsoft Windows Mobile Professional version 6.5. For more information on how to use the different applications, you can visit the Microsoft web site at:

<http://www.microsoft.com/windowsmobile/en-us/help/v6-5/Basics.aspx>

Depending on how long your product was stored in its package before being shipped to you, the remaining power in the battery may be too low to allow the receiver to operate for your entire working session. For this reason, the first thing to do is to check the **battery charge status**:

- Press the Windows key [2]
- Using the stylus or your finger, tap successively on the following function icons on the screen: **Settings**, **System** and **Power** (you need to drag the stylus upward on the screen to scroll down to the **Power** icon)
- The **Power** function shows the status of the battery. If the remaining power is greater than 50%, then you can use the receiver without having to charge the battery first (with 50% of remaining charge, you can use the receiver for several hours). Skip the next section and go to *Adjusting Backlight Level and Idle Time on page 4*.

If it less, Ashtech recommends you first charge the battery as explained in *Using the AC Adapter to Charge the Battery on page 3*.

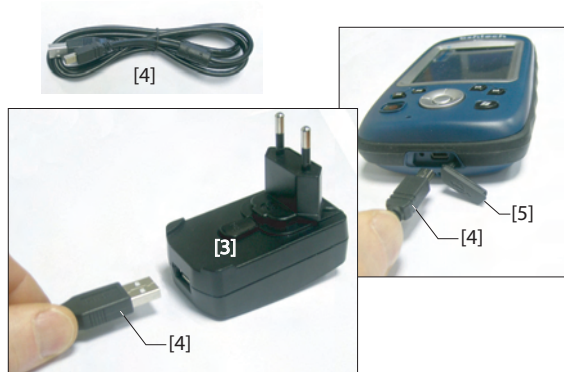
Using the AC Adapter to Charge the Battery

Follow the instructions below.

- Prepare the AC adapter:
 - Remove the protective cover [1] by pushing the button then sliding the cover forward.

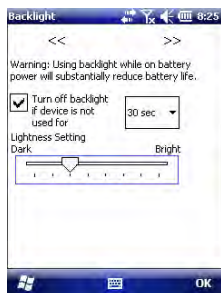


- Choose the plug that fits your country's AC outlet standard (see [2]) and slide it into the AC adapter [3]. (A "click" must be heard when fully inserted.)
- Take the USB cable provided [4]. Connect the end fitted with a standard USB connector to the AC adapter. Connect the other end (fitted with a mini-USB connector) to the bottom side of the receiver (open the flap [5] first).



- Connect the AC adapter to an electric outlet. The receiver screen lights up and an icon shows up indicating that the battery is being charged.
- Let the AC adapter charge the battery. To read the battery charging status, refer to the instructions in *Turning the Receiver On on page 2*. You may not wait until the battery is fully charged if you are in a rush, but you should make

Adjusting Backlight Level and Idle Time



Power Management

sure the battery charge status is at least 50% before taking your receiver for a field job.

- When you are done with the charging of the battery, disconnect the USB cable from the receiver, put the AC adapter safe away and proceed to the next step.

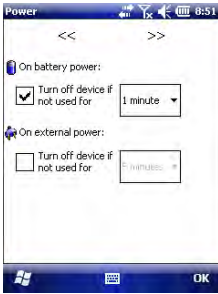
Backlight Level: The screen backlight may be adjusted to match the ambient light for optimized visibility. You don't need the same level of screen backlight in dark areas than in hot sun.

Backlight Idle Time: One way of saving the battery is to avoid those periods of time during which the screen backlight is unnecessarily on. As the receiver automatically counts the time during which neither the keypad nor the touch screen is active, you can set the receiver to turn off the backlight automatically after a certain idle time.

Follow the instructions below to set these two parameters:

- Press the Windows key and tap successively on **Settings**, **System** and **Backlight**.
 - Tap on the **Battery Power** tab.
 - Drag the cursor to the right or left to set the screen backlight to the desired level (between **Dark** and **Bright**). The resulting brightness is obtained when you release the cursor.
 - Tick the **Turn off backlight if device...** check box and then choose the idle time before the backlight is turned off (10 seconds, 30 seconds or 1 to 5 minutes)
- Note that the backlight level and idle time can be set to different values for when the receiver is operated from an external power source instead of its internal battery. You can make these settings after tapping on the **External Power** tab.
- Tap **OK** to save all your changes and return to the previous screen.

A better way of saving the battery is to allow the receiver to switch automatically to Suspend mode after a certain period of inactivity.

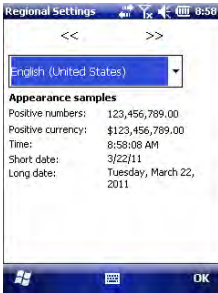


- Press the Windows key and tap successively on **Settings**, **System** and **Power**.
- Tap on the **Advanced** tab. This tab allows you to ask for the receiver to switch automatically to Suspend mode if it stays idle for the period of time you choose. You may choose a different setting depending on whether the receiver is powered from the internal battery or from an external power source.
- Tap **OK** to save the settings and return to the previous screen.

Setting Time & Date

- Press the Windows key and tap successively on **Settings**, and **Clock & Alarms**.
- On the **Time** tab, select your time zone and then enter the local date and time.
- Tap **OK** to save your settings.

Regional Settings



It's a good idea to customize your receiver so that it complies with a number of local preferences, such as country's currency, decimal point representation, time and date formats, etc.

- Press the Windows key and tap successively on **Settings**, **System** and **Regional Settings**.
- On the **Region** tab, select your country.
- Use the other tabs to set your local settings:
 - Number format
 - Currency choice
 - Time and date formats
- Tap **OK** to save the settings and return to the Today screen.

Locking the Screen and the Keypad

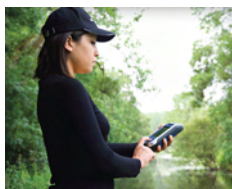
At some stage in your work, you may need to lock the receiver to make sure no user intervention from the screen or keypad can affect the work in progress.

- Press the Windows key.

- In the task bar at the bottom of the screen, tap on the padlock icon (see screen below). As a result, the touch screen and keypad are made inactive.
- To unlock the touch screen and keypad, just drag the on-screen slide button either to the left or right. This will take you back to the Home screen.



How to Hold the Receiver



Tracking satellites with your receiver requires that you use the receiver outdoor and hold it in an appropriate manner.

The receiver will have the best view of the sky when you hold it at an angle of around 45 degrees from horizontal and not too close to your body.

You can check that your receiver is tracking enough satellites by running the GNSS Toolbox, and more particularly the GNSS Status function (see *GNSS Status on page 11*). When enough satellites are tracked, you can start using your receiver and run your application software.

Using the Quick Toolbar



Windows Mobile offers a quick toolbar allowing you to quickly access frequently used functions (zoom, connectivity, phone, sound volume, battery power and clock).

- Tap on the title bar at the top of the screen. The quick toolbar appears just underneath.
- Run the desired function by just tapping on the corresponding icon. This runs the requested function and simultaneously closes the quick toolbar.

The zoom function enlarges the screen content, which means only part of the screen is shown at a time, and so

you should drag the stylus over the screen to scroll through the whole data displayed.

To return to 1:1 zoom, just tap on the title bar again to re-open the quick toolbar, and then tap on the zoom function again.

Switching the Receiver Manually to Suspend Mode

Switching the receiver to Suspend mode is the right thing to do when you need to make a short pause in your work and you want to save the operating time of your battery.

In Suspend mode, the receiver uses a minimum of energy: the screen content and backlight is off. The receiver however continues to track satellites and the use context is saved.

To switch to Suspend mode, just press briefly on the Power button **[1]**. The receiver screen is turned off instantly.

To wake up the receiver, just press briefly the same button again. This will instantly switch the screen back on and restore the use context in which the receiver was before entering the Suspend mode.

Turning the Receiver Off

After you have finished your work, turn off your receiver by holding the Power button **[1]** pressed until a Warning message is displayed on the screen asking you to confirm the power-off request. Tap **Yes**. The receiver will shut down in the next couple of seconds after a duo-tone sound has been heard.

Front View **Power Key**

Use the Power key [1] to turn on or off the receiver.

To turn on the receiver, press the Power key [1] until you can feel a vibration in your hand, meaning the receiver has started a power-on procedure. You can then release the key.

To turn off the receiver press the Power key [1] until a sound is heard and a warning message pops up on the screen asking you to confirm the power shutdown request. Tap **Yes** on the screen. A two-tone sound can then be heard just before the receiver shuts down.

Windows key

The Windows key [2] is used to give immediate and unconditional access to the Windows Start menu.

Display Screen

The display screen [3] is a 3.5-inch, QVGA, 256-color (18-bit RGB) touch screen (240 x 320 pixels).

Scroll / Enter keys





The Enter button [4] is used to accept highlighted input and initiate various functions.

The Scroll button [5] is the ring around the Enter button. It is used to move the cursor on the screen, from one data field to the next on a parameter screen, from one option to another in a menu, from one geographical location to another on a map screen.

Function keys

The receiver is fitted with four function keys [6]. The specific function of each of them is given in the table below.



Button	Function
	The keypad includes two of these buttons, one on the right, the other on the left. Each of them is a convenient alternative to tapping on the functions appearing just above in the task bar at the bottom of the screen (e.g. Notifications, Contacts, Menu, Log, etc.).
	
	Use this button to enlarge the map displayed on the screen (zoom in).
	Use this button to reduce the map displayed on the screen (zoom out).

Microphone

A microphone is used by the voice recorder. Keep the small aperture [7] clear when recording a vocal comment.

Built-in GPS Antenna

The receiver incorporates a built-in GPS antenna [8]. The receiver should be held properly to optimize satellite reception.

Earpiece

As a multi-media device, the receiver includes an earpiece [9], which can be used by any voice-based software application.

Rear View



External GPS Antenna Input

Use this input [10] to connect an external GPS antenna to the receiver. When an external antenna is connected, the built-in GPS antenna is automatically disconnected from the receiver input.

The antenna input connector is protected by a rubber flap. Although a waterproof coaxial connector is used, Ashtech recommends you keep the flap close when no external antenna is used.

Loudspeaker

As a multi-media device, the receiver includes a high-quality loudspeaker [11], which can be used by any voice-based software application.

Camera Lens

Keep the camera lens [12] clear when taking pictures or recording videos.

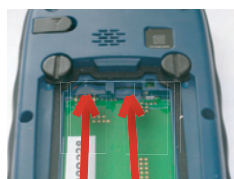
Back Strap

The back strap provided may be attached to the back of the receiver through two threaded holes [13] and [14] and the two recesses located at the bottom of the receiver (see Bottom View below).

The back strap may also accommodate the stylus, which can also be attached to the leather strip of the back strap using the lanyard provided.

Using the back strap allows you to hold the receiver and the stylus around your forearm while keeping your hand free for some other tasks.





[18] [19]

Battery Compartment

The receiver makes use of a rechargeable Li-Ion battery pack. Loosen the quarter-turn screws [15] [16] using a coin to access the battery compartment [17]. The two screws use opposite directions of rotation for opening and closing the trap door.

The battery compartment can also accommodate a SIM card [18] and a micro SD card [19].

When putting back the trap door, insert the bottom first, push the trap door against the back of the receiver and seal the battery compartment by fully rotating the two screws in the opposite direction.

Information on battery charging: see ??.

Bottom View



The bottom view provides access to a standard mini-USB connector [20]. You first need to open the protective rubber flap [21], using a finger nail or a sharp and rigid tip to pull the flap from its left-hand side.

The mini-USB port is used to connect the receiver to the AC adapter, for a fast battery charging cycle, or to a computer for file transfer through Microsoft ActiveSync. In both cases, you need to use the USB cable provided.

Information on battery charging: see ??.

The bottom part of the receiver also accommodates a Reset button [22], which is accessible after you have opened the rubber flap [21].

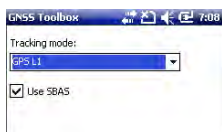
The bottom view also shows the two recesses [23] in which the back strap [24] can be anchored.



GNSS Toolbox is used to control and monitor important functions in your receiver. These are listed and detailed below.

- **GNSS Settings:** Constellations and frequencies used in the receiver.
- **GNSS Status:** Views GNSS reception monitoring screens.
- **Reset:** Resets the receiver.
- **About:** Provides the software version of GNSS Toolbox.

GNSS Settings



- Open the **GNSS Toolbox** and tap on **GNSS Settings**. This opens a new window where you can make the following settings:
 - **Tracking mode:** Only the “GPS L1” option is available, which means the receiver can only operate from the L1 signal of the GPS constellation.
 - **Use SBAS** check box: Check this box to enable SBAS reception, clear it otherwise.
 - **Elevation mask:** Any satellite seen from the receiver with an elevation angle less than the specified elevation mask will be rejected. “5 degrees” is the default and recommended value for this parameter.
- Tap **OK** to confirm your choices and return to the GNSS Toolbox window.

GNSS Status

- Open the **GNSS Toolbox** and tap on **GNSS Status**.



The default **Position** tab shows the latitude, longitude and altitude of the current position, as computed by the receiver, as well the number of satellites used and the current PDOP value.

If SBAS is used, the screen also shows the position status (DGPS) and the age of corrections.

The unit used to express the current altitude (meters or feet) depends on the region (language and country) you selected in **Start, Settings, System, Regional Settings**.

- The **Satellites** tab displays a polar diagram showing the locations in the sky of the tracked satellites. Different colors are used to display the numbers of the visible satellites:
 - Yellow characters: GPS satellites used
 - Grey characters: Visible SBAS satellites. Also rejected GPS satellites, because unhealthy or under the elevation mask.

- The **Signal** tab shows the signal level for each of the tracked satellites:
 - Dark blue bars for all GPS satellites used
 - Red bars for all SBAS satellites used
 - Grey bars for all tracked, but not used, GPS satellites

GPS satellites are numbered from 1 to 32 and SBAS satellites from 120 to 138.

- Reset**
- Open the **GNSS Toolbox** and tap on **Reset**. A message then asks you if you want to reset the receiver now. Use this option only if you think the receiver is not working properly.

Using this function results in a *cold reset* of the receiver. Through a cold reset, all the GNSS settings, including almanac data, are cleared making it necessary for you to restore each of them manually. A few minutes are needed after a cold reset before the receiver is back to work.

Using the Reset function is recommended when only the GNSS Toolbox (and not other field software) is running on the platform.

- About** This function provides the software version of GNSS Toolbox, followed by the Ashtech legal line.

Power Modes

The receiver has three power modes:

- *Shutdown*: The receiver is off.
- *On*: The receiver is fully powered
- *Suspend*: In this mode, the screen content and backlight are turned off to save power. Satellite reception is maintained and the use context is saved. When quitting the Suspend mode, the use context is restored instantly. Typically this mode is used in the field to allow a quick restart after a pause.

The receiver can also enter the Suspend mode automatically in case of a very low battery after dismissing successively the two “low battery” alerts, or after an idle time that you can set through a press on the Windows key, and selecting Settings, Power (Advanced tab) (See also *Power Management on page 4*).

Internal Battery

Monitoring the Battery Discharging Status

The receiver will continuously inform you of the current status of the battery through an icon located in the Windows Mobile title bar (on the right). The different shapes of this icon indicate the current discharging status, as listed below:



Icon	Meaning
	Battery high: Remaining power ranges between approximately 75 and 100% of full charge.
	Approx. 50-75% remaining
	Approx 25-50% remaining
	Approx. 10-25% remaining
	Battery low: Remaining power is less than 5%.
	Receiver powered from external source (AC adapter, computer via USB line)

At any time you can read more in detail the battery status by pressing the Windows key and then selecting **Settings, System, Power** (see screen example).

When the remaining power drops below 10% of full charge (orange area), you will see the message “Main Battery Low” prompting you to replace or recharge the battery. Tap **Dismiss** in the task bar. You should consider replacing the battery for

a fresh one but you may still continue to use the receiver for a while.

With only about 5% of remaining power (red area), a new message will pop up: “Main Battery Very Low”. Tap **Dismiss** in the task bar to continue using the receiver. Ashtech however recommends that you turn off the receiver and replace the battery.

With only about 1% of remaining power, the receiver will switch off, meaning the battery is no longer charged enough to ensure proper operation of the receiver. Ashtech recommends you do not go that far in the use of the internal battery as there is a risk of losing part of your field data.

In case of long-time storage, remember Li-Ion batteries must always be recharged regularly, about every six months. This is to prevent irreversible damage of the batteries.



Battery Charging Scenarios

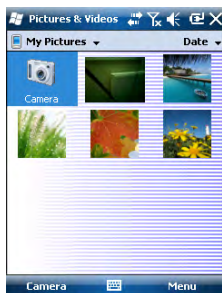
The battery can be be charged in two different ways:

- From the power line, through the AC adapter and USB cable provided. This configuration offers fast battery charging, with around 700 mA of DC charging current.
- From an office computer connected to the receiver through a USB line, using the same USB cable provided. According to the USB 2.0 specification, the DC current delivered will be limited to 500 mA, which means it will take longer to charge the battery from a computer’s USB port than from the AC adapter.

You can ask the receiver not to allow the charging of the battery through the USB port when this port is connected to a computer. To do this:

- Press the Windows key
- Select **Settings, System, Power**
- Clear the option: **When equipment opens and links to PC, do not carry out battery charging**
- Tap **OK**.

Using the Camera

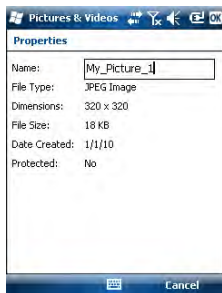


Taking a Picture

- Press the Windows key and tap **Pictures & Videos**. This opens the “My Pictures” folder in which you can see the list of existing images and videos. The first item in the list is the Camera, the tool you will now be using to take pictures. The light-blue background means the camera is currently selected.
- Tap **Camera**, or press the Enter button, to turn on the camera. Wait a couple of seconds until the center of the window displays the viewfinder of the camera.
- Now use the receiver as a camera. Look at the viewfinder to frame the picture you want to take.
- When you are ready, stay as still as possible and press the Enter button to take the picture. When you hear the click of the camera, stay still for another two seconds until the screen displays the picture you have just taken.
- Tap **OK** to come back to the viewfinder, then tap anywhere on the screen to re-activate the task bar at the bottom of the screen.
- Tap **OK** to turn off the camera and close the window. The picture you have taken is now visible in the “My Pictures” folder.

Renaming a Picture

- With the “My Pictures” folder open, tap on the desired picture. This opens a new window showing the picture.
- Tap **Menu** and **Properties**.
- Rename the file and tap **OK**.



Rotating a Picture

- With the “My Pictures” folder open, tap on the desired picture (or tap on **View** in the task bar). This opens a new window showing the picture.
- Tap **Menu** and **Edit**.
- Tap **Rotate** in the task bar. This rotates the image 90° clockwise. Repeat the operation until the image has the right orientation.
- Tap **OK** to save the image.

Cropping a Picture

- With the “My Pictures” folder open, tap on the desired picture (or tap on **View** in the task bar). This opens a new window showing the picture.

- Tap **Menu** and **Edit**.
- Tap **Menu** again and select **Crop**.
- As instructed, drag a rectangle on the picture representing what the final image should be like, then tap inside the rectangle to complete the crop operation. If you're not happy with the result, you can always come back to the initial image by selecting **Menu** and **Revert to Saved**.
- Tap **OK** to save the picture.

Auto-correcting a Picture

- With the "My Pictures" folder open, tap on the desired picture (or tap on **View** in the task bar). This opens a new window showing the picture.
- Tap **Menu** and **Edit**.
- Tap **Menu** again and select **Auto Correct**. This refines the picture's brightness, contrast and colors.
- Tap **OK** to save the picture.

Deleting a Picture

- With the "My Pictures" folder open, tap and hold the desired picture.
- Select **Delete** in the context-sensitive menu.
- Tap **Yes** to confirm file deletion.

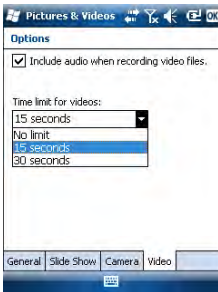
Changing Picture Settings

- Press the Windows key and tap **Pictures & Videos**. This opens the "My Pictures" folder.
- Tap **Camera** to turn on the camera. Wait a couple of seconds until the center of the window displays the viewfinder of the camera.
- Tap on the screen to re-activate the task bar, tap **Menu**, then **Resolution**. Choose one of the dimensions available (expressed in pixels). The resolution setting impacts the quality and size of the picture you take.
- Tap **Menu**, then **Mode**. Choose between **Normal** (one picture taken), **Burst** (five pictures taken at a one-second interval once you have pressed Enter) and **Timer** (picture taken 5 seconds after pressing Enter).

Making a Video

Setting the Duration of a Video Film

- Press the Windows key and tap **Pictures & Videos**. This opens the "My Pictures" folder in which you can see the list of existing images and videos.
- Tap **Menu**, **Tools** and then **Options**.



- Tap on the **Video** tab.
- Tap within the **Time limit for videos.** field and select one of the options below:
 - **No limit:** Choose this option to be able to film a video over an unlimited period of time.
 - **15 seconds:** Choose this option to limit the duration of every video you'll film to 15 seconds.
 - **30 seconds:** Choose this option to limit the duration of every video you'll film to 30 seconds.
- Tap **OK** to accept the changes and close the Options window.


Starting a Video

- Tap **Camera** to turn on the camera. Wait a couple of seconds until the center of the window displays the viewfinder of the camera.
- When you are ready to film, tap **Menu** and then **Video**.
- Press the Enter button to start filming.

Ending a Video

- Depending on the video settings, the video camera will stop filming as explained below:
 - With a preset time limit (15 or 30 seconds), the video camera will stop filming automatically and close the video file after this time has elapsed. A down counter under the viewfinder will keep you informed of the remaining time as you film.
 - With no time limit, the video camera will film indefinitely. A counter under the viewfinder will tell you the current duration of the video. To stop filming and close the video file, press the Enter button again.
- At the end of the video shooting, the viewfinder freezes while the end of the video is being processed.
- When the spinning hourglass disappears, tap **OK** to turn off the camera and close the window. The video file you have created is now listed in the “My Pictures” folder.

Playing Back a Video

- With the “My Pictures” folder open, tap on the desired video file. This will automatically launch the Windows Media player.
- Tap  to close Windows Media player and return to the “My Pictures” folder.

Renaming a Video

- With the “My Pictures” folder open, select the desired video file using the Scroll button.
- Tap **Menu, Tools** and then **Properties**.
- Rename the file and tap **OK**.

Deleting a Video

- With the “My Pictures” folder open, tap and hold the desired video file.
- Select **Delete** in the context-sensitive menu.
- Tap **Yes** to confirm file deletion.

Voice Setting

For best quality voice recording, you need to change the default voice sampling setting as follows:

- Press the Windows key and run **Notes**.
- If this action directly opens a note file, please close it before proceeding.
- Tap **Menu>Options**.
- Tap on the **Global Input Options** hyperlink.
- Tap on the **Options** tab.
- Select “44,100 Hz, 16 Bit, Mono (86 KB/s)” from the **Voice recording format** drop-down list.
- Tap to enter the new setting.
- Tap then to return to the screen.

- GNSS Characteristics**
- 20 channels
 - GPS L1 C/A
 - SBAS: WAAS/EGNOS/MSAS
 - External antenna: L1 GPS
 - NMEA Output: GGA, GSA, GSV, RMC

- Accuracy Specifications**
- All specified values are HRMS, handheld accuracy performance achieved in good conditions (open sky) with PDOP < 3 and more than 7 satellites in view.
- Real-time SBAS: <1 m typical
 - Post-processed: <0.3 m typical

- Processor**
- ARM9
 - Clock frequency: 600 MHz

- Operating System**
- Microsoft Windows Mobile Professional version 6.5
 - Installed language at delivery: English, French, Spanish, German, Portuguese, Italian, Simplified & Traditional Chinese, Japanese or Korean. Installed OS language cannot be changed once the product has been shipped in a given language.
 - Software package includes:
 - Internet Explorer
 - Microsoft Office Mobile
 - ActiveSync
 - Transcriber (handwriting recognition)

- Communication**
- Cellular:
- Built-in GSM/GPRS
 - Quad-band, 850/900 MHz, 1800/1900 MHz

- Bluetooth:
- Bluetooth 2.1 with EDR
 - Bluetooth profiles: SPP, DUN, FTP, OPP, HSP, A2DP

- WiFi:
- Integrated

- Interface:
- USB

Physical Characteristics

- Receiver size: 169 x 88 x 25 mm
- Receiver weight (batteries included): 380 g
- Receiver weight, alone: 310 g

User Interface

Keyboard:

- Alphanumeric virtual keyboard
- 4-way navigation scroll button; OK, Zoom In/Out keys + context-sensitive keys
- Illuminated keyboard

Display Screen:

- Color TFT, high-resolution display, sunlight readable, with touch screen, LED backlight
- Size: 3.5", portrait

Memory

- 128-MB SDRAM
- 256-MB NAND Flash (non-volatile)
- Micro SDHC memory card (up to 8 GB, Sandisk, Kingston recommended)

Environmental Characteristics

- Operating temperature: -10° to +60°C (14 to 140°F)
- Storage temperature: -30° to +70°C (-13 to 158°F)
- Humidity: 95% non condensing
- Waterproofness: IP54
- Free drop: 1.2 m on concrete

Power Requirements

- Battery life: > 20 hours @ 20 °C, with GPS on, Bluetooth and WiFi disabled, and screen backlight used at minimum level 20% of the time.
- Charging time: 4 hours
- Removable battery

Multimedia & Sensors

- 3-Megapixel camera
- E-Compass
- G-Sensor
- Speaker
- Microphone

Standard Accessories

- Stylus
- Handstrap
- Universal AC adapter
- USB data cable.

MobileMapper 10

Getting Started Guide

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Manual Requirements according 15.19 / RSS-210

NOTICE:

This device complies with Part 15 of the FCC Rules [and with RSS-210 of Industry Canada].

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and*
- (2) this device must accept any interference received, including interference that may cause undesired operation.*

Manual Requirements according 15.21

NOTICE:

Changes or modifications made to this equipment not expressly approved by (manufacturer name) may void the FCC authorization to operate this equipment.

Manual Requirements according 15.105

NOTE: *This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:*

- Reorient or relocate the receiving antenna.*
- Increase the separation between the equipment and receiver.*
- Connect the equipment 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.*

Manual / Label requirements according ICES-003

NOTICE:

This Class [B] digital apparatus complies with Canadian ICES-003.

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

NOTICE:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

[Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.]

SAR Information:

The SAR limit adopted by USA (FCC) is 1.6 Watts/kilogram (W/kg) averaged over one gram of tissue. Device types (**FCC ID: NZI802140**) has also been tested against this SAR limit. The highest SAR value reported under this standard during product certification for the body is **0.792** W/kg. This device was tested for typical body-worn operations with the back of the handset kept 0 cm from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain a 0 cm separation distance between the user's body and the back of handset. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.