Personal Digital Assistant (PDA) for Mosquito Field Sampling

User Guide

Version 2
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PDA for Mosquito Field Sampling – User Guide

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Background

Personal Digital Assistants or PDAs, specially modified for mosquito sampling data collection have been supplied to each Public Health Service. These handheld PDAs are simple to use, and save on time and equipment, no sample sheets, notebooks, pens or clipboards, or separate GPS units. They reduce the amount of data entry and negate the risk of transposition errors by uploading directly to the online national mosquito database.

The PDA Kit

Each PDA unit was issued preloaded with software and equipped with a power cord, batteries, cradle, GPS expansion pack, car charger, and car holder.

The PDA

PDAs can be used to access a wide range of functions normally carried out at your computer. These include email, contact details and calendar (see Figure 1 for their locations).

Each PDA unit contains a special PDA Pen or stylus (Figure 1a), slotted inside the top of the PDA, towards the right corner (Figure 1b). Push the top of the pen into the unit, so it pops up and you can pull it out. Ensure you replace it after each use, so you don't lose it in the field. Use only this pen on the unit to protect the screen from damage from non-suitable objects.

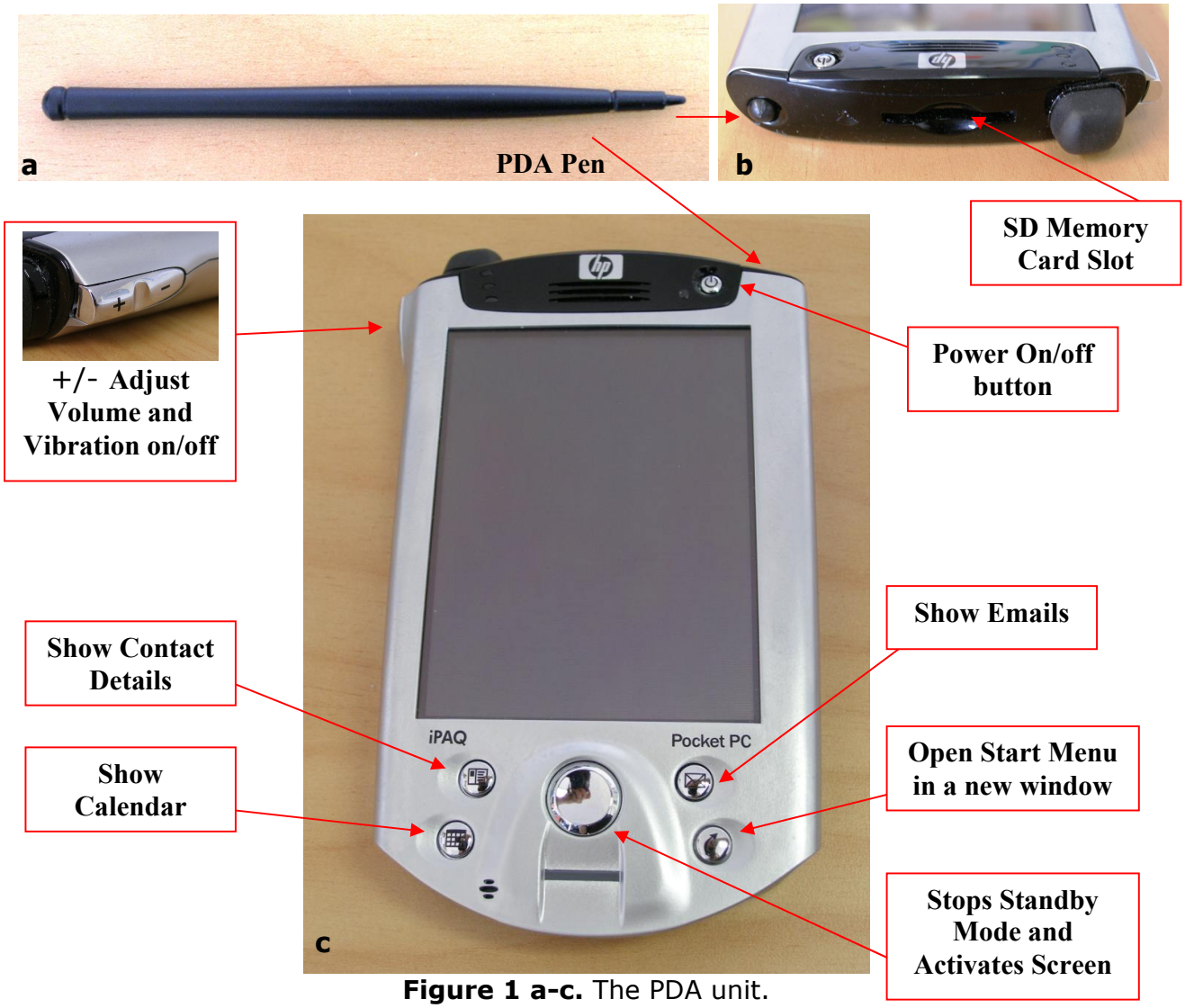

Figure 1 a-c. The PDA unit.

The Sampling Software

Each PDA was issued complete with the mosquito sampling sheets loaded as standard. They can be personalised for your PHS region, or a particular PHS sample collector by incorporating lists of your regular sites (e.g. ovitrap locations), so you just select from the drop down menu when in the field (see PDA Operation).

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The Batteries

Each PDA unit has two batteries, one main and one backup. The batteries are rechargeable and come as standard with the unit. They will last about a week, if the PDA is not continually used, and is turned off when not in use. **The unit must retain some charge at all times**. If allowed to fully discharge, the unit will reset to factory settings and the sampling programming, as well as all personal settings, will be lost. In this situation, the unit will need to be restored to a working state at the NZBEL, or if you have a SD memory card backup, the unit can be restored from there. Contact Mark for more information on how to do this.

The backup battery is purely to protect your unit from loss of settings and software. This will last for up to 36 hours after the main battery has lost power. **You will not be able to operate the PDA from the backup battery**.

The batteries need to be recharged while inside the PDA using the cradle or car charger provided with the unit (see Cradle and Car Charger sections). A full recharge on the mains takes about 1.5 hours.

You can check how much battery life you have left, by clicking 'Start', 'Settings', the 'System' tab, and 'Power'. On the 'Main' page, you can see how much life each battery has remaining. From this page you can also select how long the unit remains on using battery or external power when not in use, before switching itself off (1-5 mins for battery, 1-30mins for external).

The 'Standby' tab allows you to alter the period of time the backup battery is required to maintain the unit after it has been left on unattended for a significant amount of time. This should always remain set at 72 hours to ensure your unit will last the maximum time possible before any data or settings are lost. [NB. Setting this to 72 hours does not mean the backup battery will last 72 hours, you should assume about 36 hours as specified above.]

The 'USB Charging' tab allows you to enable USB Charging and select fast or slow charge. USB Charging and Fast Charge should remain checked.

The GPS Expansion Pack

Each PDA has been fitted inside a NAVMAN GPS expansion pack (Figures 2a&b). This black sleeve operates off the PDA batteries, and should be left attached to the PDA, as the sleeve forms a good protective shell. If the sleeve becomes detached, slide the PDA carefully towards the base of the GPS sleeve until they click together. If the PDA is on, you will hear a sound indicating when they are locked together, and a window will pop up saying "Initialising…". This will disappear once the initialising process is complete.

[NB. The drivers for the GPS are part of the Sampling Software. If the unit has lost all data from being fully discharged, the GPS will no longer be recognised. Contact Mark at NZBEL for assistance with this.]

Figure 2 a. Navman GPS Sleeve **b.** PDA Unit in Sleeve

The Cradle

The PDA and GPS sleeve slide into a cradle which connects into mains power or your computer (Figures 3a&b). Always leave your PDA in the cradle plugged into either the mains or the computer, when not in use. If you leave your PDA continually plugged into the computer, periodically you will be asked to connect to mains power to fully recharge the batteries.

Figure 3 a. PDA Cradle **b.** PDA in Cradle

NB. If the PDA batteries run down and the machine switches off, you will lose your data and the sampling software which will need to be reloaded at the NZBEL.

The Car Charger
Each PDA unit was supplied with a car charger which operates through the car's cigarette lighter (Figure 4a). These are particularly useful when the PDA is being used continually for an entire day or consecutive days, as the PDA batteries can be "topped up".

Figure 4 a. Car Charger **b.** PDA Car Holder

The Car Holder
A car holder was also supplied with each PDA unit (Figure 4b). It has a suction attachment on one end which attaches to the car window and can be locked in place, while the PDA slides into the other end. The holder allows the PDA to be visible to e.g. the driver without holding the unit, and it is less likely to be damaged.

Additional Accessories

SD Memory Card
An SD Memory card slots into the top of the PDA unit (Figure 1b) and can be used to automatically perform a backup to the SD card. These can be purchased from most digital photography or electronics stores. For further information and instructions on this type of backup, please contact Mark at NZBEL.

PDA Operation

Starting Up
Switch the unit on using the silver "ON" button and you should see a blue and green landscape background (Figure 5a). [If not, use the PDA pen to close any open pages by tapping the close button, a blue cross in a white circle in the top right corner.]

You can change the background picture to your own photograph if you wish. The photo must be loaded onto the PDA before it can be used as a background. Contact Mark at NZBEL if you need help with this.

Entering a New Sample
To begin entering a new sample, you need to open up the electronic sample form.

- Tap the "START" menu (top left-flag) and a drop-down menu will appear (Figure 5b).
- Tap the "INTERNET EXPLORER" option on the menu and this will open the sampling page. You should see a screen entitled 'Sampling Application Menu' (Figure 5c). [If not, it is because last time it was not closed down properly - you can get to the 'Sampling application menu' page by tapping on the house in the middle of the bottom of the screen. NB. This access method can be used anytime you want to go to this page.]

Figure 5 a. Default Background **b.** Start Menu **c.** Sampling Application Menu

- On the first line titled 'New', tap the "SAMPLE" button and a new form will open up (Figure 6a).

The Electronic Sample Form
Each form has a scroll bar on the right hand side to allow easy manoeuvring through it. The form contains fields you need to supply information into i.e. **Sample Number, Location, Date, Rainfall, Rainfall Affected, Tide, Tide Affected, Dry, Dips, +VE Dips** and **Pupae**. Some fields are drop-down menus (Figure 6a), some are check boxes and others will need you to manually type in the data (Figure 6b).

- As usual for drop-down menus, just tap the correct option and move onto the next box.
- Check boxes should only be checked for the affirmative, i.e. the site was rain or tide affected, or dry.

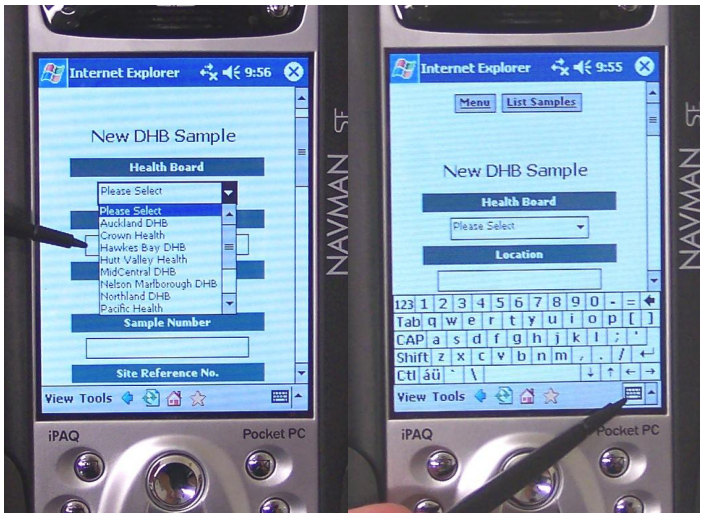

Figure 6 a. New Sample Form **b.** Keyboard for Typing

- To type data in, tap the relevant field where you want to enter the text and a keyboard will appear at the bottom of the screen (Figure 6b). [NB. You can bring the keyboard up or make it go away at any time by tapping the keyboard button on the bottom right of the screen, just below the left arrow (Figure 6b).]
- To type over existing data, e.g. the zeros already present in some fields, slide the PDA pen over the data to highlight the data, and tap in the new information on the keyboard. [If your keyboard does not appear and you see something else e.g. a freehand writing area, it is because the unit settings have been changed. You can change them back by tapping the up arrow on the bottom right of the screen, choosing "KEYBOARD" from the list and the keyboard will appear.]

Capturing GPS Coordinates

NB. Every sample site should have a GPS reading, especially incursions and interception.

- To record GPS coordinates, tap the "CAPTURE GPS" button on the sample form and a 'Capture GPS Information' screen will appear (Figure 7a).
- Tap the "ACTIVATE GPS" button. If you see "GPS not found", tap the "ACTIVATE GPS" button again. You should now see "GPS Found, COM4 57600" (Figure 7b).
- Tap the "CAPTURE POSITION" button to record the coordinates (Figure 7b). This may take some time for the first set for the day/area, but the coordinates should appear in the 'Easting' and 'Northing' boxes. If you get zeros in the boxes, try tapping the "CAPTURE POSITION" button again.
- Once your GPS coordinates have appeared tap the "OK" button at the bottom of the page (Figure 7b) and you will be returned to the sample form.
- Scroll through to the bottom of the sample form where your coordinates will now be recorded.

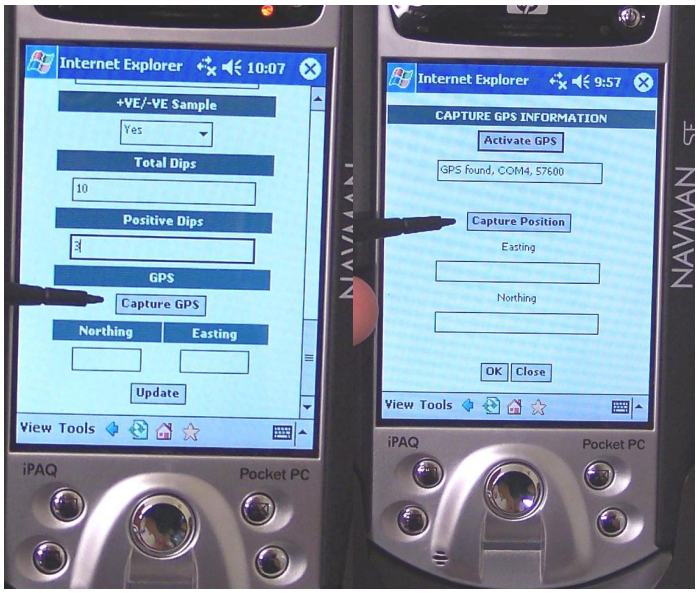

Figure 7 a. Capture GPS **b.** Capture GPS Information Screen

Saving the Sample Record

Now that all the information for your sample has been entered, you need to save it to the PDA.

- Tap the "UPDATE" button at the bottom of the sample form (Figure 8a). **NB. IF YOU DO NOT UPDATE THE RECORD, IT WILL NOT BE SAVED.**
- Now you will see a screen that lists all your samples, including the one you have just saved (Figure 8b).

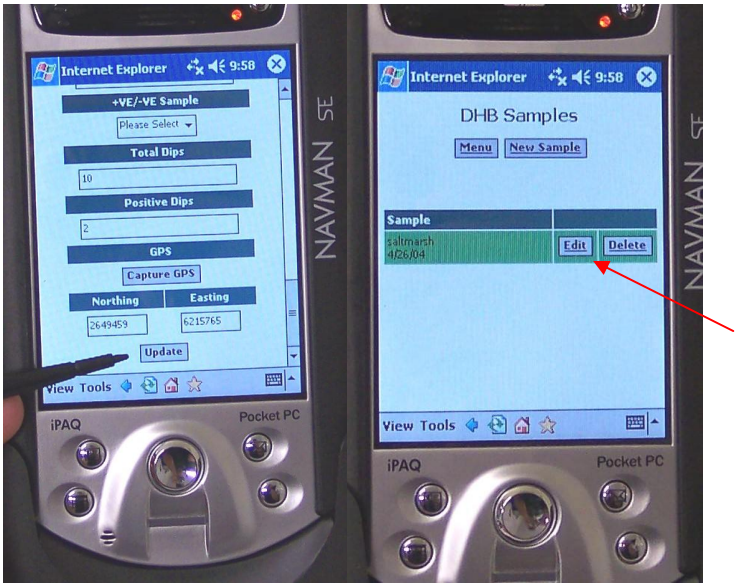

Figure 8 a. Saving your Sample **b.** Sample List and Editing

Additional Samples

- If you are ready to enter another sample, tap the "NEW SAMPLE" button to continue with a new sample sheet.
- To finish entering samples, tap the "MENU" button or the house icon (bottom middle of the screen) to return to the 'Sample Application Menu' page.

Editing an Existing Sample

If you need to change the information for any of your samples, you can edit them, on the PDA.

- Tap the "EDIT" button next to the sample in question, scroll through and change the data required (red arrow - Figure 8b).
- Press the "UPDATE" button to save the changes.

Uploading the Sample Information

- When you return to base, place the PDA unit carefully into the cradle, attached to a computer and turn the computer on (if it isn't already).
- The computer will ask whether you want to "Set up a partnership" (Figure 9), select "NO" and click "NEXT". A window called 'Microsoft Activesync' will open, it should contain the word 'Connected' and there should be a green, circular icon, near the clock on the computers task bar (bottom right corner). When this has happened, you are ready to export your samples to the database.
- On the PDA's 'Sampling Application Menu' page, tap the "EXPORT SAMPLES" button. The unit will work for a few seconds and should then report that your records were sent successfully. [NB. If this does not work you may need to contact your IT department to have the unit reconfigured for your network. All units worked when originally distributed, however any subsequent network IP or proxy changes will need to be reprogrammed onto the PDA.]
- Your sample records remain saved on the PDA unit after you export them. They can be viewed from the List samples page, by selecting "uploaded" from the Show drop-down menu. [NB. If an error occurs during upload, and the samples have not actually left the PDA unit, they will still have moved into the uploaded group. In order for them to be included in the next samples being uploaded, tap the 'Cue for upload' button beside each, within the uploaded list page. This will transfer them back to the new samples list.]

Maintaining your PDA

- Saved samples in the uploaded section should be deleted occasionally to save memory.
- When you are finished using your unit always place it on charge.