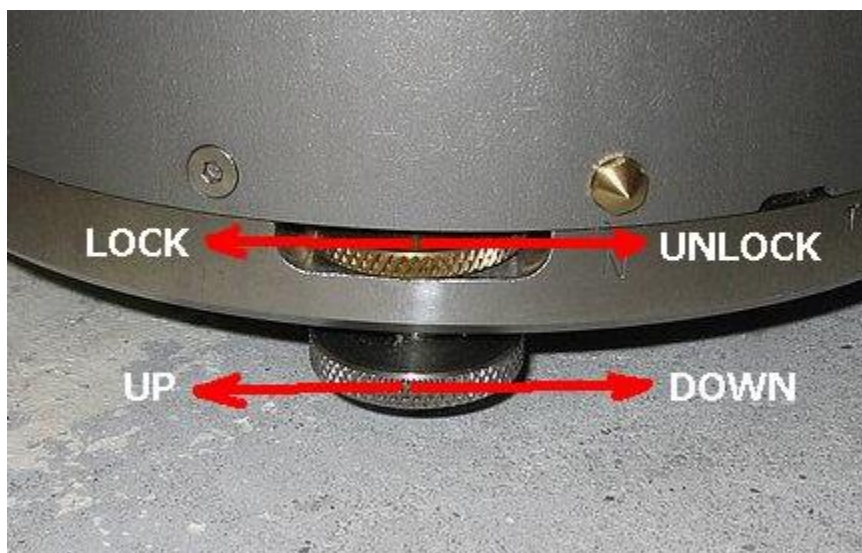


1. Fill out items 1, 2 and 3 on the RT-130/Broadband Site Installation Data Sheet.
2. Prepare the vault. Install the power system. Check that the DC voltage levels and polarities are correct if necessary. Place the DAS in the vault and connect power. Connect the GPS clock to the DAS.
3. **Align, level and unlock the sensor.** Place the sensor in the location that it will remain for the duration of the experiment. Align the brass point at the bottom of the sensor so it points NORTH. The silver-colored point will point south.



4. Level the sensor by adjusting the leveling feet. The top portion locks and unlocks the foot, and the bottom portion adjusts the height up and down. **IMPORTANT:** Lock the leveling feet when finished or the data will be noisy.



5. **Connect the sensor** cable to the top of the sensor and to the top of the Breakout Box. Connect the large grey cable to the side of the Breakout Box and to the DAS. The red Busy LED on the Breakout Box should light up. This indicates that the power is connected, and that one or more (hopefully all three) of the sensor elements are locked. The sensor should not be connected to the DAS (and power) for too long before unlocking it.



6. **Lock** the sensor by holding the Enable button and the LOCK button down simultaneously. You may have to hold the buttons in their positions for up to 7 seconds before the sensor will respond. When the red Busy LED comes on you may release the switches. The sensor should quickly go through each element and ensure it is locked. If not, one or more elements may have been unlocked during transport and the sensor may already be damaged. Now **unlock** the sensor by holding the Enable button and the Unlock button down simultaneously. Again, you may have to hold them down for up to 7 seconds. The red Busy LED should come on solid for about 1 minute. Once all the elements are unlocked the red Busy LED will blink faintly as each element is centered. It is best not to do anything further until the red Busy LED has completely stopped flashing.

7. **Connect** the handheld terminal to the RT-130.

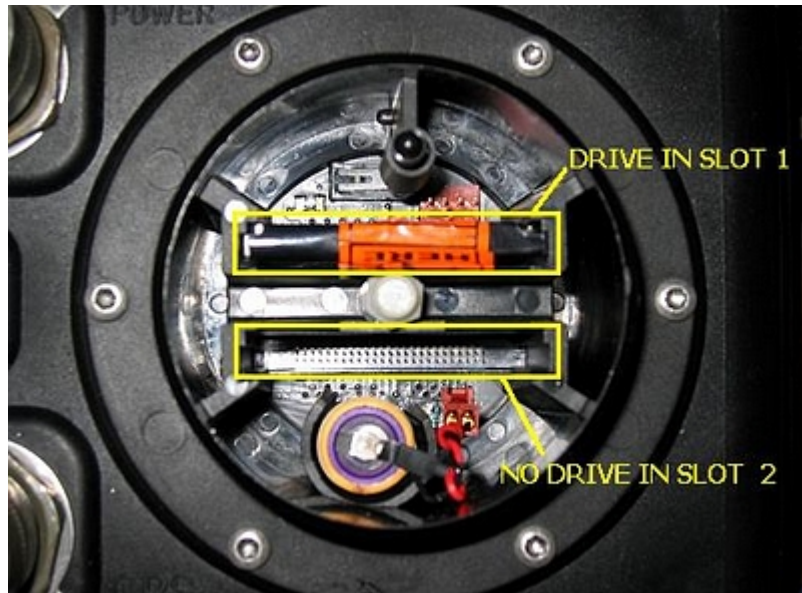


RT-130 DAS

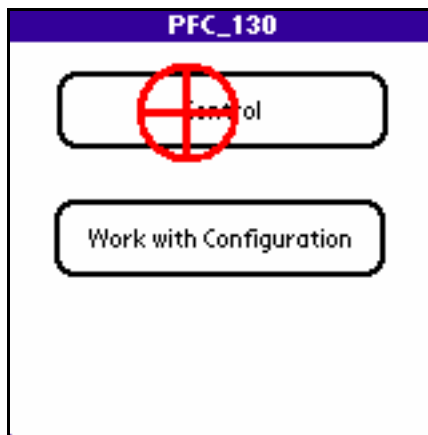


HAND
TERMINAL

8. **Load the CompactFlash disk drives.** Remove the round cover from the RT-130 and place one or two CompactFlash drives or cards into their slots. Slot 1 is towards the top of the DAS as you look at the connectors. As you insert each card an LED light (one for each card) will change from green to red, and then back to green. **Record** the serial numbers of the disks in item 7 of the RT-130/Broadband Site Installation Data Sheet.



9. **Start the PFC_130 application.** Enter the Control portion of the application.



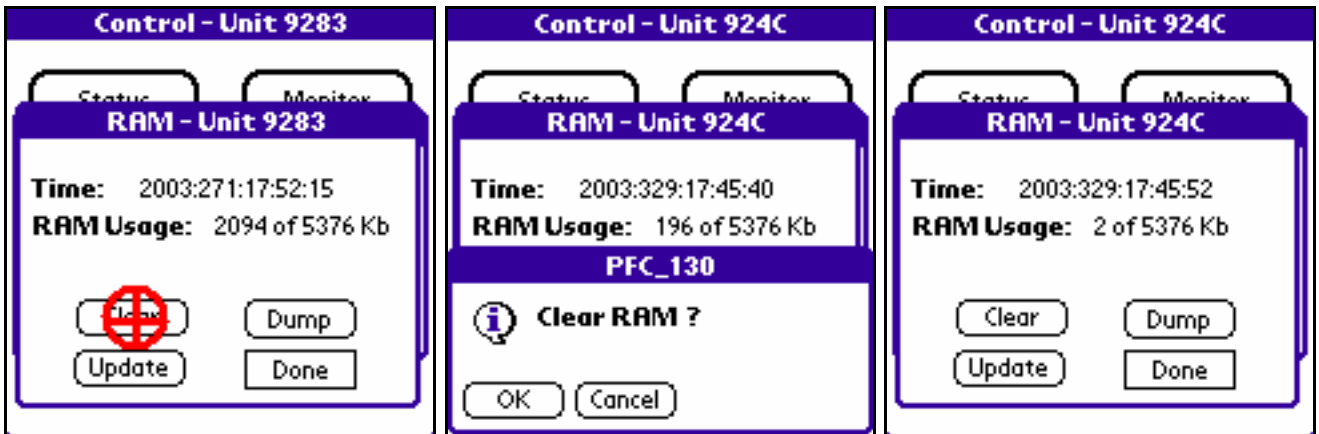
10. **Check the centering voltages.** Check the voltages for the three elements by tapping the Aux Cntrl button on the Control menu, then the Aux Ch button on the Aux Control menu. The voltages for the channels in use should be in the range -1.0V to +1.0V. If the any of the voltages are out of range then press and hold the Enable and Center switches on the Breakout Box until the red Busy LED indicates that the sensor is trying to center. If the sensor does not think it needs to center any element it will do nothing. Again, you may need to keep both buttons pressed for up to 7 seconds. If the sensor cannot be centered try locking and unlocking the elements, and recheck that the sensor is level, and then sending additional centering pulses. **Record** the final centering voltage levels in item 4 on the RT-130/Broadband Site Installation Data Sheet. Tap the Done button on the Aux Channels form, and on the Aux Control form to return to the Control menu.



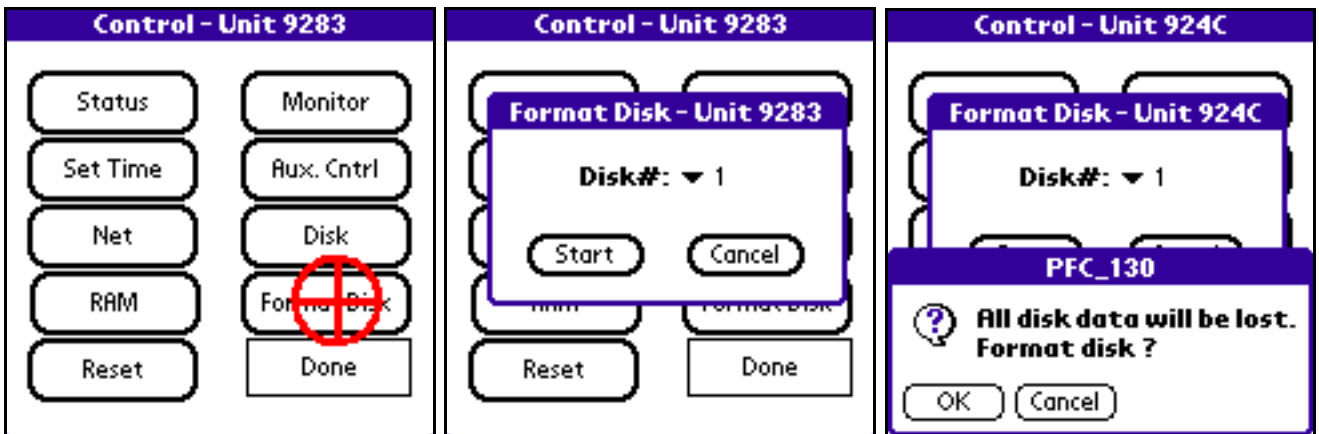
11. **Monitor the sensor.** From the Control menu select the Monitor function. A dialog box will appear. Select one of the data streams and a channel for that stream that is in use and tap the View button. The handheld terminal will command the DAS to sample and collect data from the selected data stream and channel for 8 seconds. During the 8 seconds noise in the area should be kept to a minimum. The handheld terminal will download and display the results. Tap the Ch.Sel button and repeat the procedure for each of the channels in use until you are sure that the sensor is functioning. Tap on the Done button when finished.



12. **Clear the RAM.** Tap the RAM button on the Control menu. A dialog box showing the time and the RAM usage will appear. Tap the Clear button and then the OK button on the confirmation dialog box. When the program is finished the RAM Usage value should still show 2 KBs used.

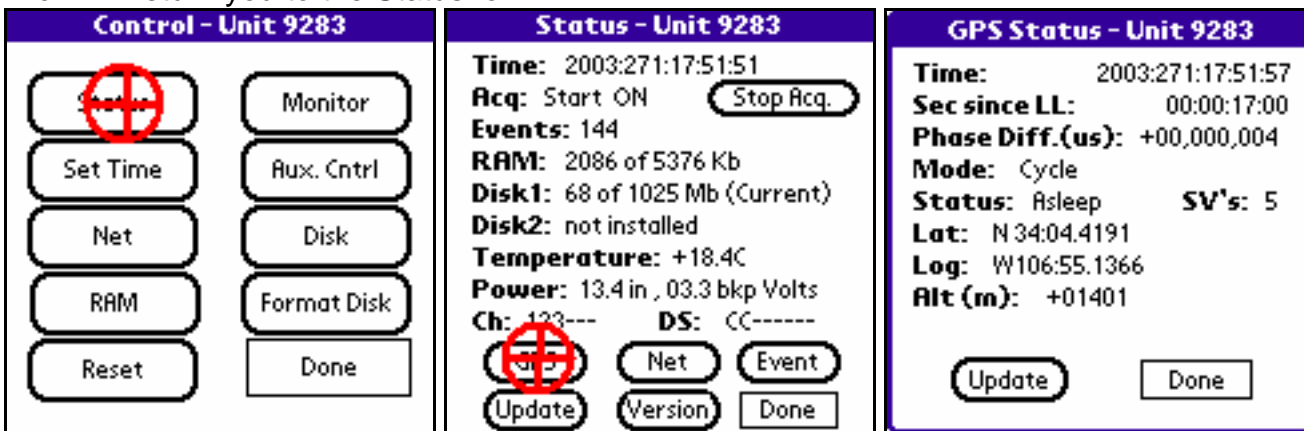


13. **Format the disks.** From the Control menu tap on the Format Disk button. A dialog box will appear. Select each disk slot where a CompactFlash disk or memory card is installed and tap the Start button. While the disk is formatting you should see a red LED light in the well where the CompactFlash cards are located. The CompactFlash cards should never be removed any time that LED is red.



14. **Program the parameters.** Now return to the main menu and enter the Work with Configuration portion of the application to program and load the desired parameters into the RT-130 from the handheld terminal. See other documentation for this procedure.

15. **Check the GPS.** Return to the Control menu and tap the Status button. On the Status form tap the GPS button. This will bring up the GPS Status form. If the GPS has been operating correctly since the DAS power was connected the value following the Sec since LL label should indicate an amount of time less than 20 minutes (i.e. 00:00:20:00). The Phase Diff.(us) value should also be some small number. The GPS attempts to get a lock every 20 minutes, so the Status value may be any one of Asleep, Searching, or Lock. If it does not appear that the GPS is functioning attempt to troubleshoot the system before continuing. Check the current position of the GPS satellites with a handheld GPS, if possible, to determine if the equipment is not functioning, or if the antenna is just not able to see enough satellites from its current position. When the GPS is functioning correctly **record** the form values in item 5 on the RT-130/Broadband Site Installation Data Sheet. When finished tap the Done button which will return you to the Status form.



16. **Start acquisition.** On the Status form the last thing to do should be to start data acquisition. To start acquisition tap the Start Acq. button. Once acquisition has been started the Status form will update, but you may have to tap the Update button again to get everything to update. The Start Acq. button should change to Stop Acq., the value following the Acq label should change to Start ON, the Events value should increment by some amount (dependent on the recording parameters), and the amount of RAM used should increase. Wait a few moments and tap the Update button and note that the amount of used RAM is increasing. This is the best indication that the DAS is recording for most programs. **Record** the values on the Status form in item 6 on the RT-130/Broadband Site Installation Data Sheet.



17. If everything appears to be functioning, tap the Done button on the Status form, turn off the handheld terminal, and secure the site.

(END)