

1. **Check the site.** Gain access to the site and check for any obvious disturbances or damage. Look at the Q330 indicating lights and check that all of the appropriate indicating lights and LEDs are on and not indicating problems.

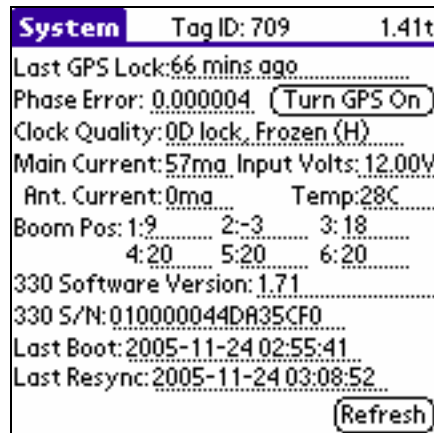
2. **Connect the Clie.** Connect the Clie Comm cable to the Clie and the CONSOLE port on the Q330. Remember not to leave the cable connected to the Clie for extended periods of time when not in use (like hours, for example). This will cause the battery in the Clie to be drained in about one day. Turn on the Clie and tap the Q330 Beta icon to start the Q330 control program. Tap the Overview button (or tap the Menu icon of the Clie in the lower left-hand corner of the Clie display).



3. **Check System Overview.** When the menus appear select the System item of the Views menu.



The current status of the Q330 will be displayed.



Things to look for on this display:

--- **Last GPS Lock/Phase Error/Clock Quality:** The GPS should come on every three hours, so the Last GPS Lock value should be less than '180 mins ago'. Because of satellite coverage a 3-hour cycle may be missed, but if there has not been a lock for days then something is probably wrong with the GPS unit and/or the GPS antenna and its cabling.

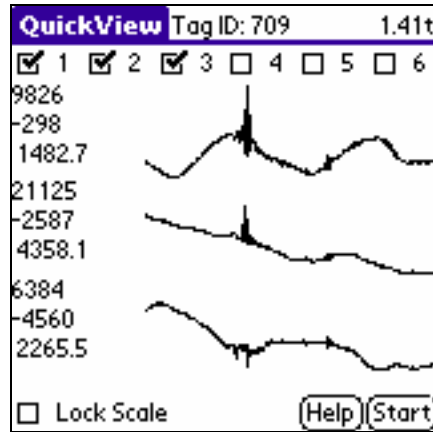
--- **Main Current/Input Volts:** The amount of current used by the system should normally (almost always) be less than 100ma. The Input Volts value should usually be around 13.0V for a battery/solar panel powered station. The station in the example picture above had a power problem as the battery was not being charged and was down to 12.0V. The current reading does not include the amount of current drawn by the sensor.

--- **Boom Pos(ition):** The values displayed are in 1/10V, so "18" really means 1.8Volts. For most sensors values between -15 and +15 are generally OK (each different brand and model of sensor has its own specifications). A centering pulse should be sent to sensors (that use one) to bring values back into specification. If the values cannot be brought into spec the bubble level on the sensor should be checked.

--- **Last Boot:** This date/time should be the time of the last service check or even earlier. Reboots are not a normal occurrence. If the time displayed is recent there could be a power problem. If the reboot happens to be around the time of sunrise the station may, for example, only be running on the solar panels and be shutting down in the afternoon or even on cloudy days.

--- **Last resync:** This date/time indicates the last time the internal clock was off so far compared to the GPS that the Q330 had to go to extreme measures to resynchronize the internal clock. This could be any time, but in a perfect world it should usually be shortly after the last boot time.

4. **Check the sensor.** Tap the menu button on the Clie and select the QuickView item from the Views menu. Tap the Start button in the bottom right-hand corner of the QuickView display and perform a "stomp test" to check that all three elements of the sensor are working. Tap the stop button before leaving this display or you could crash the control program.

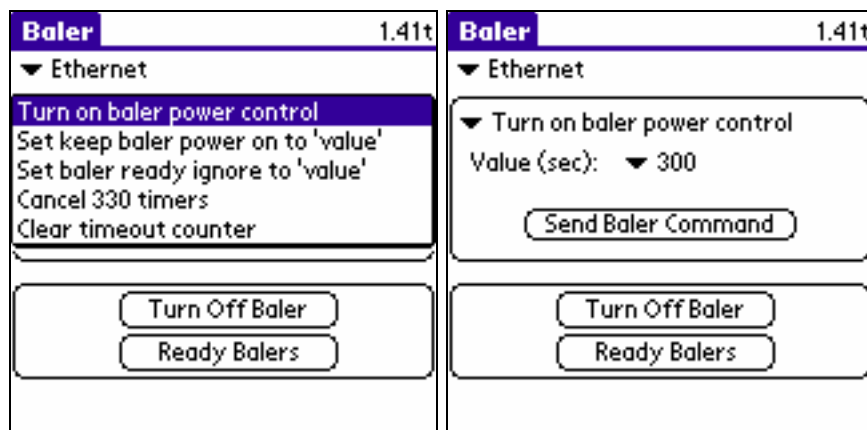


5. **Dump Q330 data to the baler.** The Q330 saves data in internal RAM until that RAM is about 75% full. It then turns on the baler, flushes the contents of the RAM to the baler, then shuts off the baler and starts writing to the RAM again. If the Q330 loses power everything in RAM (which could be several hours of data) will be lost. RAM should be dumped to the baler during normal servicing when the baler will be changed, and also any time before the station is powered down for maintenance or to make adjustments.

Check the baler Status LED on the front of the baler.

--- If the Status LED is green and the Ethernet Link LED is on then the baler is already running. If the Ethernet Active LED is yellow most of the time it means that data is being sent to the baler. Wait until the Ethernet Active LED activity slows down then press and release the ATTN button to turn the baler off. Wait until the Status LED returns to blinking green every few seconds before doing anything else.

--- If the Status LED is blinking once every few seconds then the baler is off. Turn the baler on using the Clie control program. This is done to verify that the cable between the Q330 and the baler is working properly. Select Baler Cmds from the Cmds menu to bring up the form in the picture below. If "Turn on baler power control" is not already selected do so by using the pull down menu (the picture on the right). Tap the Send Baler Command button. This should turn the baler on. If the baler does not come on then there is a problem.



IF THE CLIE CANNOT BE USED (if the battery is dead, the Clie cable has broken, etc.) the baler can still be turned on by pressing and releasing the ATTN button on the front of the baler. Once the baler has been commanded on, by the Clie command or the ATTN button method, the Status LED will blink green/red every few seconds while the baler boots up then the LED will be green most of the time. While the baler is booting the Ethernet Link LED will come on. When the baler is finished booting the Ethernet Active LED will be mostly on while the data in RAM is transferred from the Q330 to the baler. When the Ethernet Active LED activity slows down use the Turn Off Baler button in the Clie control program, or press and release the ATTN button to turn the baler off. Wait until the Status LED returns to blinking green every few seconds before doing anything else.



**6. Disconnect the baler.** If the baler is to be swapped with a clean one then disconnect the QNET cable from it and connect the new baler in its place. Use the Clie control program (described above), or press and release the ATTN button on the new baler and check to see that it boots up and receives some data from the Q330 to verify that it is connected properly.

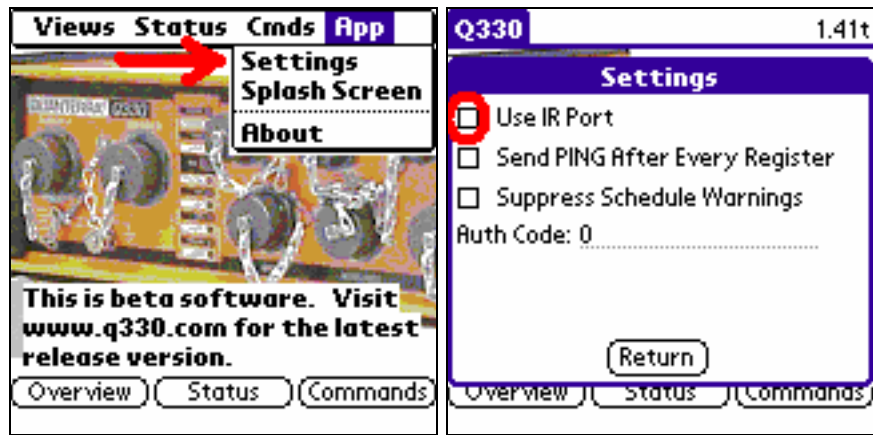


**6. Check the power system.** Once the data has been dumped from the Q330 to the baler check the power system by checking that the LED in the power box is flashing or is solid green. Measure the voltage of the battery with the solar panels covered to keep them from producing power. Then uncover the panels and measure the voltage again to see that it increases (it may not increase if the batteries are fully charged). If the station shuts down when the panels are covered there is a power system problem.

**7. Finish.** When finished checking the station and/or making any repairs disconnect the Clie from the Q330 (and disconnect the cable from the Clie), replace any removed connector caps, and secure the station.

## Troubleshooting

1. If the Clie to Q330 communication cable is being used, but communications with the Q330 keeps timing out, check that the Use IR Port option is NOT checked by going to the Settings item of the App menu and unchecking it.



END