Site Maintenance Checklist

Introduction

The purpose of this document is to provide a checklist for site maintenance. The list is split into two sections: Tower Maintenance, and Logger and Sensor Maintenance. At the bottom of the document is a list of the suggested tools and resources to bring along.

Tower Maintenance

❑ Observe the tower from a distance and see if it looks straight.

❑ Check how plumb the tower is. Using a level and sighting up the tower, determine whether the tower needs to be plumbed and straightened again.
  - Extreme weather can stretch guy wires, causing the tower to lean in different directions. It is important to straighten the tower and re-tension the guy wires.

❑ Check on the tower base. Does everything look normal? A significant change in the baseplate can cause the guy wire tensions to also change.

❑ Check guy wire tension at all levels. Equal and proper guy wire tensions are critical to a safe tower.

❑ Check wire rope clips.
  - Are they all tight?
  - Are they rusty? It might be time to change some of them.

❑ Check anchors.
  - Do the anchors look the same as when originally set? If they have moved the soil or have risen out of the ground, it may be time to move or fix the anchor location.

❑ If your tower is many years old, how do the guy wires look at the anchor points?
  - Have they started to fray?
  - Are there any signs of corrosion beyond superficial rust? If the guy wires are showing extreme wear in the form of fatigue or corrosion, it may be time to (carefully!) lower the tower and change out the guy wires.

❑ Check that the shelter box is still securely fastened to the tower. Does weather or wildlife seem to be making its way into the enclosure? If so, take steps to prevent this.

❑ Are the ground wires still properly attached to the base plate, ground rod and logger?

❑ Visually inspect all of the booms and sensors to make sure the alignment is correct and nothing appears to be broken up tower.

❑ Are the sensor cables that lead into the shelter box organized and secure?

Logger and Sensor Maintenance

SymphoniePRO Data Loggers:

❑ Press the [Home] button on the logger and make sure it wakes up. Press [Home → 2. Functions → 1. Logger Functions → 2. Diagnostics] to check on the logger battery status.
  - 12V Batt voltage should be above 11v DC, and ideally above 12v DC. If below 11v DC the iPack battery should be replaced.
  - 2V Batt voltage should be between 1.5 and 2.0v. If otherwise, change the D-Cell batteries.
  - The logger 1.5v DC batteries should be proactively changed every 9 months or more frequently if in cold climates.

❑ Press [Home → 2. Functions → 1. Logger Functions → 1. Logger Status] to check on the FW version and memory card capacity.
  - Check the NRG Website to see if there is a new logger and iPack firmware available and upgrade if there is.
  - Take note of how much memory is being used on the SD card. If it's getting close to the memory card's capacity pull the files off it and erase the card.

❑ Press [Home → 1. Measurements] to view all of the logger channels in real time.
  - Scroll down to view each channel and confirm that the sensors are working correctly.
  - Press the right arrow while on a sensor channel to see additional information like the serial number of the sensor and slope/offset.

❑ Check the iPack Status by pressing [Home → 2. Functions → 2. iPack Functions → 2. Connection Status].
  - The iPack should be registered Home or Roaming.
  - Press the right arrow while on the iPack Status window to see additional information like the IP address and data transfer details.

❑ Press [Home → 2. Functions → 2. iPack Functions → 1. Connection Test → 6. Email One File] to force the iPack to make a call.

- Watch the screen as the iPack calls. Look up any errors in the [SymphoniePRO manual](#) or contact [Technical Support](#) (802) 482-2255 ext. 3.

❏ If the logger's SD card has not been changed for a while, swap in a new card by pulling out the old one and inserting a new one.
- Wait and watch as the memory card is initialized. If it fails, do not use that memory card. Double check the memory card status after inserting a new card (as mentioned above).

❏ If needed save a copy of the logger's *.LGR file to have a record of the settings in the logger and iPack.

❏ Close everything back up making sure it is weather tight.

SymphoniePLUS3, SymphoniePLUS and Symphonie Loggers:

❏ Press the [Home] button on the logger and make sure it wakes up. Press [Home → 2. Status → 1. Logger Status] to check on the logger.
- Battery voltage should be between 1.5 and 2.0 V and should say "Good". If otherwise, change the D-Cell batteries.
- The batteries should be changed every 9 months or more frequently if in cold climates.

❏ Press [Home → 2. Status → 2. Mem Card Status] to check on the memory card.
- The screen should say "Card Inserted – Logging" and report how many files are saved, and how many more files can be written to the memory card.

❏ Press [Home → 1. Measurements] to view all of the logger channels in real time.
- Scroll down to view each channel and confirm that the sensors are working correctly.

❏ Check the iPack Status by pressing [Home → 2. Status → 3. iPack Status.
- The iPack should be registered Home or Roaming. The battery voltage should ideally be above 11 V.

❏ Press [Home → 3. Utilities → 4. iPack → 1. Call Now] to force the iPack to make a call.
- Watch the screen as the iPack calls. Look up any errors in the SymphoniePLUS3 manual or contact [Technical Support](#) (802) 482-2255 ext. 3.

❏ If the logger's memory card (MMC or SD) has not been changed for a while, swap in a new card by pulling out the old one and inserting a new one.

- Wait and watch as the memory card is initialized. If it fails, do not use that memory card. Double check the memory card status after inserting a new card (as mentioned above).

❑ If needed save a copy of the iPack's *.ipk file to have a record of the settings in the iPack.

❑ Close everything back up making sure it is weather tight.

Suggested Tools and Resources

❑ Laptop computer with the most recent version of SymphoniePRO Desktop Application and/or Symphonie Data Retriever software and the latest logger and iPack firmware files.
❑ USB A to USB B cable for connecting to SymphoniePRO loggers.
❑ iPack Programming Kit to connect to SymhponiePLUS3 and older loggers and iPacks.
❑ Adjustable wrench
❑ Socket set with 9/16, 5/8, & 11/16 inch sockets.
❑ Small flat head and Phillips head (+) screw drivers.
❑ Spare D-cell batteries, iPack batteries, data cards.
❑ Spare wire rope clips.
❑ Spare logger and iPack (if troubleshooting these components).
❑ Spare SCM or P-SCM card(s), if troubleshooting sensors.
❑ Super 60 & 80 meter towers: Small hand winch (come-along) to help tension guy wires.
❑ Super 60 & 80 meter towers: Chicago grips to help tension guy wires.
❑ Maintenance forms, camera, etc., to document any observations and changes made.

Manuals:

- SymphoniePRO Data Logger Manual
- SymphoniePLUS3 Data Logger Manual
- 50m XHD and 60m XHD TallTower Installation Manual
- 80m TallTower Installation Manual