

RiverSurveyor - Quick Start Guide

Getting started with the RiverSurveyor System



This is a quick reference guide to get started with the RiverSurveyor ADP system. For more detailed information, refer to the User Manual which can be found on the software CD or via **Start | All Programs | SonTek Software** after installation.

What's in the Case?

The specifications for the two available RiverSurveyor ADP models are below. Only one ADP is provided with each RiverSurveyor system:

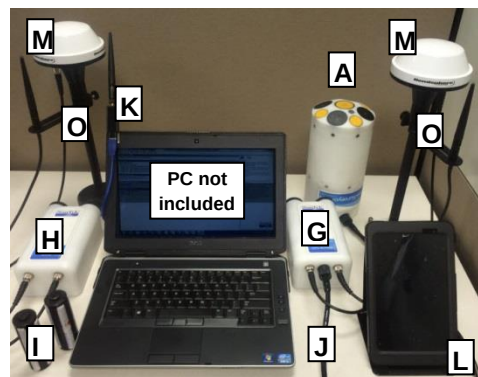
RiverSurveyor ADP Discharge Range (w/ GPS)

S5		A	0.30 to 15.0 m
OR			
M9		A	0.30 to 80.0 m



Standard Components

A	S5 or M9
B	Serial Power/Communications cable (10m)
C	AC Power Supply with international cord kit
D	Serial to USB Adapter
E	Software and Documentation CD
F	Warranty registration card



OPTIONAL Components

G	PCM Rover (Basic OR DGPS configuration)
H	RTK GPS Base Station (tripod not shown)
I	Battery holders for PCM (2 per PCM)
J	1m Power/Comm cable, connects M9/S5 to PCM
K	SonTek USB Radio
L	Tablet (waterproof bag not shown)
M	GPS Antenna, support and pole (antenna type may be different)
O	Radio antenna, bracket and extension cord

Hardware Setup

Hardware setup depends on configuration purchased:

	Basic (Telemetry-only) PCM Option. Different methods of connecting to the PCM are: Via tablet (via USB Radio), or through PC (via USB Radio).
	DGPS PCM Option. Different methods of connecting to the PCM are: Via tablet (via USB Radio), or through PC (via USB Radio). Shown is GPS antenna with radio antenna, bracket and extension cord.
	RTK GPS PCM Option. Different methods of connecting to the PCM are: Via tablet (via USB Radio), or through PC (via USB Radio). Shown is GPS antenna with radio antenna and extension cord as well as the base station (typically mounted on a tripod)



Always disconnect the S5/M9 from the PCM when storing the equipment. Failure to do so will prevent PCM from going into low-power state and will cause batteries to **overheat! Low-power state starts 10 minutes after disconnection.**

RTK Base Station Setup:

- Setup as shown in picture, in a stable location as high as possible near the site.
- Tripod can also be placed over a known bench mark for absolute positioning (HydroSurveyor only)
- For optimal radio range, radio antenna can be raised higher than shown.
- PCM may be attached to tripod with supplied bracket.



Mounting the RiverSurveyor S5/M9

- System may be mounted to the SonTek HydroBoard II or directly on a boat (see examples below)
- If mounted on a boat, mount and boat **MUST** be non-magnetic.



Windows Software Installation

Insert the RiverSurveyor Live CD into a PC. Installation Menu should appear automatically. If not, double click on setup file in your CD drive menu. Install **BOTH RiverSurveyor Live and Utilities** software for PC.

Power Up

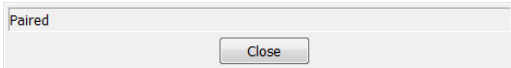
- NOTE: PCMs do **NOT** have on/off button.
- Insert 8 AA batteries into a battery holder and slide it into one of the compartments. PCM lights will turn on.
- S5/M9 can be powered directly (using AC adaptor) or through the PCM (Rover). Each PCM has two battery compartments that can be swapped one at a time, without interrupting data collection.
- It is recommended that both battery cartridges are loaded for optimal performance.
- If not using the second compartment, make sure to **close it** with supplied lid to prevent water ingress.

Pairing PCM Base and Rover



RTK PCMs (Base & Rover) do not come from factory paired. For RTK GPS configuration **ONLY, PCMs must be paired prior to first use!**

- Pairing only has to be done once prior to first use
- Place PCMs within 10 m of each other and apply power.
- Plug SonTek USB Radio into PC and launch Utilities software.
- Click "Pair" under "Advanced Functions" and select desired Serial Number in pop-up window.
- Follow the on-screen instructions. Once pairing is successful, software will confirm with "Paired" (below).

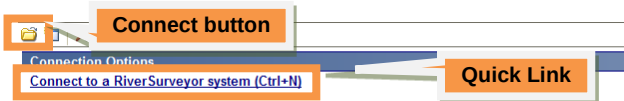


Connecting to the System

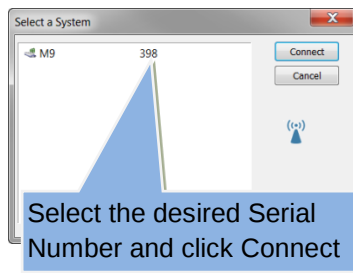
If **NOT** using PCMs, connect the 10-m power & comm. cable to the system and the other end to a Serial COM port on the PC and apply power to the cable.

If **using** PCMs, connect either with the mobile phone (through the Bridge) or with a PC or tablet via the USB Radio:

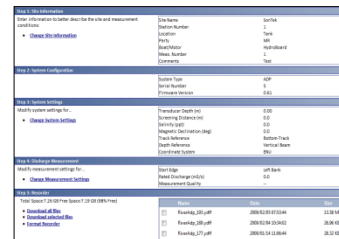
- To connect with a PC, plug USB radio into a USB port on the PC and launch RiverSurveyor Live software
- If having difficulty connecting, please disable your computer's WiFi and Bluetooth options. Also ensure batteries are new and/or good.
- If the USB radio is not recognized by your computer download and install the FTDI driver from: <http://www.ftdichip.com/Drivers/VCP.htm>
- Connecting to the system by pressing the **Connect** button or the **Quick Link** on the Start page.



The **SmartPage** (shown top right) will be displayed showing the system configuration, settings and utility functions. **Go through this section by section to ensure your system is setup properly.**



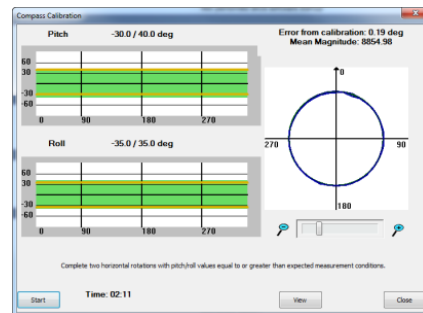
Select the desired Serial Number and click Connect



Pre-Measurement Tests

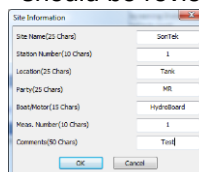
It is important to ensure the integrity of the system prior to any measurement and there are a series of tests that should be performed in this process:

- Compass Calibration** is necessary prior to all measurements and compensates for the magnetic field. On the **SmartPage** select **Compass Calibration**. Click the Start button and rotate the ADP through two complete circles while smoothly varying pitch and roll. (i.e., similar to how you would pan with a video camera.) For a successful calibration the **error from calibration should be <0.5deg**. For more information, see section 6.11.1 of the manual.
- Set the **System Time**
- On the **System tab** (bottom left), **Recorder** section, select **Download all files** and then **Format Recorder**.



Updating and Changing Settings

These settings are typically specific to the site and should be reviewed prior to starting a measurement.

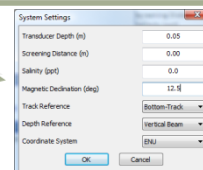


Site Information

Enter all relevant information to the site and measurement. Note that more information is better than less.

System Settings

Enter the depth the vertical beam is below the water surface, Salinity and Magnetic Declination



Software and Firmware upgrade



When upgrading software and firmware, it is strongly recommended that **BOTH** are upgraded to the most recent version at the same time. Differences in software/firmware may cause unforeseen issues.

Technical Support

SonTek Technical Support is available 24 hours a day, 7 days a week.

Tel: +1-858-546-8327 Email: support@sontek.com
Fax: +1-858-546-8150 Web: www.sontek.com