STREAMPRO

DEPLOYMENT GUIDE

TABLE OF CONTENTS

HOW TO CONTACT TELEDYNE RD INSTRUMENTS

If you have technical issues or questions involving a specific application or deployment with your instrument, contact our Field Service group:

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Client Services Administration – rdicsadmin@teledyne.com

Web: http://www.teledynemarine.com/rdi

For all your customer service needs including our emergency 24/7 technical support, call +1 (858) 842-2700

Self-Service Customer Portal

Use our online customer portal at http://www.teledynemarine.com/rdi and click on the **Support** link to download manuals or other Teledyne RDI documentation.

Teledyne Marine Software Portal

Teledyne RD Instruments Firmware, software, and Field Service Bulletins can be accessed only via our Teledyne Marine software portal.

To register, please go to https://tm-portal.force.com/TMsoftwareportal to set up your customer support account. After your account is approved, you will receive an e-mail with a link to set up your log in credentials to access the portal (this can take up to 24 hours).

Once you have secured an account, use the Teledyne Marine software portal to access this data with your unique username and password.

If you have an urgent need, please call our Technical Support hotline at +1-858-842-2700.

Preparing the StreamPro

PREPARING THE STREAMPRO INCLUDES THE FOLLOWING STEPS:

✔ Checking you have all the StreamPro parts

✔ Installing the documentation and software CDs

✔ Assembling the float

Identifying what's in the Box

Included with the StreamPro system:

Part Number	Name	Description
SPADCP-I	StreamPro system	The StreamPro system includes the transducer and electronics housing. When unpacking, use care to prevent physical damage to the transducer and connector. Use a soft pad to protect the transducer.

Included with the StreamPro Accessories Kit (SPADCP-A):

Part Number	Name	Description
1650	Shipping case	Shipping case with custom foam cutouts.
SPFLOAT	StreamPro Float	Tri-hull float and arm assembly for tethered deployments. Various GPS mounts and kits are available. For more information on GPS mounting kits, see Appendix B in the StreamPro ADCP Guide.
75BK6007-00	Solar Shield	Protects the electronics housing from the sun/overheating.
PC1500	AA batteries	16 AA batteries
90Z-8001-00	Water Resources CD	This CD has PDF versions of all the StreamPro documentation including the StreamPro ADCP Guide. Please read the manual!
	WinRiver II Software	TRDI's river and coastal data acquisition software package where the primary use is for discharge calculation. Although this is its primary function, it can be used for general coastal survey applications.
	TRDI Toolz Software	Utility and testing software package that can be used to test the StreamPro.
	SxS Pro Software (optional)	Section-by-Section (SxS) Pro is a stationary ADCP discharge data collection and processing program. This CD will be included with the SxS Pro upgrade (registration code is required to collect data).
	Q-View Software (optional)	*Q-View* is designed for customers using *WinRiver II* software to have easy access to an evaluation of the quality of collected data while they are still in the field and back in the office (registration code is required).
75BK6057-00	Windows Tablet (optional)	Optional Windows tablet and tablet setup card.
95B-6128-00	StreamPro Getting Started	A printed reference card showing how to get started with the StreamPro. A PDF version is included on the StreamPro documentation CD.
95B-6129-00	StreamPro Deployment Guide	A Printed guide showing the steps needs for a successful deployment.
957-6277-00	SD1000U Bluetooth Communications Setup Card	A printed quick reference card showing Bluetooth communications setup using the SD1000U. A PDF version is included on the WinRiver II CD.

Part Number	Name	Description
SD1000U DAT5-G01R	USB Bluetooth device	USB Bluetooth device SD1000U and Sena DAT5-G01R antenna.
75BK6003-00	Spare parts kit	See below for a list of parts included.

For instructions on using the USB Bluetooth device, see the WinRiver II Software User's Guide and the instructions included with the device on the Bluetooth driver CD.

Spare Parts Kit 75BK6003-00:

Description	Part number	Where Used
O-ring, housing cover, 2-162	97Z-6033-00	Replacing the Electronic Housing O-Ring
O-ring, battery cover, 2-036	97Z-6025-00	Replacing the Battery Compartment O-Ring
Silicone Lubricant, 4-pack	5020	O-ring replacement
Battery Holder, 8 AA Cells	12BH381	Replacing Batteries
Thumb Screw, M4	81B-4018-00	Battery cover
Washer, Small OD, 8MM SST	M4WASHSMOD	Electronic chassis cover plate
Washer, Split Lock, SST	M4WASHSPL	Electronic chassis cover plate

Installing Documentation and Software

The StreamPro system includes a CD with the documentation.

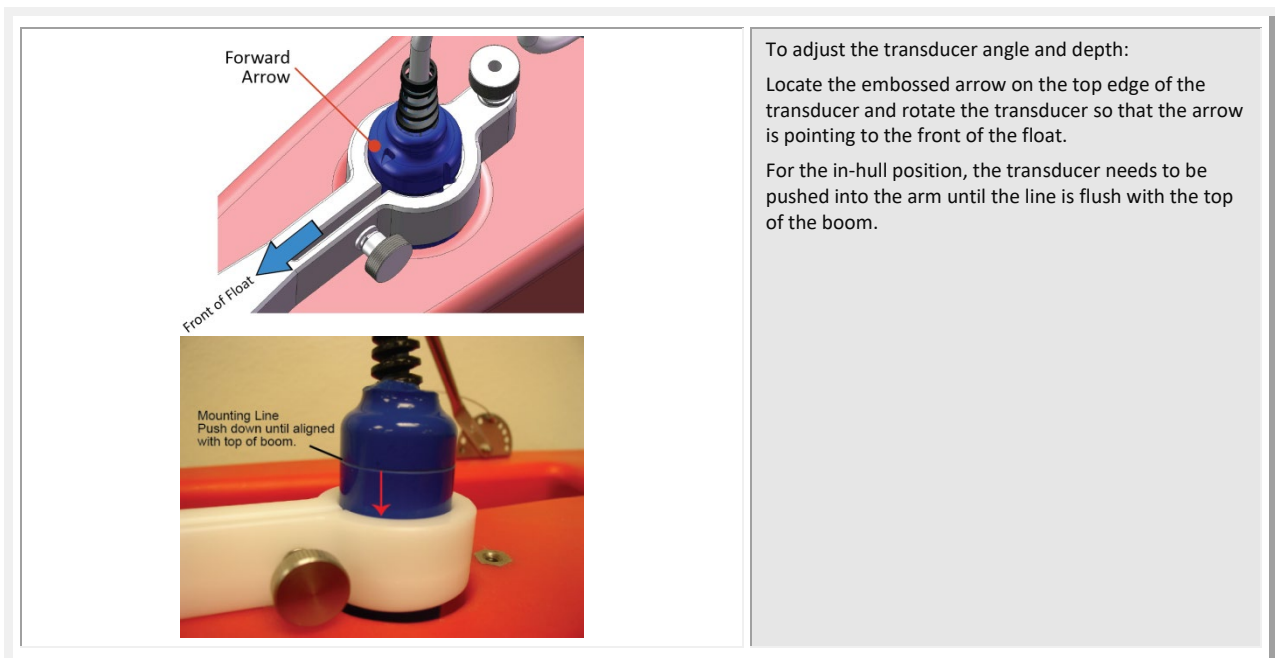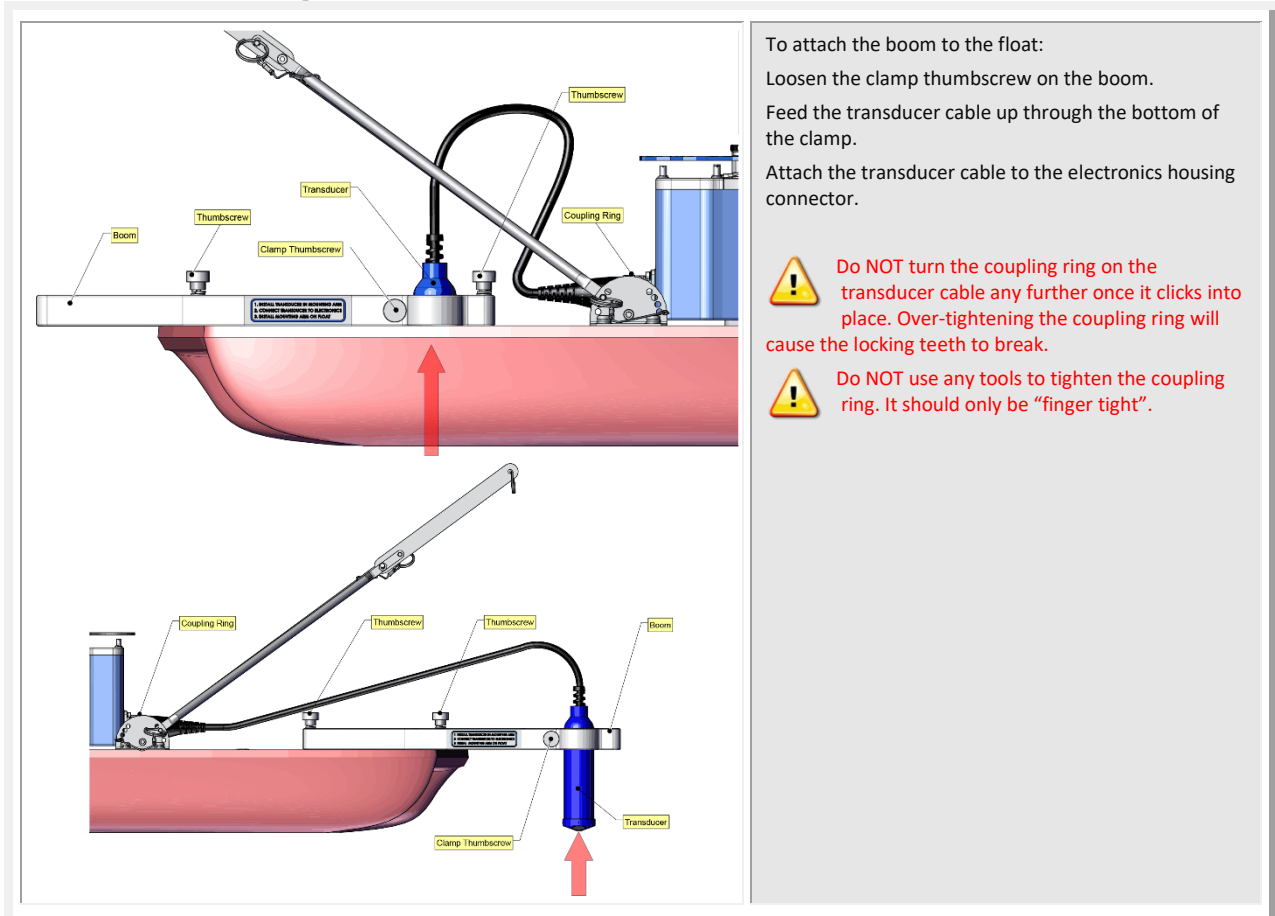**To install the StreamPro Documentation CD:**

1. Insert the CD into the drive and follow the browser instructions on the screen. If the browser does not start automatically, complete steps 2 through 3.

2. Use Windows Explorer® to open the CD drive folder.

3. Double-click on the *launch.exe* file. Follow the browser to view or copy the documentation to your computer.
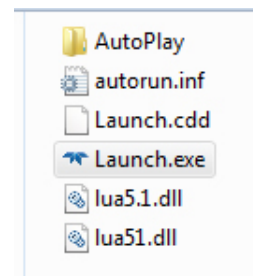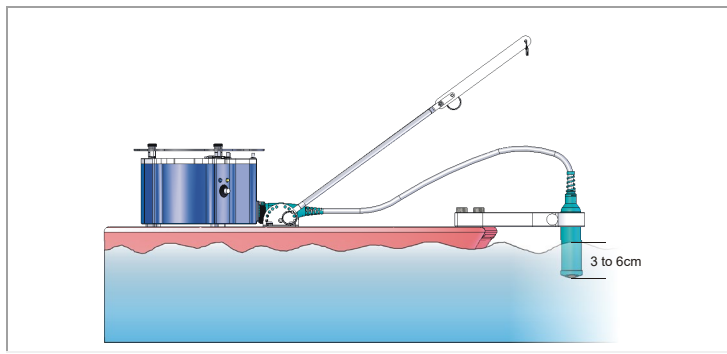
Many companies require that Autorun be disabled. Double-click on *Launch.exe* to start the browser on all TRDI software and documentation CDs.
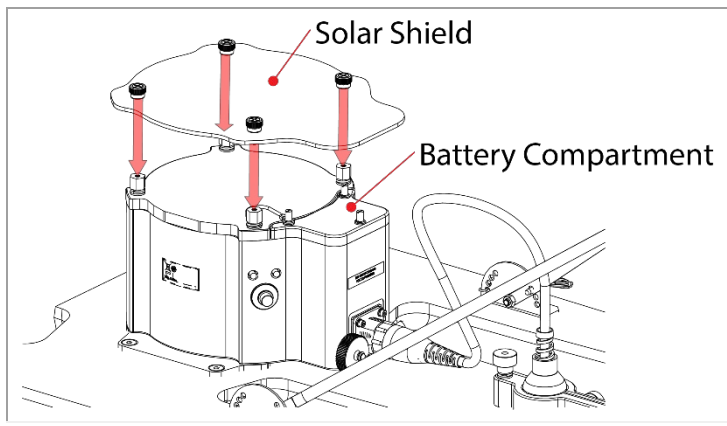
4. Click on **StreamPro** to locate the installed documentation and software.

5. Install *WinRiver II* and *TRDI Toolz, SxS Pro* (optional), and *Q-View* (optional) software. Both *WinRiver II* and *TRDI Toolz* programs are needed to test and deploy the StreamPro system.

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Assembling the Float

To attach the boom to the float:

Loosen the clamp thumbscrew on the boom.

Feed the transducer cable up through the bottom of the clamp.

Attach the transducer cable to the electronics housing connector.

⚠ Do NOT turn the coupling ring on the transducer cable any further once it clicks into place. Over-tightening the coupling ring will cause the locking teeth to break.

⚠ Do NOT use any tools to tighten the coupling ring. It should only be "finger tight".

To adjust the transducer angle and depth:

Locate the embossed arrow on the top edge of the transducer and rotate the transducer so that the arrow is pointing to the front of the float.

For the in-hull position, the transducer needs to be pushed into the arm until the line is flush with the top of the boom.

For the extended position, adjust the transducer depth as shallow as possible.

3 to 6cm

Solar Shield

Battery Compartment

To attach the solar shield:

Attach the solar shield to the standoff bolts on the electric housing cover plate using the attached thumbscrews.

Tighten the thumbscrews "finger tight". Do not over tighten.

⚠ It is important to only gently finger tighten the sunshield screws when placing the sunshield back on the electronic housing M6 standoff bolts. Should any movement occur on the M6 standoff bolts due to over tightening the sun shield screws, the Loctite seal will be broken, and thus allowing the M6 standoff bolts to subsequently become loose.

Quick Review

✔️	📖
✔ Check that you have all the StreamPro parts.	⊕ If you are missing parts, contact TRDI support rdifs@teledyne.com or call +1 (858) 842-2700.
✔ Check that the software and documentation is installed.	⊕ If the CD browser does not automatically start, double-click on the *launch.exe* file. ⊕ Install WinRiver II and TRDI Toolz.
✔ Assemble the float	⊕ See the StreamPro ADCP Guide, chapter 2

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Connecting to the StreamPro

CONNECTING TO THE STREAMPRO INCLUDES THE FOLLOWING STEPS:

✔ Installing a battery pack

✔ Connecting to the system using WinRiver II

What type power does my system need?

The StreamPro ADCP requires a DC supply between 10.5 volts and 18 volts. Use eight AA Alkaline batteries or eight AA Rechargeable Nickel-metal hydride batteries. For the longest continuous operation time, use eight AA Lithium batteries.

To replace the batteries:

1. Turn the power switch OFF.

2. Remove the solar shield by loosening the four thumb-screws.

3. Open the battery compartment door by loosening the three thumbscrews.

4. Place the battery holder in the housing making sure the battery contacts on the holder match the two springs inside the housing

5. Close the battery compartment door and tighten the thumbscrews. Only tighten the battery cover thumbscrews finger tight.

6. Install the solar shield.

> Check that the battery voltage is above 11.5 Volts DC. StreamPro ADCPs will work at 11.5 VDC with at least 400 milli amps; however, batteries with voltages below 11 VDC are at or near their end of life and are approaching uselessness.
>
> A blinking amber LED indicates the battery level is low.

> ⚠ TRDI strongly recommends that users install the drivers and test communications in a location with internet access, before proceeding to their measurement location.
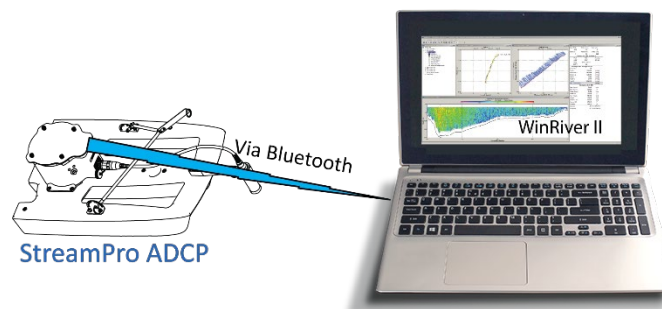

Figure 1.   StreamPro Connections – Bluetooth Connection

Some Bluetooth devices may ask for a passkey, PIN code, Pair code, Pairing code, Security code, or Bluetooth code.

In all cases, the code is 0 or 0000 (zero, not the letter o).

The pin code is 0 for systems shipped prior to August 2017 and 0000 for systems shipped after August 2017. If your system is sent in for repair and the Bluetooth module is replaced, the pin code (if needed) will change from 0 to 0000.

For StreamPro systems shipped after August 2017, the Microsoft® Bluetooth drivers work with *WinRiver II*. For best results, use the USB Bluetooth device with the driver supplied with the StreamPro for *WinRiver II.*

To connect to a StreamPro ADCP:

1. Attach the Transducer cable to the StreamPro Electronics chassis and install the battery pack. Turn on the StreamPro power switch.

2. Plug in the SD1000U device to a USB port and determine the Com port used.

See the WinRiver II SD1000U Bluetooth Communication Setup Card for instructions.

3. Run the *ParaniWin* program and connect to the ADCP. With the Bluetooth modules used since August 2017 (or a repaired older unit where the Bluetooth module was replaced) you may need to **Mode 0** and **Authentication** (not Encryption). The code is 0000 (four zeros) and click **Apply**.
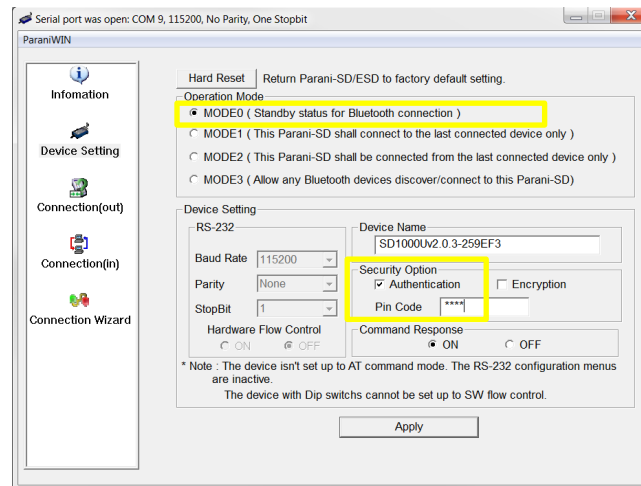

You may need to use either **Authentication** or no authentication when using *ParaniWin* with an SD100U. Try one, and if does not work try the other. Use whichever one works going forward.

The selection of Mode 0 or Mode 1 is independent of Authentication/no Authentication:

*   Mode 1 automatically reconnects to the ADCP, but is otherwise identical to Mode 0.
*   You must establish an outgoing connection before you can switch to Mode 1, but once in Mode 1 you can not connect to a different ADCP without switching back to Mode 0.

4. Exit the *ParaniWin* program.

5. Start *WinRiver II*.

6. On the **Configure** menu, select **Peripherals**.

7. Select **Port: ADCP Serial Port** and then click the **Configure** button.

8. Select the **Comm. Port** number as noted in step 2. The **Baudrate** must be set to 115200. Leave the **Databits**, **Parity**, and **Stopbits** as shown.

9. Click **OK** to close the Serial Communication Settings screen.
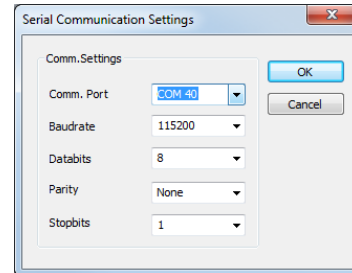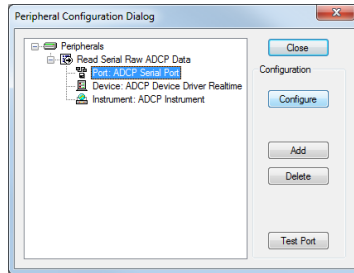
Note it may take several seconds to accept the Comm. Port selection.
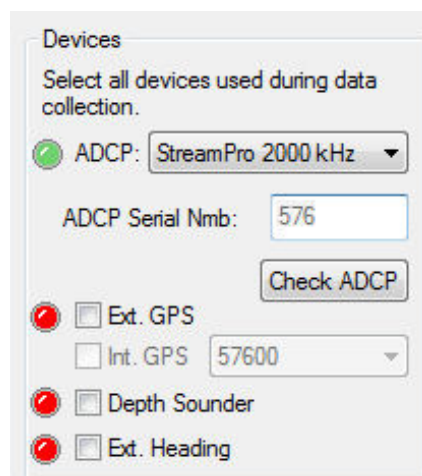
In this example, the Comm. Port is set to Com Port 40.

10. Click the **Test Port** button. The StreamPro banner appears.

```
>break

StreamPro ADCP
Teledyne RD Instruments (c) 2015
All rights reserved.
Firmware Version: 31.xx

>
```

11. Click the **Close** button to exit the Test Port Dialog.

12. Click the **Close** button once more to exit the Peripherals Configuration Dialog.

13. Start a new measurement in *WinRiver II*.

14. On the **Configuration Dialog**, ensure the **ADCP** type matches the StreamPro and the indicator next to the StreamPro is green. Verify the blue LED on the StreamPro ADCP is on.

Quick Review

✔ Connect to the StreamPro using a Bluetooth connection	⊕ For instruction on using the SD1000U USB Bluetooth device, see Chapter 2 in the WinRiver II Software User's Guide and the instructions and Bluetooth CD included with the device. ⊕ See the WinRiver II SD1000U Bluetooth Communication Setup Card for instructions. A PDF copy is installed with the software

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Using GPS

The StreamPro ADCPs supports external GPS data. To connect the GPS onto the StreamPro ADCP:

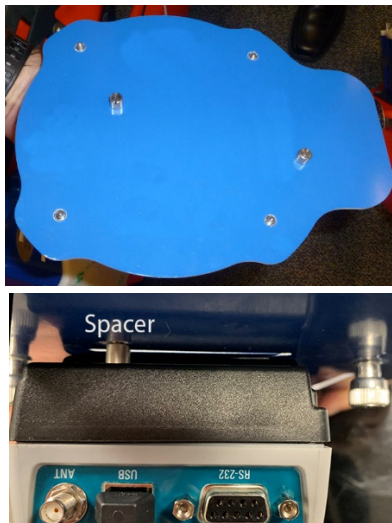|	
	The GPS mounting kit is designed around the GENEQ SXBlue II GPS unit (not included)*. The kit includes the following: • Sunshield with GPS mounting holes • Non-magnetic antenna base • Antenna mount bracket • Antenna cable • Mounting hardware *The SXBlue II GPS system may be purchased from Teledyne RD Instruments or other sources.
	Remove two screws on opposing corners as shown from the battery pack on the SXBlue II GPS unit. 💡 Newer SXBlue II battery packs have a curved back and require spacers to attach it to the sunshield.
	Attach the SXBlue II GPS unit to the StreamPro sunshield using the 6-32 panel screws and spacers. The GPS LEDs and power switch should be facing the front of the float. Attach the sunshield to the StreamPro electronics chassis. ⚠️ It is important to only gently **finger tighten** the sunshield screws when placing the sunshield back on the electronic housing M6 standoff bolts. Should any movement occur on the M6 standoff bolts due to over tightening the sun shield screws, the Loctite seal will be broken, and thus allowing the M6 standoff bolts to subsequently become loose. **Always visually check that the M6 standoff bolts that the solar shield attaches to are secure.**

Remove the original magnetic antenna base and attach the non-magnetic base using the four Phillips screws.

⚠ Magnetic materials will adversely affect the StreamPro compass and substantially reduce the accuracy of data referenced to the GPS. **Do not use the original magnetic base!**

Install the transducer on the float.

Connect the transducer cable to the electronics chassis.

Attach the antenna mount to the float with the 10-32 socket head screw, flat washer and split-washer.

Attach the antenna to the antenna mount using the 8-32 screw, flat washer and split-washer. The antenna connector should be facing towards the GPS unit.

⚠ Only hand-tighten the 8-32 screw to avoid stripping the plastic threads.

Connect the antenna cable from the GPS unit to the antenna.

Two Bluetooth ports are required on your computer to accept both ADCP and GPS data.

Configure the GPS to output GGA and VTG (optional) data strings via the NMEA0183 format.

EAR-Controlled Technology Subject to Restrictions Contained on the Cover Page.

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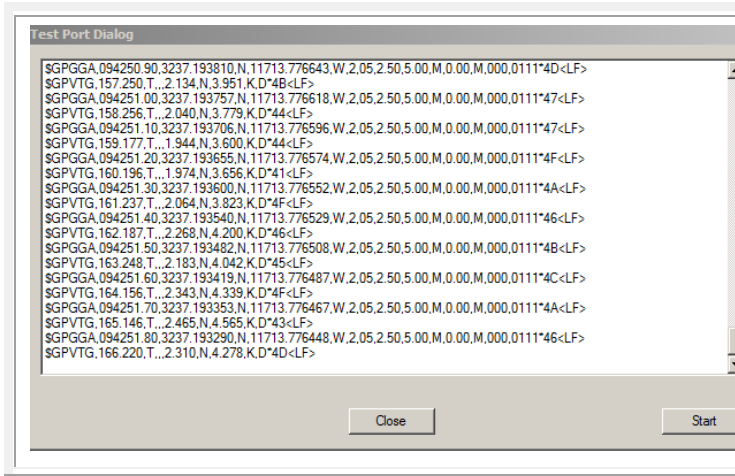
To enable GPS communications with *WinRiver II*:

Select the **Configure** menu, **Peripherals**. Click the **Add** button.

Choose **GPS**, and then click **Next**. Choose the COM port that the GPS is connected to.

Click **Next**. Enter the GPS communication Baud Rate, Parity, and Stop Bit settings.

Click **Next**. Verify the port and communication settings. Click **Next**.

Click **Test Port** and observe the messages.
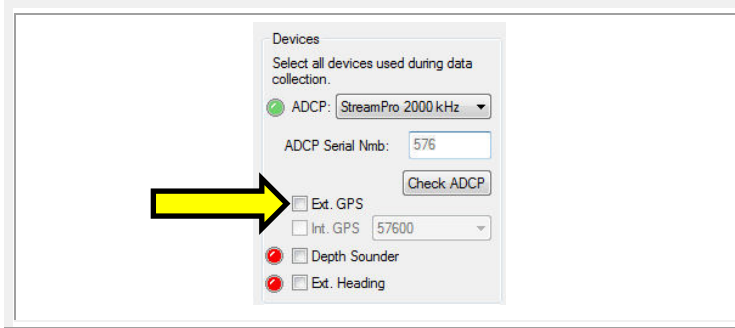
Start *WinRiver II*.

Using the **Measurement Wizard**, select the checkbox for **Ext. GPS** and configure the Com port and baud rate to match that of the receiver.

Quick Review

✔ Use the GPS Tabular 1 display	⊕ Read Chapters 3, 6, and 13 in the WinRiver II Users Guide.
✔ Use *WinRiver II* to verify that the ADCP is receiving GPS data	

Prepare for Discharge Measurement

PREPARING FOR DISCHARGE MEASUREMENT INCLUDES THE FOLLOWING STEPS:

✔ **RUNNING THE WINRIVER II MEASUREMENT WIZARD**

✔ **RUN THE BUILT-IN TESTS ON THE ADCP**

✔ **RUN THE COMPASS CALIBRATION ON THE ADCP**

✔ **RUN THE MOVING BED TEST/SET THE CLOCK**

Prepare for Discharge Measurement

The Hydrologist arrives at the site with a StreamPro and all of the ancillary equipment necessary to perform a discharge measurement.

- **Tethered boat w/ tagline** – The Hydrologist sets up a tagline/pulley system for the tethered boat and then proceeds to install the StreamPro in a standard RiverRay boat. Tethered boat measurements can also be performed from a bridge or other structure across the river. This tends to provide reduced control over the tethered boat motion in the water, as the bridle/line length is longer giving the Boat more freedom to move with the water currents. Measurements taken from bridges or other structures often encounter greater turbulence in the form of jets and eddies created by the structure or bridge piers.
- **Remote Control Boat** – The StreamPro is attached to a Q/Z1250 Power Trimaran or equivalent.

> If the measurement site is expected to have significant moving bed conditions, the Hydrologist may decide to connect a portable GPS module to the StreamPro.

The StreamPro AA battery pack is installed. Next, the Hydrologist powers on the laptop, opens the discharge measurement application *WinRiver II* and connects to the StreamPro with a wireless connection.

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Measurement Wizard

The Hydrologist selects to start a new measurement within the *WinRiver II* application. Once the Hydrologist enters all of the background information on the site where the measurement will be performed, the software will then automatically detect whether an ADCP is connected and which ADCP product it is.

Use the **Transducer Depth** field to set the depth from the water level to the center of the slant beam transducer faces.

Enter the **Magnetic Variation** for the site.

See Chapter 3 Tutorials and Chapter 7 Using the Measurement Wizard in the WinRiver II User's Guide.

Run Built-In Tests

The StreamPro is commanded to perform a BIT test on power up. On the **Acquire** menu, click **Execute ADCP Test** to verify the ADCP is functioning properly.

See Chapter 3 Tutorials and Chapter 9 QA/QC in the WinRiver II User's Guide.

Compass Calibration

Next, the Hydrologist performs a compass calibration. After ensuring that the system is well away from sources of magnetic interference, the Hydrologist starts the compass calibration within the application and then either: slowly rotates the StreamPro as suggested by the application (tethered boat/SxS) or slowly drives the RC boat in a circle. During the calibration process, feedback is provided to the user as to the quality of the collected magnetic field data at each partition of the 360° of rotation.

On the **Acquire** menu, click **Execute Compass Calibration**. When the calibration starts, select **No** for the **Use Pitch/Roll** selection. In normal river discharge circumstances, using the "No" Pitch and Roll selection is sufficient.
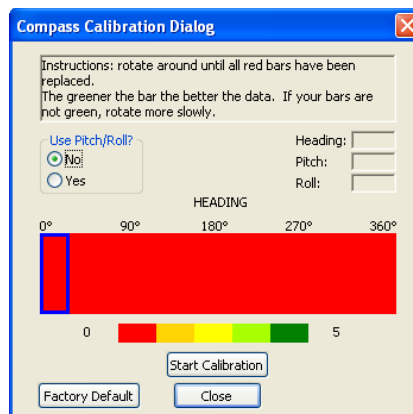
The no Pitch/Roll calibration (also called a single-tilt calibration) requires two rotations while the ADCP is on a flat, level surface.

Moving Bed Test/Set the Clock

At this point, the StreamPro should be tested and the compass cal-
ibration completed; once those steps are complete, it is ready to
start the moving bed test. The StreamPro is placed in the water,
and the Hydrologist enters the command to start it pinging using
the **Acquire** menu, and click **Start Pinging** or use the shortcut
key **F4**. If this is the first measurement taken, *WinRiver II* will
prompt for the clock to be set. Click the **Set Clock** button.

On the **Acquire** menu click **Select Moving Bed Test**. Select
Stationary or **Loop Test** and click the **Start** button.
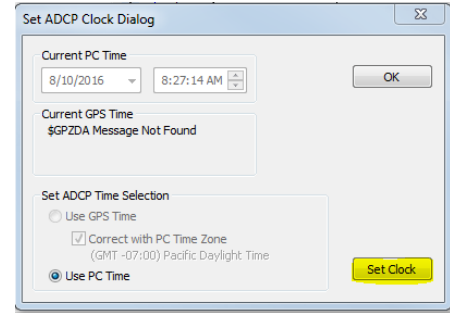
> ⚠️ Only clicking the **OK** button will **NOT** set the clock. The user **MUST** click the **Set Clock** button.

> 📌 If the StreamPro was left in the hot sun, its temperature can quickly rise to 35° C before use. When initially placed in the water, the thermal mass of the StreamPro housing near the temperature sensor initially affects the temperature measurement. Within five minutes it reaches equilibrium and the temperature is accurate within ± 1°C. If the temperature sensor is not allowed to sufficiently equilibrate within the body of water to be measured, it can impact Speed Of Sound, velocity, and discharge-measurement accuracy.

Tethered boat – The StreamPro is moved to the center of the river, and the stationary moving bed test is
started. After five minutes, the moving bed test is stopped and the application displays the apparent mov-
ing bed velocity.

Remote Control boat – The Hydrologist begins a moving bed loop-test with the boat starting near the river
bank. The boat is maneuvered across to the opposite bank and back again. The user stops the test, and the
loop test results are displayed.

> 📌 Either type of moving bed test (stationary or loop) can be performed with either deployment method (tethered boat or RC boat).

Quick Review

✔️	📖
✔ Run the Measurement Wizard	⊙ Read Chapter 7 in the WinRiver II Users Guide. ⊙ Set transducer depth and magnetic variation.
✔ Run the Built-in tests, compass calibration, and moving bed tests ✔ Set the clock	⊙ Read Chapter 9 in the WinRiver II Users Guide. ⊙ Click the **Set Clock** button.

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Locating the Start & Stop Positions

LOCATING THE START AND STOP POSITIONS INCLUDES THE FOLLOWING STEPS:

✔ Locating the Start and Stop Positions

Locating the Start and Stop Positions

While the StreamPro is pinging, the Hydrologist positions the boat until the application shows that the StreamPro is reliably collecting at least two bins of data and marks the position on the tagline for future reference. Measure the distance to the shore from the StreamPro. The StreamPro is positioned to the opposite bank where two bins of data are reliably collected. Again, the tagline is marked and the distance to the shore from the StreamPro is measured.

Depth [m]	Velocity [m/s] (Ref: BT)				%	Discharge [m³/s]
	East	North	Up	Error		
1.46	-0.490	0.617	-0.023	0.248	100	0.011
1.96	-0.126	0.274	-0.011	0.287	100	0.005
2.46	BAD	BAD	BAD	BAD	BAD	BAD
2.96	BAD	BAD	BAD	BAD	BAD	BAD
3.46	BAD	BAD	BAD	BAD	BAD	BAD
3.96	BAD	BAD	BAD	BAD	BAD	BAD
4.46	BAD	BAD	BAD	BAD	BAD	BAD
4.96	BAD	BAD	BAD	BAD	BAD	BAD
5.46	BAD	BAD	BAD	BAD	BAD	BAD
5.96	BAD	BAD	BAD	BAD	BAD	BAD

Velocity Tabular 1 - TRDI

See Chapter 3 Tutorials and Chapter 10 Acquiring Discharge Data in the WinRiver II User's Guide.

Quick Review

✔	📖
✔ Locate the Start and Stop Positions	⊕ Read Chapter 3 and Chapter 10 in the WinRiver II Users Guide.
	⊕ Start/Stop distances from the center of the transducer to the shore should be measured as accurately as possible - at least to the nearest Deci-meter.

Discharge Measurements

Before starting a discharge measurement with a StreamPro ADCP using *WinRiver II*, the Hydrologist has:

1. Prepared the StreamPro, Boat or RC boat, and any external sensors being used
2. Configured the computer, communications link(s), and *WinRiver II* software for data collection using the StreamPro and any external sensors
3. Created a measurement file for the site
4. Ran the StreamPro Built-In tests
5. Performed the compass calibration procedure
6. Performed a moving bed test

The Hydrologist is now ready to start making the measurement.
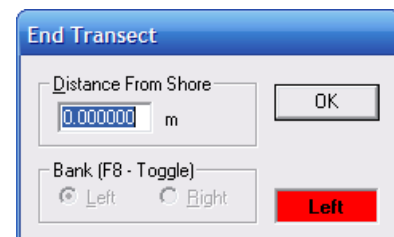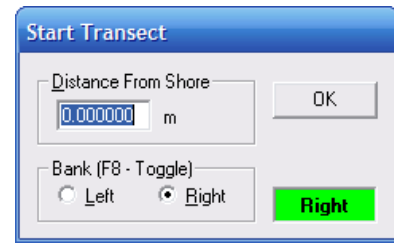
Discharge Measurement

A proper moving boat discharge measurement consists of multiple transects – passes across the measurement location from one bank to the other, collecting data continuously as they cross. For each transect, the Hydrologist must maneuver the StreamPro to the marked position at one bank of the measurement location (see Locating the Start and Stop Positions) and hold that position while they measure the distance to the shore from the StreamPro. Then, start a measurement transect and enter the starting edge bank and distance into the *WinRiver II* software. After collecting the required number of edge ensembles, the Hydrologist maneuvers the StreamPro towards the opposite bank of the measurement location in a smooth and steady manner, collecting data continuously as they travel across the river, and monitoring for data loss and quality issues. When the Hydrologist reaches the marked position at the other bank of the measurement location they hold that position while they collect the required number of edge ensembles, measure the distance to the bank, end the transect, and enter the ending edge distance in the *WinRiver II* software. After completing each transect, the Hydrologist performs a cursory review of the results and prepares to start the next transect.

The best practice for a moving boat discharge measurement is to collect discharge transects in reciprocal pairs (one transect in each direction across the measurement location) with some minimum number of total transects and/or minimum cumulative total duration for all transects. For locations with steady-state flow conditions, at least four transect that agree with each other within 5% of the mean of all the samples, and additional transects and/or cumulative transect duration may be required if that criteria is not met. The Hydrologist must make sure that the maximum permissible relative residual (MPRR) is met before leaving the site. A minimum of two good water profile bins above the sidelobe cutoff are desired for all ensembles in a transect to enable extrapolation of flow in the unmeasured top and bottom regions of the profile.

Once at least four transect that agree with each other within 5% of the mean of all the samples have been collected, the Hydrologist/team will perform a QA/QC review of the data. Primary indicators of high StreamPro data quality include a minimum loss of Bottom Track depth and velocity data, minimum loss of ensemble and individual bin water profile data, maximization of the measured Q as a percent of total Q, and consistency of the water velocity profile data between bins (vertically) and ensembles (horizontally) across the transect.

Step by Step Data Collection

1. Open or create a measurement file.

2. Press **F4** to start pinging.

3. At the start/stop position, press **F5** to start the transect.

4. Enter the starting distance from the shore.

5. Select Left or Right bank.

6. Wait for 10 shore ensembles.

7. Move across the river.

8. At the stop/start position, wait for 10 shore ensembles.

9. Press **F5** to end the transect.

10. Enter the ending distance from the shore.

11. Repeat steps 3 through 10 to collect at least four transect that agree with each other within 5% of the mean of all the samples. The ADCP operator must make sure that the maximum permissible relative residual (MPRR) is met before leaving the site.

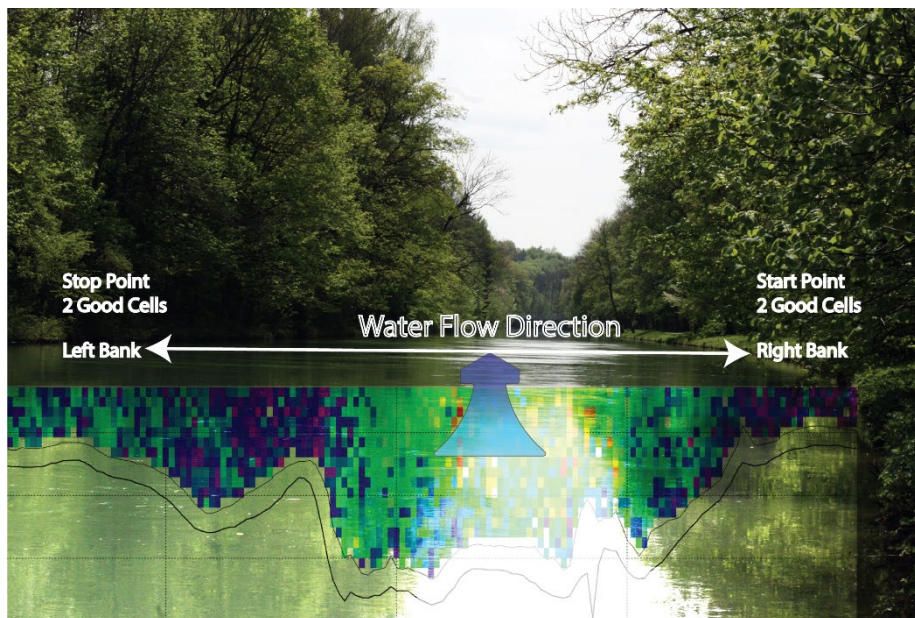See Dynamic Residual Analysis, Chapter 6 in the WinRiver II User's Guide.

Figure 2.   Overview of Data Collection

Data Collections Tips

- Locate the point where a solid two-depth cell measurement can be measured on both banks. Stake or otherwise mark these locations. They represent the starting and stopping points for the transects.

- Accurately measure and enter the **Distance from Shore** when prompted.

- Minimize the ADCP movement while Shore Ensembles are recorded.

- When departing from the edge, slowly accelerate the boat away from the edge and when approaching the other edge slowly reduce the speed such that the boat decelerates and does not overshoot the edge. The goal is to go from edge to edge and not overshoot at either edge. Doing so will allow you to obtain the most accurate measurements, in particular the area measurements.

- Move the ADCP at a slow steady pace in the water during transects.

- Collect a minimum of four transects that agree with each other to within 5% of the mean of all the samples. The ADCP operator must make sure that the maximum permissible relative residual (MPRR) is met before leaving the site (see Dynamic Residual Analysis, Chapter 6 in the WinRiver II User's Guide).

Quick Review

✔	📖
✔ Collect at least four transect that agree with each other within 5% of the mean of all the samples.	↻ Read Chapter 3 and Chapter 10 in the WinRiver II Users Guide.
✔ Verify the data before leaving the site.	↻ See Dynamic Residual Analysis, Chapter 6 in the WinRiver II User's Guide.

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Glossary of Common Terms

Actors:

- Field hydrologist/Technician
- Data Analyst Expert (DAE)

Data Collection Terminology:

- Left/Right Bank – The Left bank is defined as the bank that would be on your left side if you were looking downstream.
- Transect – Data collection across the width of the river either from the Left bank to the Right bank or vice versa. (Sometimes referred to as a "Pass" across the river)
- Measurement – A collection (even number) of four or more Transects made of up of an equal number of Transects from Left to Right as Right to Left.
- Measured Discharge – The average of the discharges from the four (or more) transects.

Site/Measurement Conditions:

- Moving Bed/Moving Bottom – Movement downstream (typically) of near bed sediment. Moving Bed conditions will bias bottom-track velocities, which assume the streambed is stationary.
- Directional bias – This occurs when the discharges measured for transects from the left bank to the right bank are consistently either greater than or less than discharges measured for transects made from the right bank to the left bank.

Conclusion

Congratulations! You have completed the StreamPro Deployment Guide. Read the following manuals for more detailed information.

⊘ StreamPro ADCP Guide

> This manual contains all the details of StreamPro maintenance, testing, trouble-shooting, commands, and data format description.

⊘ WinRiver II Software User's Guide

> WinRiver II is TRDI's river and coastal data acquisition software package, where the primary use is for discharge calculation. Although this is its primary function, it can be used for general coastal survey applications.

⊘ WinRiver II Bluetooth Communications Setup Card

> Quick reference card that shows snap shots of the Bluetooth screens during communications setup.

⊘ SxSPro Software User's Guide

> SxS Pro is a stationary ADCP discharge data collection and processing program for Teledyne RD Instrument's (TRDI) Rio Grande, StreamPro, RiverRay, and StreamPro ADCP models. This program creates a measurement file, sends commands to the ADCP, lets the user collect data, visually displays the data, post-processes the data, and generates reports.

> SxS Pro needs a Registration Code to enable data collection; however, data playback does not require a code. Please refer to the SxS Pro Quick Start Guide, Registration section for further details. Contact rdi.sales@teledyne.com to purchase an SxSPro license.

⊘ Q-View Software User's Guide

> Q-View is Quality Assurance and Quality Control software for Water Resources discharge measurements using TRDI ADCP instrumentation. Q-View provides users with real-time feedback during ADCP data collection, or it can be implemented back in the lab during data review and analysis. Q-View requires a Registration Code to start the software. Contact rdi.sales@teledyne.com to purchase a Q-View license.

PDDecoder Library in C language

The Teledyne Marine PDDecoder library is an open source library written in C language to decode the PD0 data formats that are commonly output by Teledyne Marine/Teledyne RD Instruments ADCPs. The definition and details of the PD0 format can be found in the StreamPro ADCP Guide, Commands and Output Data Format chapter.

Available for download from the Teledyne Marine GitHub site at:

https://github.com/Teledyne-Marine/PDDecoder

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