



# RiverSurveyor<sup>®</sup>

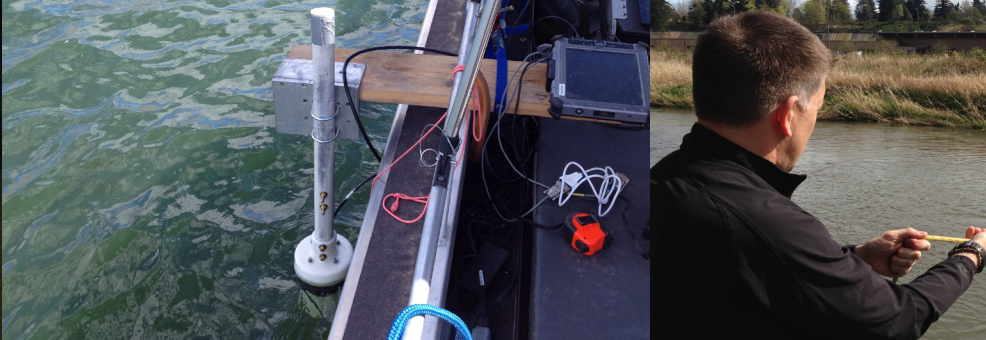
DISCHARGE, BATHYMETRY AND CURRENT PROFILING

S5

M9

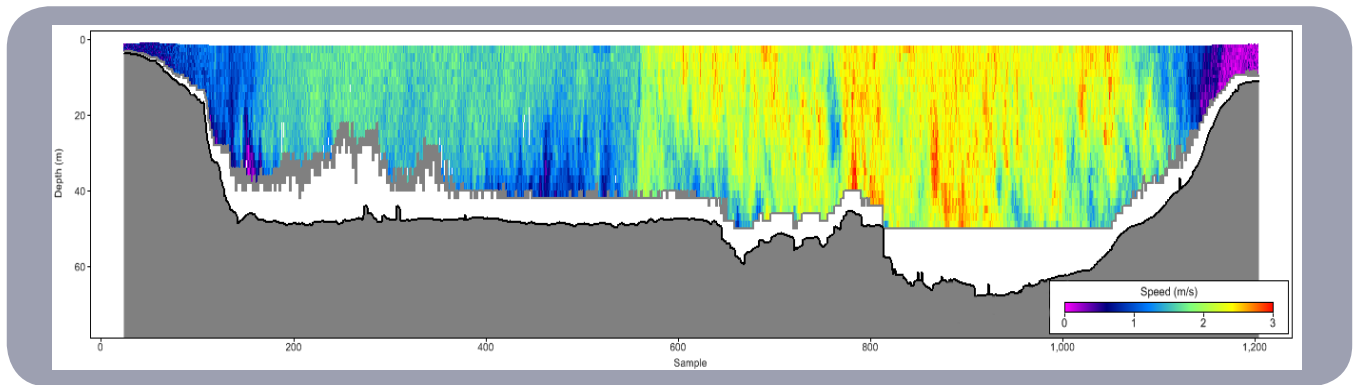


a xylem brand



## Taken to Incredible Extremes.

The RiverSurveyor S5/M9 is a river discharge measurement system without the traditional limitations. Small, portable and easy to use, the patented and award-winning RiverSurveyor measures in extreme flood or drought situations within a single instrument, and without changing user settings. The results speak for themselves - the RiverSurveyor S5/M9 has revolutionized the way discharge is measured in rivers and canals.



"Meeting of the Waters" Amazon River near Manaus, Brazil

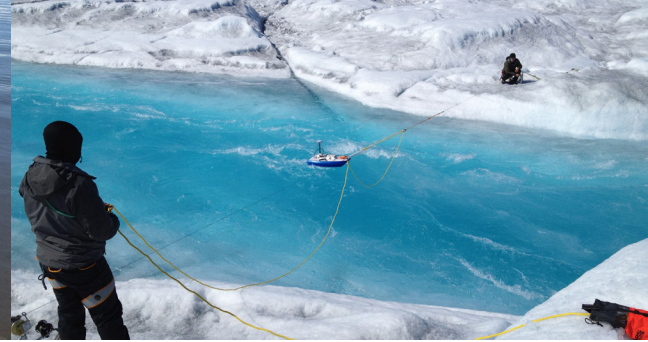
It's a SonTek exclusive - multiple acoustic frequencies with SmartPulseHD® make for the most robust and continuous shallow-to-deep measurements ever. An array of four deterministic microcontrollers expertly apportion the proper acoustics, pulse scheme, and cell size so you can focus on the measurement - not the instrument setup. The system even has a vertical beam for accurate channel definition and it's all designed to work intuitively. Slow to fast, shallow to deep, the RiverSurveyor S5/M9 handles it all on the fly.

Features	Benefits
Multi-band (Multiple acoustic frequencies) <sup>1,2</sup>	Balances the highest resolution with the greatest range of depths.
Vertical acoustic beam <sup>1</sup>	Superior channel definition for both bathymetric and discharge applications. Extends maximum discharge depth when bottom-tracking is out of range.
SmartPulseHD® <sup>3</sup>	An intelligent algorithm that looks at water depth, velocity and turbulence, and then acoustically adapts to those conditions using pulse-coherent, broadband, and incoherent techniques. High-def cell sizes down to 2 cm.
Microprocessor computed discharge and secure data <sup>1</sup>	All discharge computations are simultaneously done both within the S5 or M9, and on the host computer. No lost data if communications drop out.
Standard 360° compass and two-axis tilt sensor	Compensates for vessel motion due to surface conditions.
Reverberation control with ping rates to 70Hz	High ping rates ensure extremely robust data collection.
Bottom-tracking	Acoustically track vessel speed over ground independent of DGPS. Also supplies redundant depth measurement.
RTK GPS (optional)	Ultra precise positioning as an alternative to bottom tracking in moving bed or other difficult situations.

<sup>1</sup>RiverSurveyor technology patent number 8,125,849

<sup>2</sup>RiverSurveyor technology patent number 8,411,530

<sup>3</sup>Patent Pending

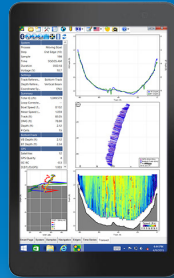
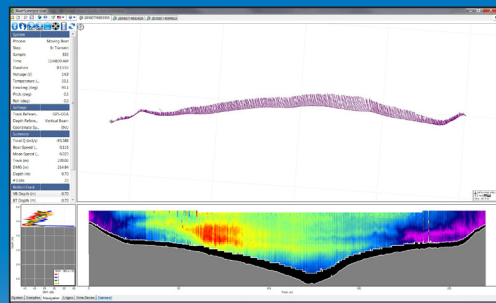


## Display. Process. Analyze.

Exceed your expectations both during and after the measurement with the RiverSurveyor Live! software suite for both PC and mobile platforms. All programs take full advantage of SmartPulseHD and the intelligent software ensures no loss of data during telemetry dropouts. Easily switch between computer or mobile devices during mid-measurement. Several quality indicators and statistics with selectable graphics provide instant feedback on data collection. Multi-language support includes Afrikaans, Catalan, Chinese, English (UK & US), French, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese, Spanish and Turkish. Need your language? Let us know at [inquiry@sontek.com](mailto:inquiry@sontek.com).

### Moving Boat

Standard with every system and used for underway measurements that calculate discharge from a moving vessel.

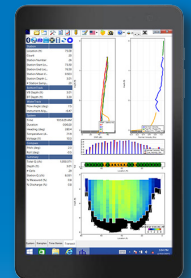
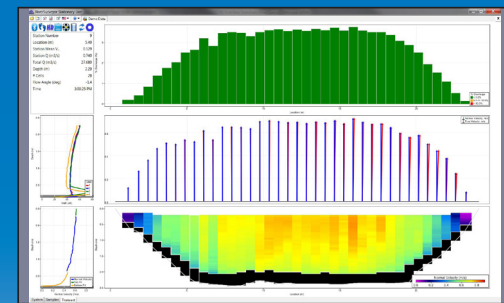


RiverSurveyor Live  
Mobile Multi-language Display

- Enables you to efficiently transect from one bank to the other with a full contour plot of the water velocity profile and bottom bathymetry.
- View multiple data results (bottom-track, vertical beam, GPS-GGA, and GPS-VTG) simultaneously.
- Supports USGS Loop Correction Method and Stationary Moving Bed Analysis for moving bed conditions.

### Stationary (Section-by-Section)

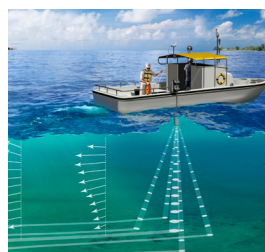
Optional add-on program that uses traditional USGS/ISO mid section or mean section methods.



RiverSurveyor Stationary Live  
Mobile Display

- An alternative to moving boat method for highly turbulent areas or moving bed environments where GPS is unavailable.
- Supports discharge measurements through ice holes.
- Supports sections that are braided or have islands.

## Get More Value.



### The SonTek HydroSurveyor

Own a RiverSurveyor system, but need survey data as well? Upgrade your current M9 system and collect bathymetric, water column velocity profile, and acoustic bottom tracking data. The upgrade includes:

- Full water column velocity mapping,
- Exclusive 5-beam depth sounding
- Acoustic bottom tracking (for speed over ground when GPS is lost)
- Sound speed integration and interpolation (when using with the CastAway-CTD®)



### The SonTek HydroBoard II.

One of the great sources of error in an ADP discharge measurement is excessive and irregular speed. The HydroBoard II's sleek and sturdy design provides the user with the platform to achieve the controlled speed and tracking conducive to quality ADP discharge measurements.

A dive-resistant, flexible body design allows the HydroBoard II to be used anywhere from low velocity irrigation canals to high-velocity mountain streams. Every HydroBoard comes equipped with reinforced mounting hardware, perfect for securing your instrument during unpredictable conditions.

