

Introducing the RS5 "Grab-and-Go" ADCP



A New Generation of Dopplers

Building on years of development and experience, SonTek has released the RS5, the world's smallest combination Broadband/Pulse-coherent acoustic Doppler current profiler (ADCP). A self-contained ADCP that fits in the palm of your hand, the RS5 features state-of-the-art acoustics technology contained in a rugged housing with a built-in compass, and easily-integrated GNSS options. RS5 data are sent wirelessly using a high-speed Bluetooth Low Energy (BLE) connection to your laptop through RSQ, a modern, powerful software platform to collect discharge measurements and perform advanced data post-processing.

SmartPulse+ and the Acoustics Engine

At the heart of the RS5 is the new acoustics engine using an advanced algorithm called SmartPulse+. New Broadband transducers allow the RS5 to take advantage of a hybrid Broadband/Pulse-coherent pinging algorithm with 4 different pings types. Settings are selected automatically with each sample to ensure the best quality data for any measurement conditions.



SONTEK:

Founded in 1992 and advancing environmental science in over 100 countries, manufactures affordable, reliable acoustic Doppler instrumentation for water velocity measurement in oceans, rivers, lakes, harbors, estuaries, and laboratories.

Headquarters are located in San Diego, California. SonTek is part of Xylem, Inc., a company that provides monitoring and data collection instrumentation to global water quality, water quantity, and aquaculture markets.

ADDITIONAL INFORMATION:

For more information about SonTek visit SonTek.com, or email SonTek directly at inquiry@SonTek.com.

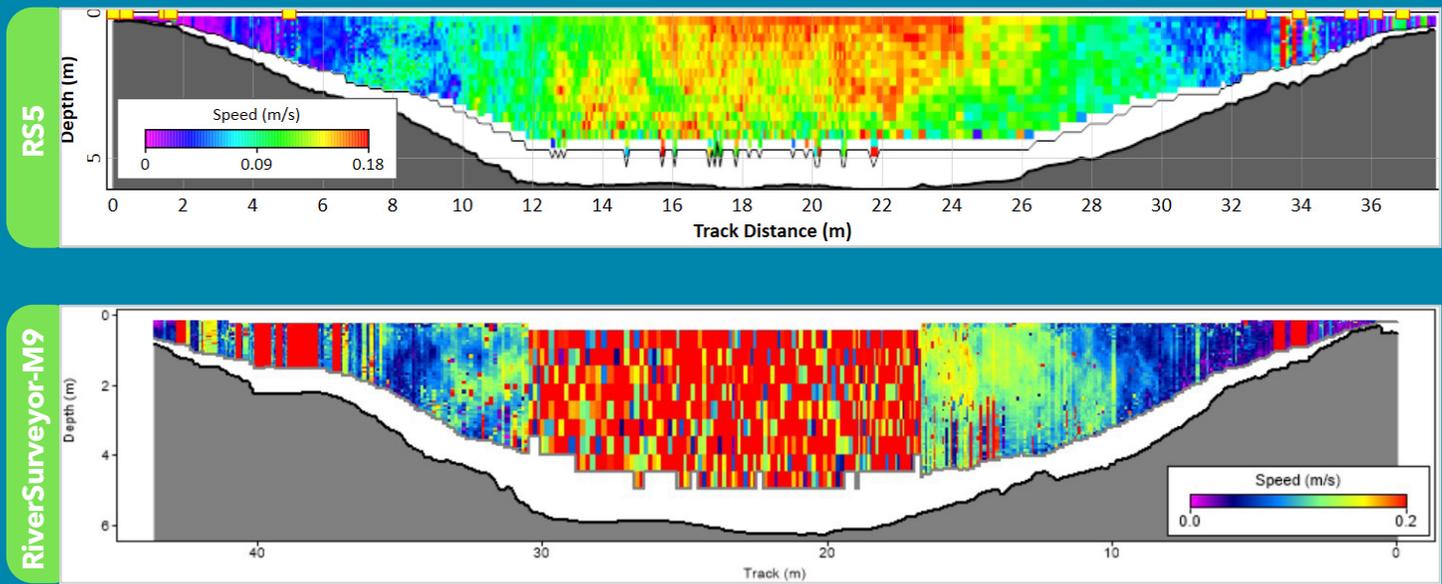


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Optimized for High Resolution Measurements Over Wide Range of Conditions

The SmartPulse+ algorithm allows the user to use the RS5 in a wide range of measurement conditions, from shallow, slow flows to deep (up to 6.5m or 21.3ft), fast-moving water without the user needing to change any settings.

In the data below, you can see how the RS5 even improves upon the high resolution data from the RiverSurveyor-M9 system.

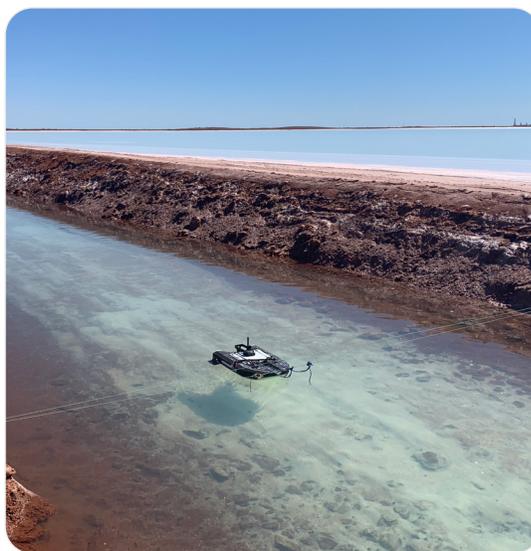


Unparalleled Data Quality Compared to Other Available ADCPs

Years of development in acoustic technology allows the RS5 to really shine compared to other ADCP systems available. The SmartPulse+ algorithm ensures that as much high quality data as possible can be collected. This produces velocity contour plots that often have stand-out features, like higher resolving power to see variations in the flow structure, in Pulse-coherent mode. Comparable ADCPs require the user to set a fixed cell size configuration and ping type, resulting in velocity contours that do not resolve the complex velocity structure that is observed at this site, despite the seemingly simplistic type of site.



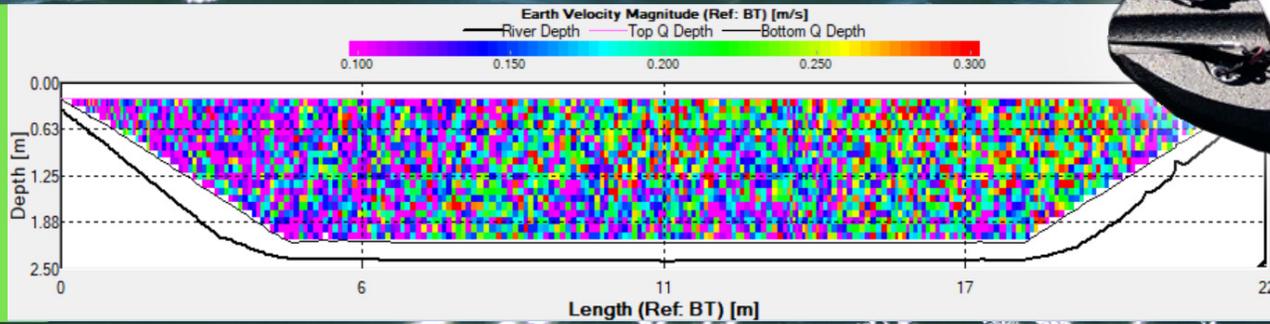
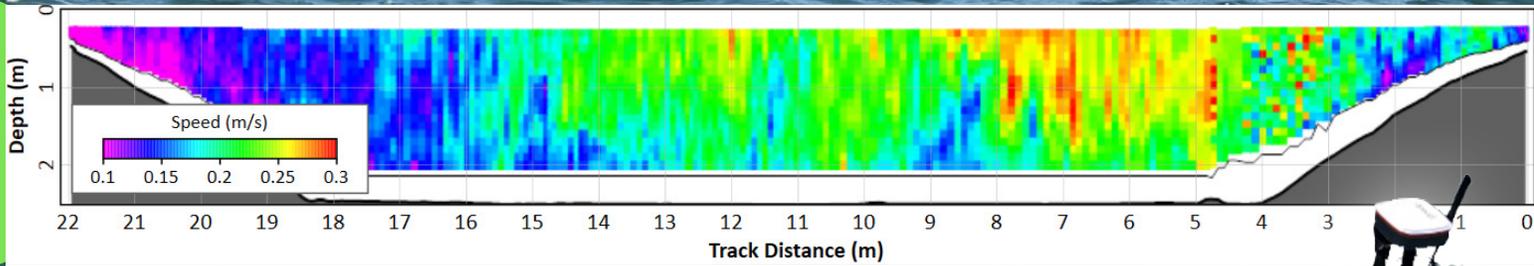
Skelton on the River Ouse near York, United Kingdom. Data and photo credits: Lee Pimble, SonTek Hydrometric Technical Applications Manager, Europe.



RS5 Beta testing and demo, Shark Bay Salt Mines, Australia.



RS5 Application Engineer testing site, Yuma, AZ (USA).



5-Beam Configuration with Dedicated Vertical Beam

As with the RiverSurveyor S5/M9 systems, the four skew beams gather velocity data, while the vertical beam acts as a dedicated depth measuring beam (essentially, a built-in echo sounder). This allows flexibility in the detected depth (vertical beam or average of skew beams) and better depth resolution compared to using only the skew beam average depth.

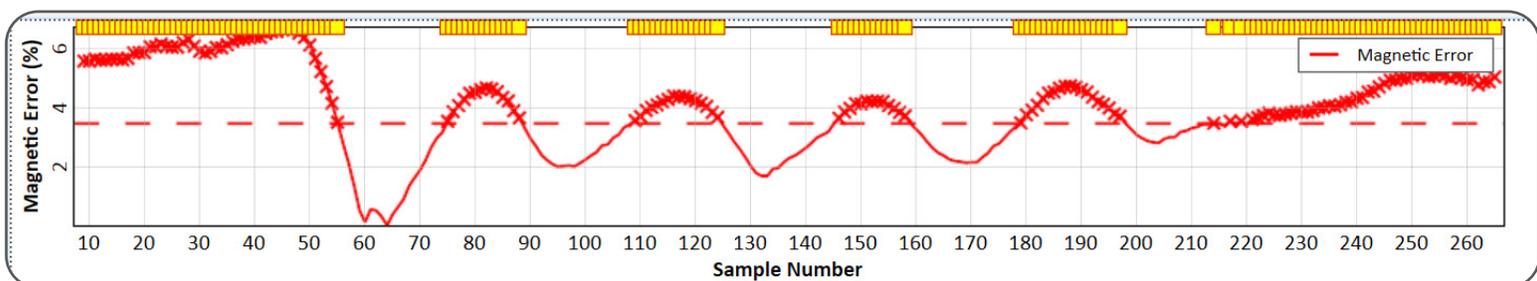


Hardware Highlights

With ease-of-use in mind, the RS5 packs many hardware features into a small package. There are two configurations available for the RS5, STD and MAX. The STD packages are a base configuration, while the MAX packages add DGNSS integration. And, the STD configuration can easily be upgraded to the MAX configuration at any time.

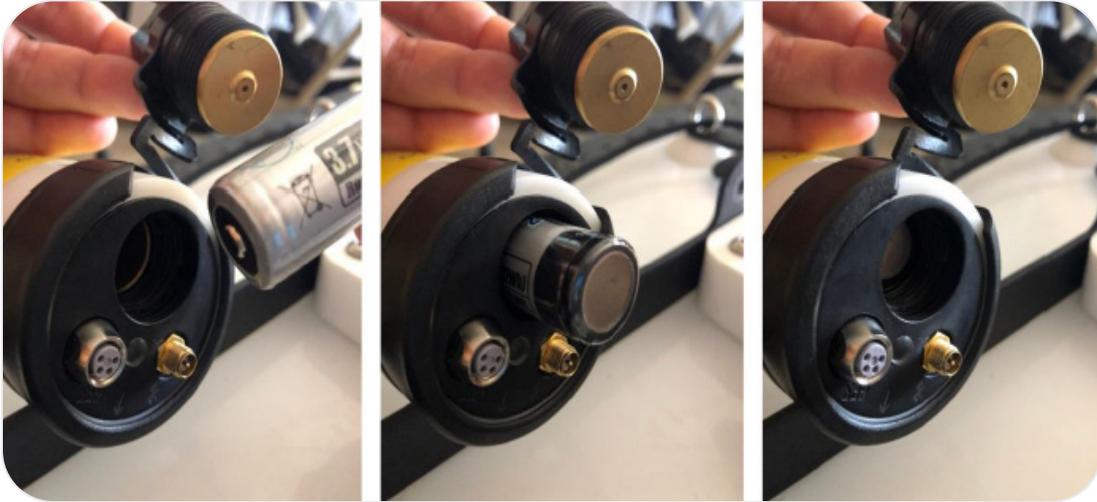
Internal Compass Comes Standard

An internal magnetic compass comes standard with each system, whether it be a STD or MAX version. This allows for Loop Method Moving Boat measurements and Stationary measurements (coming soon). The magnetic error provides live feedback on magnetic interference during a measurement.



Operates on a Single Battery

A single lithium-ion battery provides up to seven hours of battery life during active pinging, sufficient for one full day of field measurements. The RS5 kit comes with a spare battery and a battery charging kit with both USB and wall adapters for flexibility of use.



Pocket-Sized Convenience

Small, light and compact, the RS5 is the world's smallest ADCP. The size allows for easy mobility to move between sites, and offers excellent maneuverability in the water.



Integrated GNSS Option

Users have the ability to add a fully-integrated DGNSS option. The Juniper Geode antenna is a light-weight, powerful DGNSS antenna that comes configured for the RS5 when purchased through SonTek. A ruggedized cable connects the Geode antenna to the RS5, allowing for a DGNSS track reference along with bottom-tracking.

Other Useful Hardware Features!

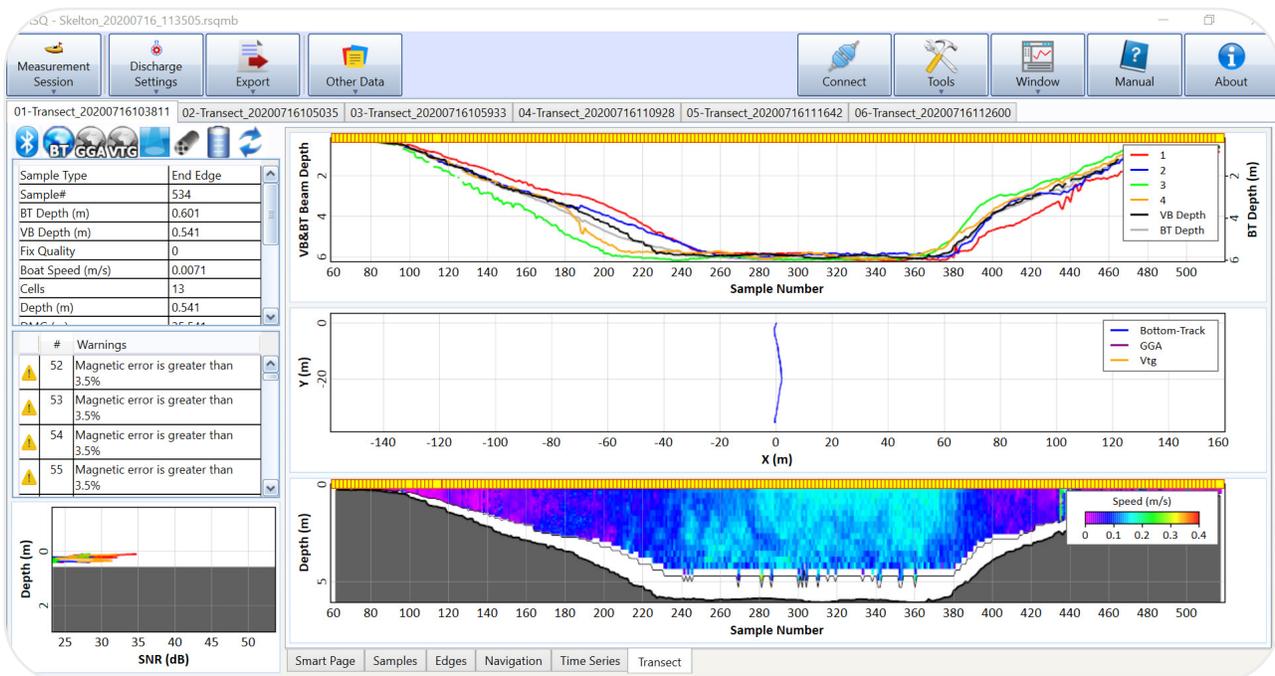
- Lightweight/portable board - can be stowed with instrument in carrying bag
- HB Micro Board with folding GNSS mast + straps for weight/GNSS stand
- Toolkit including tools to remove battery, open RS5 battery cap, O-ring kit, etc.



[Visit Geode Website for more information](#)

RSQ: Advanced Software for Data Collection and Post-Processing

RSQ is a modern software platform for performing discharge measurements with the SonTek RS5 system. Existing SonTek RiverSurveyor M9/S5 users will recognize the tried-and-true layout and process options from the RiverSurveyor Live software. RSQ uses a high-speed BLE5 Bluetooth connection to connect with the RS5 (via USB radio) to control the system during a discharge measurement.





Here are just some of the useful features users will see during an active measurement:

- 5 Minute Data buffer for wireless high-speed (BLE) communications, allowing the user to recover from any temporary interruption in the communication without having to abort the measurement and start over.
- Automatic edge samples, hot keys similar to the RiverSurveyor Live software for the S5/M9 systems.
- QA/QC Warnings for live measurement feedback.
- User-configurable plots and tables, zoom features, and color legend modification.
- Ability to review already-collected transect in the measurement during data collection.

Once data collection is complete, a powerful set of post-processing tools is available. Some features and unique abilities in post-processing include:

- **Beam Switching** - ability to force a 3-beam solution on multiple user-selected data segment to help with vertical walls and other obstacles impacting one beam
- **Sub-Sectioning** - break apart a long transect into multiple transects, save them into new files, and calculate discharge for shorter segments
- **Automatic Matlab export** (for QRev users)
- **Extrap integration** - a USGS extrapolation tool is built in to allow quick access
- **Google Earth export** - save boat tracks on a georeferenced .KML file
- **All transects in same file** - this keeps measurement files as a single file, aiding organization
- **Site Templates** - allows the user to enter frequently-used site information with one click
- **Record Beam Check files** - users can record these diagnostic files to learn about the water conditions and health of the system
- **Site Photos** - add site photos to the measurement file
- **Ability to open M9/S5 files** - edit existing M9/S5 .riv/.rivr files using all the mentioned post-processing tools

Coming Soon!

Stationary Measurement Options

Use the RS5 ADCP in a traditional Mid-section or Mean-section stationary measurement.

GNSS - RTK

The in-house RTK-quality GNSS solution will allow users to record boat tracks with sub-centimeter accuracy. This solution includes a rover and base station antenna.

Android App

The Android App will allow users to connect to the RS5 through their Android Smart Phones to collect a discharge measurement and easily transfer data files to the PC where post-processing can be performed.

[Request a DEMO!](#)

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Sound Principles.
Good Advice.



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