



GEO-RiverRay ADCP

HIGHLY VERSATILE DISCHARGE MEASUREMENT SYSTEM

Take the Guesswork out of your Discharge Measurements

Go straight to work collecting highly accurate stream and river discharge data with the new **RiverRay Acoustic Doppler Current Profiler (ADCP)**. This economical, turn-key system comes complete with: the ADCP, boat, software, and wireless communications—everything you need to collect superior, real-time data.

With over 25 years experience delivering acoustic Doppler products, Teledyne RDI's new RiverRay is the culmination of years of technology advances and invaluable customer feedback.

From a shallow stream to a raging river, the revolutionary RiverRay delivers the simplicity and reliability your operations require, at a price that won't break your budget.



The RiverRay ADCP utilizes a flat-surface, phased array transducer.

RiverRay Highlights:

- *Ease of use—easy to carry, easy to deploy, and easy to operate; just power and go.*
- *QrZ-control—automatic adaptive sampling continuously optimizes your discharge measurement from bank to bank, thus ensuring the highest quality data without your intervention.*
- *Reduced size, weight, and flow disturbance—the sleek new phased array transducer design provides increased data accuracy, as well as reduced size, weight, and flow disturbance.*
- *Versatile—a single instrument can now deliver high quality data in a 0.4m stream or a 40m river.*
- *Superior surface measurements—interwoven independent and short range measurements improve the discharge computation in your critical surface layer.*
- *Platform stability—RiverRay's new float, designed and built by OceanScience, boasts reduced drag, causes less flow disturbance, and provides superior handling—even in high water velocities and waves.*
- *No cables required—data is wirelessly transmitted to your shore station via Bluetooth™ technology.*
- *DGPS compatible—integrate an external DGPS for difficult conditions, such as moving beds.*



Technical Specifications

Water Velocity Profiling

Operation mode	Broadband or pulse-coherent, automatic
Velocity range	$\pm 5\text{m/s}$ (default), $\pm 20\text{m/s}$ max.
Profiling range ¹	0.4m to 40m
Accuracy	$\pm 0.25\%$ of water velocity relative to ADCP, $\pm 2\text{mm/s}$
Resolution	1mm/s
Number of cells	automatic, 25 typical, 200 max.
Cell size:	automatic, 10cm min.
Surface cell range ²	25cm
Data output rate	1-2 Hz (typical)

Bottom Tracking:

Operation mode	Broadband
Velocity range	$\pm 9.5\text{m/s}$
Maximum depth	70m (@15°C, fresh water)
Accuracy	$\pm 0.25\%$ of bottom velocity relative to ADCP, $\pm 2.5\text{mm/s}$
Resolution	1mm/s

Depth Measurement:

Range	0.3m to 70m (@15°C, fresh water)
Accuracy	1% (with uniform water temperature and salinity profile)
Resolution	1mm

Standard Sensors:

Sensor	Temperature	Tilt (solid state)	Compass (solid state)
Range	-5° to 45°C	$\pm 15^\circ$	0-359.99°
Accuracy	$\pm 0.4^\circ\text{C}$	$\pm 0.5^\circ$	$\pm 2^\circ$
Resolution	0.01°C	0.01°	0.01°

¹Minimum range assumes one good cell (10cm), range measured from the transducer surface.

²Distance measured from the center of the first cell to the transducer surface.

Transducer and Hardware

System frequency:	600kHz
Configuration:	Phased array (flat surface), Janus four beams at 30° beam angle
Internal memory:	16mb internal recorder

Communications

Standard: RS-232, 1200 to 115,200 baud. Bluetooth, 115,200 baud, 200m range.
Optional: Radio modem, range >30km (line of sight)

Software (included)

WinRiver II
 Windows XP/Vista compatible



Power

Input voltage:	10.5 to 18 VDC
Power consumption:	1.5W typical
Battery (inside float):	12V, 7A-hr lead acid gel cell (rechargeable)
Battery capacity:	>40 hrs continuous operation

Float (included)

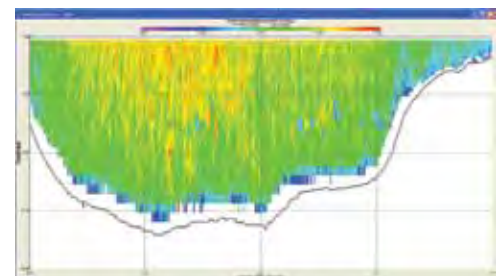
Configuration:	Three hulls (trisaran)
Material:	Polyethylene
Dimensions:	L 1200mm, W 800mm, H 180mm
Weight:	10kg bare, 17kg with instrument and battery

GPS Integration (optional)

Integration with GPS (customer supplied) through RS-232 to RR data stream

Environmental

Operating temperature:	-5° to 45°C
Storage temperature:	-20°C to 50°C



Sample data.