

Previous Generation (Type RIV) ADCP Core Comparative Data Compilation

This data compilation is extracted from official usage reports issued by five major authoritative hydrological institutions in China. All tests were conducted under rigorous field water conditions using strict synchronous alternating measurement methods, providing a direct flow measurement comparison between our independently developed equipment and top international mainstream devices (such as RDI and SonTek from the US).

Extensive measured data show that the relative error in flow measurement of the RIV ADCP is generally controlled within **±3.5%**, with the average error in some tests being less than **1%**. The data accuracy is highly consistent with top international products of the same class.



1. Guangdong Provincial Hydrology Bureau: Makou Station

Comparison Equipment: US RDI 600kHz & 300kHz ADCP

Table 1.1: Discharge Measurement Comparison (RIV1-600kHz vs RDI 600kHz)

Test No.	Domestic RIV1-600kHz (m ³ /s)	US RDI 600kHz (m ³ /s)	Absolute Error	Relative Error
1	15903	16181	-278	-1.7%
2	16415	16534	-119	-0.7%
3	16279	16574	-295	-1.8%
4	16617	16288	329	2.0%
5	16705	16979	-274	-1.6%



Data Insights

In massive discharge measurements exceeding 16,000 m³/s, the error between domestic equipment and RDI is minimal, with an average error of only 1.8%, reflecting extremely high algorithm stability and flow measurement accuracy.



2. Shanghai Hydrology General Station: Songpu Bridge Station

Comparison Equipment: US RDI Workhorse 600kHz ADCP

Test No.	Domestic RIV1-600kHz (m ³ /s)	US RDI 600kHz (m ³ /s)	Relative Error (%)
1	2099	2073	1.3%
3	2058	2018	2.0%
6 (Max)	1964	1904	3.2%
8	1861	1830	1.7%
9 (Min)	1805	1808	-0.2%



Official Evaluation

Across 9 consecutive valid tests, the maximum error was only 3.2%, and the minimum error approached 0%. The Shanghai Hydrology General Station praised it for being "stable and reliable in operation, with highly consistent measurement results meeting specification requirements."



3. Jiangxi Provincial Hydrology Bureau: Xiajiang Station

Comparison Equipment: US SonTek M9

Test No.	Domestic RIV1-600kHz	US SonTek M9	Relative Error (%)
1	2922	3023	-3.3%
4	3392	3272	3.7%
Average Performance	3193 m ³ /s	3180 m ³ /s	0.4%



Extreme Environment Validation

Encountering unfavorable factors such as rainy weather and poor water flow conditions, the average relative error astonishingly remained at **0.4%**, demonstrating strong environmental adaptability and anti-interference capability. It also successfully verified stable wireless network transmission under severe weather for the first time.



4. Lower Yangtze River Bureau: Nanjing Station

Ultra-large discharge measurement (nearly 30,000 m³/s), bottom-tracking mode vs RDI.

Max Error	2.2%
Min Error	-0.7%

Conclusion: Error stably controlled within 2.5%, meeting large-scale hydraulic survey standards.



5. Yellow River Conservancy Commission (YRCC)

Large-scale comparative verification lasting several months, accumulating over 200 tests.

Proportion of tests
with Error < 5% **> 95%**

Total Avg. Error
(136 Valid Tests) **0.5%**

Outstanding Heritage, Brand New Evolution

The independent test reports issued by the top five key hydrological institutions in China unreservedly prove: our core capabilities in acoustic signal processing and discharge calculation algorithms have long been on par with top global brands, fully meeting the strictest national standards for hydrological measurement.

Building upon the massive field measurement database and mature algorithms accumulated from the previous generation, we have launched the **all-new iADCP series**. With comprehensive upgrades in hardware integration, intelligent adaptation, and industrial design, its measurement performance is even more outstanding and stable, making it your most trusted choice.

[Discover the New iADCP Series](#)