

Description of Changes in QRev 3.10

Introduction

QRev 3.10 is a major upgrade from QRev 2.90. There have been many bug fixes and new features added. For a complete list see the List of Changes section in this document. The use of some otherwise hidden and some key features are described in more detail.

New Updated User's Guide

The User's Guide is accessed by clicking the ? icon on any page. The User's Guide is now in HTML and is context sensitive so you will be shown the page in the User's Guide for the window you clicked the icon from. A table of context on the left allows you to navigate anywhere in the User's Guide once it is opened. Clicking on the numbers next to a screen capture in the User's Guide will take you to help for that feature.

User Button

The User button has been removed. All settings previously under the user button are available from other buttons and windows. Magvar is now under Compass / P / R . Draft is under Depth Filters / Draft. Temperature, salinity, and speed of sound are under Temp / Salinity. Site name and number are under ADCP / Site Info.

Changing Table Values

Previously the top line of some tables allowed changes to be applied to all transects and editing a value for a single transect occurred directly in the table. Now clicking on an editable value in a table opens a dialog box that allows you to make a change and then apply it to only that transect or to all transects.

Only Checked Transects in Tables

Previously all loaded transects appeared in the filter window tables. Now only checked transects will appear. All transects still are shown in the main window and are updated with any changes made to all checked transects.

Loading Saved QRev Files

Because version 3.10 has new features and quality checks, when loading a file saved with an earlier version of QRev the user will be presented with a dialog box. The dialog box will give the user the ability to view the data as previously processed or to reprocess the data using the new 3.10 changes. If the user chooses to view the data as previously processed they can look at the data using any of the windows and buttons but any change will result in the data being reprocessed using 3.10 features. This allows the user to review data that may have been processed with an earlier version without reprocessing the data in 3.10.

RioPro Excluded Distance

Upgrading a Rio Grande to a RioPro results in the reduction of the blanking distance from 25 cm to 10 cm. In the auto adaptive mode the RioPro will not accept the blanking distance command (WF25). However, since the form factor of the RioPro is the same as the Rio Grande we would expect the same

flow disturbance. QRev will automatically exclude data in the first 25 cm from the transducer face for all RioPro data to avoid using data that are affected by flow disturbance.

Support for External Heading

QRev now supports the use of external heading, such as heading data collected in WR2 or RSL using a V102 or similar. With this addition, the magnetic variation is only applied to the internal compass and the heading offset is only applied to the external compass. All compass settings are completed in the Compass / P / R window.

Hidden / Keyboard Options

Several new features are currently only available through the keyboard.

Uncheck all transects: from the main window **ALT-u** will uncheck all transects

Save only checked transects: from the main window **ALT-s** will toggle the save button to save only checked transects in the *_QRev.mat file or set back to the default of saving all loaded data. The Save button will change from "Save" to "Save Checked".

The combination of ALT-u and ALT-s provides a more efficient way to process tidal or rapidly change flow measurements. The following steps are suggested:

- 1) load tidal measurement,
- 2) ALT-s to toggle save only checked,
- 3) ALT-u to uncheck all,
- 4) check first set of transects,
- 5) complete processing
- 6) click save
- 7) repeat 3-6 for each set of transects

Plot to Google Earth: typing **ALT-g** from the GPS filters window will create a kml file, open Google Earth (if installed), and plot the shiptracks.

Moving-bed Test Manual Override

If QRev determines that a moving-bed test is invalid the user can now override QRev by checking the Use for Correction box. A dialog will appear and the user must click "Justify and Use". A comment dialog will then appear and the user needs to justify why they are overriding the quality checks.

List of Changes

- 1) Support for external heading
- 2) Magvar only applied to internal compass and heading offset only applied to external compass
- 3) Support for change in magnetic field for RiverSurveyor with G3 compass
- 4) Quality assessment of pitch and roll (mean and standard deviation)
- 5) New user interface to view heading, pitch, roll, and compass calibration and evaluation
- 6) User button has been removed
- 7) Speed of sound, temperature, and salinity are all now handled in the Temp/Sal button and associated window

- 8) Added reading of salinity from both the pd0 and mmt files
- 9) Added percent change in discharge to table for temperature, salinity, and speed of sound
- 10) Draft setting has been moved to the Depth/Draft window
- 11) The use of the first line of some tables to set values for all transects and direct editing of the values in the tables have been replaced with user input dialogs which allow the user to make the appropriate change for the selected Transect Only or All Transects
- 12) Negative values are not allowed for edge distances and number of edge ensembles
- 13) Added % Q in edges to edges table in edges window
- 14) Quality assessment for movement of the boat during edge data collection
- 15) HDOP filter changed to max=4 change=3
- 16) Changes in speed of sound are now applied to water velocity, bottom track boat velocity, cell size, cell depth, and total depth
- 17) Fixed issue with WR2 saving duplicate moving-bed tests
- 18) Modified code to allow reading of files saved with earlier versions
- 19) Added ability to uncheck all transects
- 20) Added ability save only checked transects
- 21) Tables in windows other than main window only display checked transects
- 22) Moving-bed test marked invalid can be overridden
- 23) Loading a QRev file saved in a previous version generates a popup dialog
- 24) Screening distance of 25 cm implemented for RioPro
- 25) Added quality check and message is excluded distance causes ensembles for edge to be marked invalid
- 26) Critical threshold for stationary tests changed to 150 valid ensembles
- 27) QRev now reads mmt files with invalid XML characters
- 28) Changed 3-beam auto filter to use the first valid 4-beam solution for comparison with 3-beam solutions at the beginning of a transect and the last valid 4-beam solution for comparison with 3-beam solution at the end of a transect.
- 29) Automatically interpolates invalid heading values. Linear interpolation is used for interior ensembles. Ensembles with invalid heading at the beginning are assigned the first valid heading. Ensembles with invalid heading at the end are assigned with the last valid heading.
- 30) Removed QA check for invalid ensembles exceeding 5%
- 31) Added QA check caution if total interpolated Q (cells + ensembles) exceeds 10%
- 32) New User's Guide
- 33) Other bug fixes