HYPACK
a xylem brand

Sounding Better!

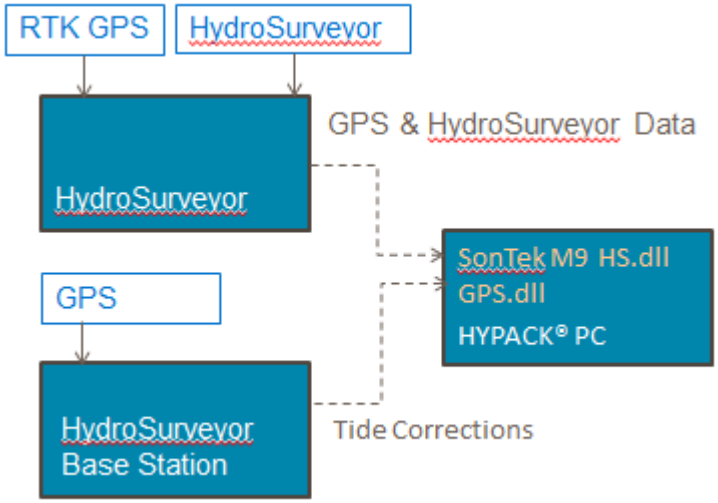
# SonTek HydroSurveyor in SURVEY

By Judy Bragg

## HARDWARE CONFIG

The simplest hardware configuration (Figure 1) includes only a GPS (GPS.dll) and the SonTek HydroSurveyor (SonTekM9.dll).

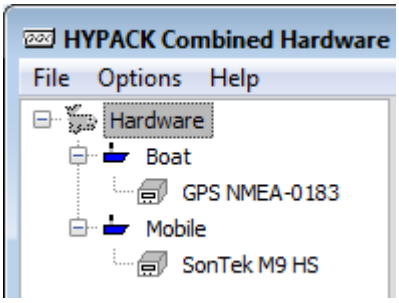
***FIGURE 1.*** *System Schematic*




The January *Sounding Better!* included an article on the HydroSurveyor HARDWARE configuration that need not be repeated; however, I did want to mention one added tip:

***Tip:*** When using bottom tracking, assign the HydroSurveyor and GPS to *separate mobiles*. This enables you to compare the positioning of each system and prevents the vessel display in the HYPACK® SURVEY Map window from jumping as you change systems.

***FIGURE 2.*** *Configuration Tree in HARDWARE*



## THE HYDROSURVEYOR IN SURVEY

The SonTek M9 HS driver has a tabbed device window in SURVEY, each tab with different displays and purposes: Depth, Beam Profile, and Bottom Tracking.

### DEPTH TAB

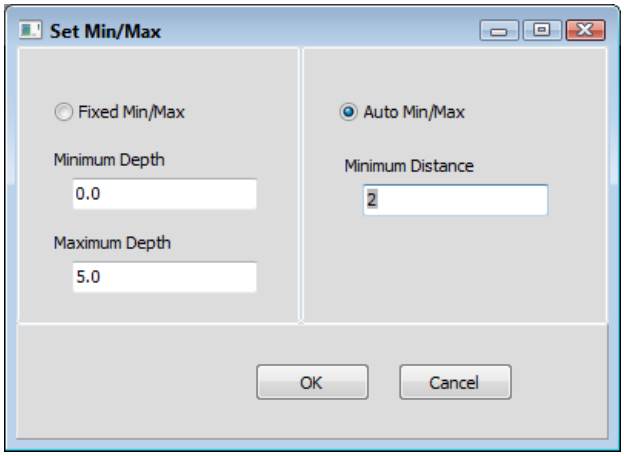
A chart with the last 100 depths. In addition, the window displays the uncorrected depths in the sensor head diagram.

The graph can scale automatically, but you can also manually set the depth range. You may also modify the trace color for each beam. (Click its color box and choose the new color from the color dialog.)

**To set vertical scale for the depth graph**, use the Chart Scaling options.

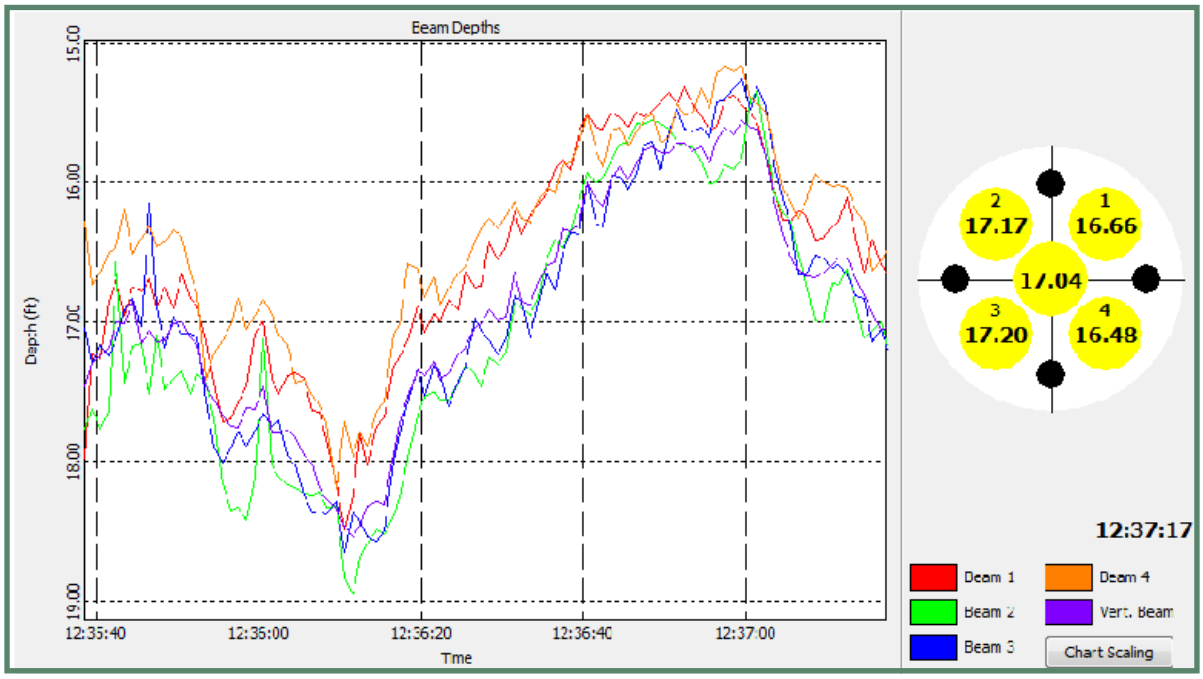
1. **Click [Chart Scaling]** to access the configuration dialog.

   ***FIGURE 3.*** *Chart Scaling Dialog*




2. **Set your options and click [OK].**
   - **Autoscaling:** Select the Auto Minimum/Maximum option. The Minimum Distance option defines the smallest depth range you want to display.
   - **Manual Scaling:** Select the Fixed Minimum/Maximum option and enter the depth range you want to display.

***FIGURE 4.*** *SonTek M9 HS Device Window—Depths Tab*




## BEAM PROFILE TAB

The Beam Profile tab shows the current velocities (corrected for the bottom track velocity) and a beam amplitude profile along its path to the bottom.

On the right, the circular display shows the velocity of the current relative to the boat.

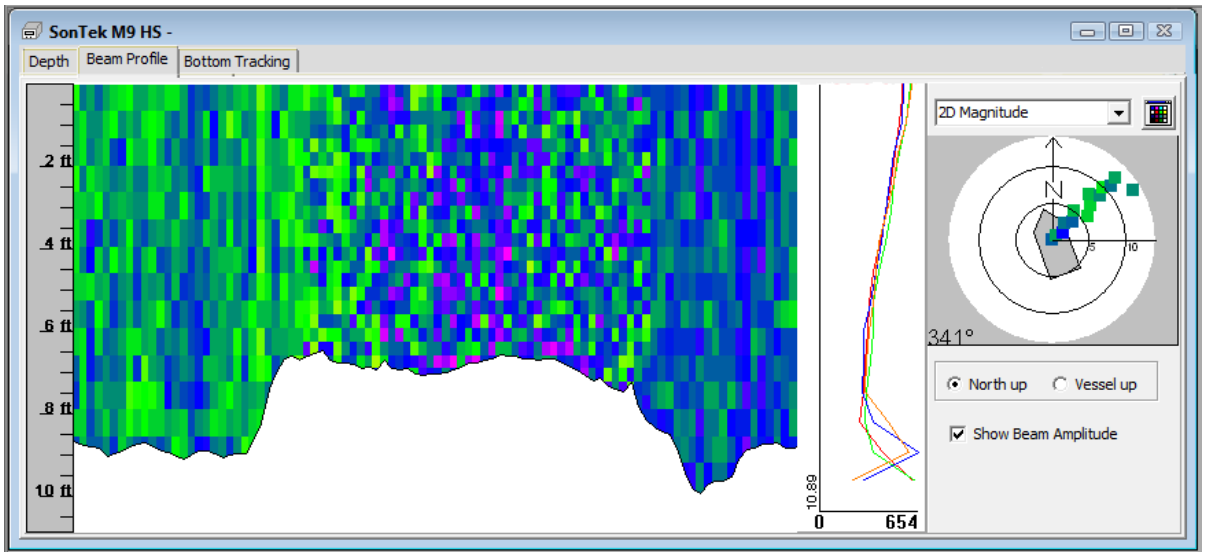
The optional amplitude profile display is useful to QC check your depths. The beams should descend smoothly together until they reach the bottom.

**To show the amplitude profile**, check the Show Beam Amplitude option.

**To choose the value for the graph displays**, select from the drop-down menu options.

**To customize the color settings**, the Colors icon accesses the standard Colors dialog. The colors configured from the Profile window affect only the Profile display.

*FIGURE 5. SonTek M9 HS Device Window—Beam Profile Tab*




## USING BOTTOM TRACKING FOR POSITIONING

You can use SonTek M9 HS bottom tracking for positioning in areas where you are likely to lose GPS signal.

During SURVEY, just before you lose GPS signal, check the **Use Bottom Tracking** check box in the Bottom Tracking tab of the Device window. When you regain GPS signal, clear the same check box.

**IMPORTANT:** *We recommend using the bottom tracking only when you need it*. Its position is relative to the last position allowing errors to propagate over extended periods of time.

The Device Window display in the Bottom Tracking tab shows the GPS position (blue) and the bottom tracking position (red).

*FIGURE 6. SonTek M9 HS Device Window—Bottom Tracking Tab. GPS Position (blue) and the Bottom Tracking Position (red)*