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Syqwest Hydrobox Software Upgrade and new Features V2.45

The Hydrobox product has gone through a significant Software and Firmware update based on feedback from our customers. All of the updates have been incorporated to provide the user with enhanced performance during data acquisition and data storage. Hydrobox data storage has been enhanced to provide position and depth information in a comma separated variable format (.CSV). The major system improvements are listed and described in detail below:

Improved Shallow Water Digitizing Performance – This enhancement provides for better "hands off" operation in shallow water and also allows for operation down to the shallowest of depths in manual mode.

Improved Auto All Operation – This product improvement includes the updates for shallow water operation but also provides for reliable depth digitizing in deeper water depths and at both high and low frequencies of operation.

Bottom Digitizer Threshold Parameter – The Bottom Digitizer Threshold parameter has been incorporated to allow the user to manually adjust the amplitude threshold that is recognized as a valid bottom target. The scale is 0 through 9. A "0" setting allows the digitizer to lock onto the strongest returns (i.e. dark colors such as red in the RAINBOW pallet). A "9" setting allows it to lock onto the weaker returns (i.e. lighter colors such as green in the RAINBOW pallet). In shallow water and soft sediment survey conditions a higher value is required to consistently digitize on the bottom without saturating the first few meters of bottom penetration. The default setting is "0", which should work under most conditions. Increase incrementally as required.

User selectable Gate Limits - Bottom Gate Limits are provided to help the user ensure that the data captured reflects the correct digitized bottom depth when conditions are difficult. The Hydrobox is intended for use in shallow water. Unfortunately, using any sonar in very shallow water creates challenges due to surface reverberation and multiple echo issues. By using the Bottom Gate Limits the user can ensure that the digitizer does not lock on a transmit reverberation or a 2nd echo return. The Bottom Gate Limit values for Shallow and Deep limits are entered in the selected units (Feet or Meters) and the "Enable Gate Limits" check box allows the Gate Limits to be Enabled or Disabled. Please note Gate Limits will only work in manual range and gain mode (not for use in auto mode). When Manual Gate Limits are enabled their selected values will show up in the lower right corner of the screen as GLS (Gate Limit Shallow) and GLD (Gate Limit Deep). Also, once enabled if the actual bottom moves out of the selected window you will no longer be able to digitize (you will get -.- for depth). When the Gate Limits are disabled a message is displayed to alert the user that they have been disabled and should be re-checked.

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Sensor Reset on Program Exit – This feature causes the Hydrobox sensor to be reset whenever the user exits the Windows Application software. It eliminates the need for a cycle of the sensor power to reset the sensor interface.

NMEA Depth Output written to .CSV file – The Hydrobox host application has been updated to write the NMEA Depth output string to a comma separated variable file that can be easily imported into an MS Excel spreadsheet or another application for processing. The .CSV file is written in the format selected via the NMEA Out Dialog box as selected by the user (DPT, DBT, PMC, or ODEC). Whenever the user "Starts Recording" the .CSV file is saved along with the .ODC file. The .CSV file is saved in the user specified directory that is set in the "User Preference" Dialog Box. We had a number of requests for this feature and hopefully many of our customers will put the data to good use.

NMEA I/O and External Event COM Port Settings – The COM port selection settings for the NMEA Input, NMEA Output, and External Events was updated to support a more flexible for the user. Each of the functions can be connected via a separate COM port or used together to minimize COM port usage. Previous versions of the Hydrobox required the NMEA In and NMEA Out ports to be connected to the same COM port. This update allows for a simpler connection between the Hydrobox and the HyPack or HyDroPro software packages.

NMEA I/O Output written to Port during Playback – This feature allows the user to produce a comma separated variable (CSV) type file from ODC files collected in the past through the use of HyperTerminal or another terminal emulator program. This feature is helpful in situations where the Depth and/or Time and Position information was not logged properly during the acquisition portion of the survey. To execute this feature, set the Hydrobox up such that it would output NMEA depth via your selected COM port and using a NULL MODEM cable connect to another open COM port that you can run terminal software such as Windows Hyperterminal. Insure that you have the button checked for ODEC string. Set up Hyperterminal to store (capture text) then simply playback the collected file as you normally would. During playback, the hydrobox software will send ASCII data out to Hyperterminal.

There are a number of speed, timing and test improvements that are included in this update as well that allow the application to start up faster, run with less CPU usage, and provide the developers and users with debug information when needed. These updates need not be described in further detail.