WinFrog Device Group:	Sounder
Device Name/Model:	**Odom DF3200 MKII**
Device Manufacturer:	**Odom Hydrographic Systems Inc.** 8178 G.S.R.I. Ave., Bldg. B Baton Rouge, Louisiana, 70820-7405 USA Tel: (225) 769-3051 Fax:(225) 766-5122 http://odomhydrographic.com
Device Data String(s) Output to WinFrog:	ASCII string depends on configuration: **Single Bottom Tracking:** Status, Depth **Dual Bottom Tracking (with 1 freq.):** Status High or Status Low / Depth High or Depth Low **Dual Bottom Tracking(with 2 freq.):** Status High and Status Low, Depth High and Depth Low
WinFrog Data String(s) Output to Device:	RS-232 format ASCII event data
WinFrog .raw Data Record Type(s):	Depth: Type 411 and/or 911 For 411: depth, status & dtime are repeated 15 times

DEVICE DESCRIPTION:
The ODOM DF300 MKII dual frequency echo sounder employs a high-resolution thermal printer, microprocessor, DSP techniques, and flat screen displays.

The sonar transceiver, echo processor, graphical operator interface and hardcopy recorder are all housed in one portable, splash-proof case. The unit is suited to table top, bulkhead, or rack mounting and can be used on either small survey launches or large ships. The ECHOTRAC is capable of working to depths of over 2,000 meters. The DF3200 MKII can be configured with either single or dual frequency capabilities. Standard frequencies are 200 and 24 kHz, or 210 and 33kHz. Option frequencies are High (100kHz to 1 MHz), Low (10kHz to 60 kHz), and Side Scan (200kHz).

Odom DF3200

DEVICE CONFIGURATION INSTRUCTIONS:

The DF3200 can be configured for high, low or dual frequency operation. The ODOM depth information is output after each sounding cycle with the standard string including values for both the high and low channels in dual frequency operation. Output strings conforming to other major echo sounder formats are available. In addition, system parameters can be configured via comm1. The ECHOTRAC accepts annotation of up to 80 characters (printed on the Fix Mark Line). Standard NMEA formats from GPS receivers as well as proprietary strings from positioning and navigation systems can also be annotated on the chart. Interfacing to data acquisition systems is asynchronous and does not require handshaking.

The DF3200 MKII has four bi-directional RS232 serial ports. For data output to WinFrog, use port Com1 (J5) or Com3 (J7). Com1 is the dedicated serial output port, sending ASCII format data at the completion of each sounding cycle. This connection requires a special "cannon" type connector (PN MS3116J12-8P) at the ODOM end. This connector uses 4 pins in the following convention:

Pin Number	Description
A	RS-232 Output
B	Shield
C	Shield
D	RS-232 Input

As can be seen from the above table, to receive ODOM depth data in WinFrog, you must connect Pin #A (RS-232 Output) to the RS-232 Input (Rx) pin on the desired WinFrog serial computer port. According to RS-232 convention, receive data (Rx) is always set to pin 2 on a DB9 connector, and pin 3 on a DB25 connector.

Likewise, if you want the ODOM to receive ASCII text from WinFrog (for annotation on the chart), you must connect the transmit (Tx) pin on the WinFrog serial port to the RS-232 input pin on the ODOM connector (i.e. pin D). According to RS-232 convention, transmitted data is always set to pin 3 on a DB9 connector, and pin 2 on a DB25 connector.

You must also connect the ground pin on the WinFrog end (pin 5 on a DB9 connector, and pin 7 on a DB25 connector) to the shield pins on the ODOM (i.e. pins B or C as required).

The data that is sent by the ODOM depends on the SWCONFIG value set in the AUX menu. Alternatively, you can set the SW1 DIPswitches on the DF3200F's Front Panel CPU card; these two "switches" are complimentary in their functions. A new SWCONFIG value can be selected in the AUX menu, however, once a reset is accomplished, the unit will return to the default SWCONFIG value dictated by the DIPswitches.

You must go to the ODOM's AUX menu to configure the appropriate data content and format (use the left right arrow on the keypad until AUX is highlighted. In this menu highlight the **SerialOut** option, then select from the following options:

SBT: Single Bottom Tracking- sends data in the standard single frequency EchoTrac string.
DBT: Dual Bottom Tracking – sends depth information from both the high and low channels when the Frequency parameter (SYSTEM sub-menu) is set to DUAL.

Note that placing the unit in DUAL mode does not automatically change the serial output to DBT-you must configure this using the AUX submenu.

The DIPSwitch settings (specifically when set to SW Config #0, 2, and 3) also affect the data being output from the DF3200 MKII:
SW Config # 0 is the default setting. Standard serial strings are sent and standard features apply.
SW Config # 2 transmits the standard serial string, however on the chart, scale lines are printed at 1 foot increments (20cm increments in meters).
SW Config # 3 transmits the standard serial string, however on the chart, only the fix number is printed (i.e. depth and time are omitted).
SW Config # 5 adds a line feed at the end of the standard serial output string (G&B).

The ODOM 's port COM1 uses the following communication parameters:

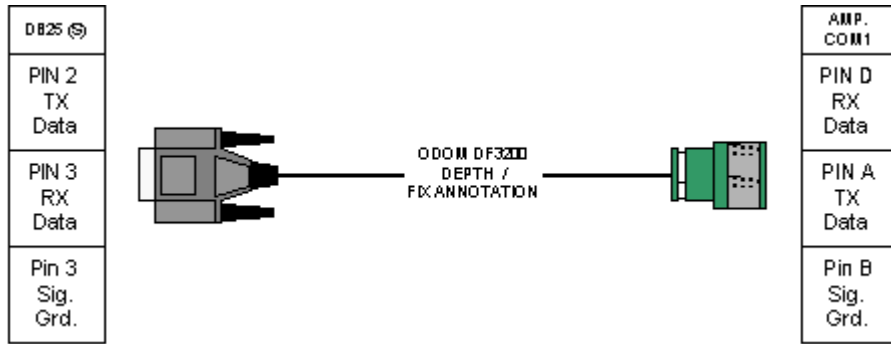**Baud Rate: 9600**
Data Bits: 8
Stop Bits: 1
Parity: None

If you require event marks to be generated on the ODOM's chart record, you must connect WinFrog to the EXT. MARK (J1) connector. This connection uses a BNC male connector.

Pin Number	Description
Center	Mark Input
Barrel	Mark Return

You must connect this cable to the WinFrog computer, see below diagram for wiring details.

WINFROG I/O DEVICES > CONFIG OPTIONS:
The Odom DF3200 is added to WinFrog from the **SOUNDER** device category. The unit must be configured at this level to ensure that WinFrog accepts the depth data in the correct units. Select meters, feet, or fathoms as per the ODOM setup.
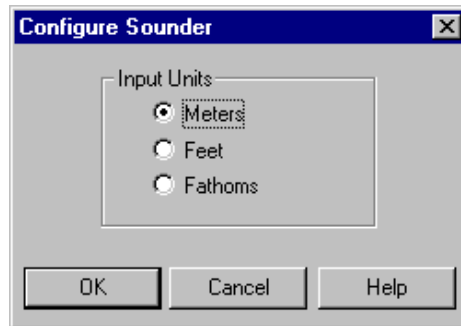
Adding the ODOM DF3200 device to WinFrog creates the **SOUNDER, ODOM DF3200, MULTIBOTTOM** data item.

WINFROG VEHICLE TEXT WINDOW > CONFIGURE VEHICLE DEVICES > DEVICE > EDIT OPTIONS:
Once the device is added to the vehicle's device list, you must configure the ODOM MULTIBOTTOM data item to suit the application. In the vehicle's device list, highlight the **SOUNDER, ODOM DF3200, MULTIBOTTOM**, data item and click the Edit button. The standard **Configure Sounder** dialog box appears as seen below.
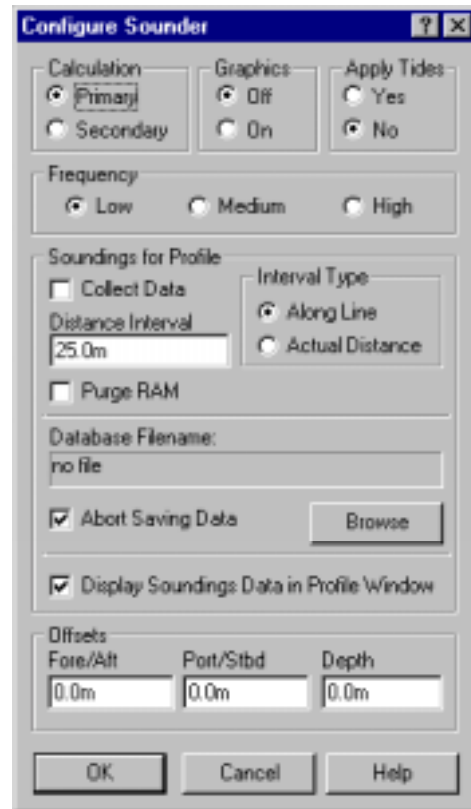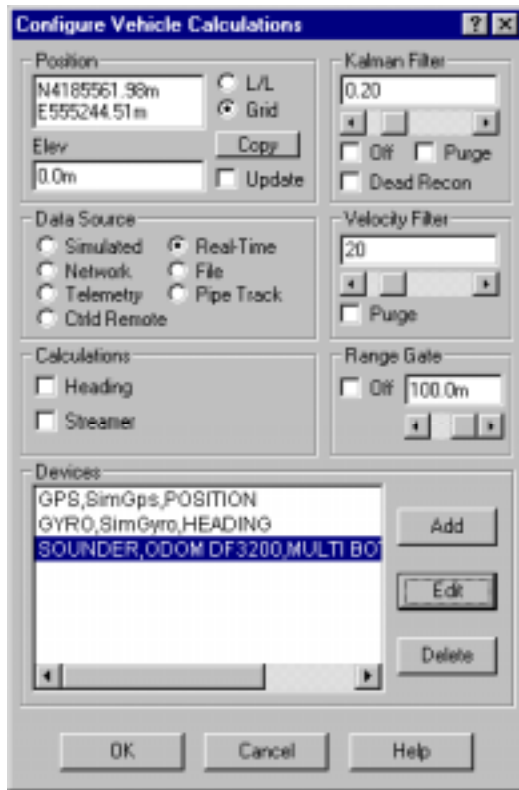
The Configure Sounder dialog box is the same as for a standard sounder device except for the addition of three Frequency buttons: **Low**, **Medium**, and **High**. Select the appropriate radio button to have WinFrog utilize the correct data.

Note that you must also define the interval at which annotation information will be output to the DF3200. This is established in the Setup Data Events> Event Configuration > Eventing dialog box. Enter the desired annotation interval value in the Secondary entry window. Entering a 5, for example, tells WinFrog to output the ASCII annotation data only every 5th event.

Calculation:
Set the type of calculation to **Primary** or **Secondary** using the appropriate radio button. WinFrog will only utilize (i.e. display and record) data from a Primary sounder device. If there is more than one Primary sounder attached to a vehicle's device list, WinFrog will not mean the data (as is done with positional devices), but rather alternate between the devices. Data from a Secondary status sounder will simply be monitored.

Graphics:
If the On radio button is selected, a labeled square representing the location of the sounder will be displayed in the Graphics and/or Bird's Eye windows.

Apply Tides:
If the Yes radio button is selected, WinFrog will apply tidal corrections to the observed water depths. Depths displayed in the Vehicle Text window and recorded in automatic event (i.e. .DAT, .SRC, and .RCV) and type 351 raw files will refer to the datum corrected depths. Note that type 411 raw data records will remain truly raw and will not reflect the tide correction.

The tide information can be supplied by a real time telemetry system or by predicted tide files. Either way, the tide "device" must also be attached to the same vehicle's device list. For more information, refer to documentation on Tide devices.

Frequency:
The ODOM DF3200 is a dual frequency sounder, capable of utilizing low (10kHz to 60 kHz) and high frequency (100kHz to 1 MHz) transmissions. This option controls which ODOM DF3200 data output (i.e. Low or High frequency) will be used by this vehicle. To utilize (i.e. record and display) both frequencies, the ODOM DF3200 MULTIBOTTOM data item must be added to a vehicle's device list twice. The two MultiBottom data items must then be edited to reflect the different frequency choices, with one configured for low frequency and the other high frequency. WinFrog reads the ODOM DF3200's data string to identify low and high frequency data outputs.
Note: The Medium frequency radio button has no application as this sounder employs only two frequencies.

Soundings for Profile:
This section of the Configure Sounder dialog box permits the collection of sounding data to an .MDB database file for display in WinFrog's Profile window. This collection is completely separate from automatic event or raw data collection.

> **Collect Data**
> Select this checkbox to enable the collection of data to an .MDB database file.

> **Interval Type**
> Select to utilize either Along Line or Actual Distance (i.e. between successive position updates) calculations for data collection intervals. Selecting Along Line requires that you also enable survey line tracking.

> **Distance Interval**
> Specify the distance interval at which the data will be collected.

> **Purge RAM**
> Sounding data is stored in the RAM memory of the computer. Any data collected which will not be required at later time can be deleted by selecting the Purge RAM checkbox, then clicking the OK button to exit the dialog box.

Database filename
Click the Browse button to define where and to what filename the .MDB file will be written. The file name and location is displayed in this field.

Abort Saving Data
Select this checkbox to abort saving data to the .MDB file. In other words, to save data to the .MDB file, ensure that this box is NOT selected.

Display Soundings Data in Profile Window
Select this checkbox to enable the display of this data in WinFrog's Profile Window.

Offsets
This section allows for entry of Offset values as measured from the vessel's Common Reference Point (CRP). Note that the Fore/Aft and Port/Stbd offsets are used for "cosmetic" visual purposes only; an echo sounder is not a positioning device, and hence its horizontal offsets have no application. If the echo sounder's position is to be recorded correctly, you must create and enable a vehicle Tracking Offset for that specific location. The offsets entered here can simply be used as a means of graphically confirming that the Tracking Offset values have been entered correctly. The Depth Offset is applied; the entered value will be added to the received sounder data. Depths displayed in the Vehicle Text window and recorded in automatic event (i.e. .DAT, .SRC, and .RCV) and type 351 raw files will refer to the corrected depths. Note that type 411 raw data records will remain truly raw and will not reflect the depth offset correction.

CONFIGURATION DETAILS:
The Odom DF3200 has four bi-directional RS-232 serial ports. Depth information is output after each sounding cycle with the standard string including values for both the high and low channels in dual frequency operation. From the comm1 port, the DF3200 sends ASCII characters at 9600 baud (8 data bits, 1 start bit, 1 stop bit, no parity.) to WinFrog at the completion of each sounding cycle. Interfacing to data acquisition systems is asynchronous and does not require handshaking.

RAW DATA LOGGING:
The raw depth records may take two forms, the 411 record and the second is a 911 record. Note that the 411 is repeated 15 times.

SOUNDER SPECIFICATIONS:
Measuring Ranges:	0 – 2000+ metres
Operating Frequency:	200 and 24 kHz or 210 and 33kHz.
Computer Interface:	RS232
Power Requirements:	9 - 18 VDC, 18 - 32 VDC, 110 / 220 VAC (50 / 60 Hz) <100 Watts average power
Sound Velocity Setting:	1370-1700 m/s
Pulse repetition Frequency:	1200 soundings/min max. (Automatically adjusting according to depth)