WinFrog Device Group:	**Sounder**
Device Name/Model:	**Bathy 2000**
Device Manufacturer:	**Ocean Data Equipment Corporation** 88 Royal Little Dr Providence, RI 02904 USA Tel: (401) 454-1810 Fax: (401) 454-1806 E-mail: sales@oceandata.com
Device Data String(s) Output to WinFrog:	For single frequency data: ;FDDDDD.DUN@MM/DD/YY,HH:MM:SS.SS F= Status (V=good, I=bad) D= Depth UN= Units (ME , FT or FA), MM/DD/YY,HH:MM:SS.SS= date and time For dual frequency data: ;FDDDDD.DUNEEE.E,FDDDDD.D,EEE.E,SHHHH@MM/DD/YY, HH:MM:SS.SS F= Low frequency Status (V=good, I=bad) D= Depth from low frequency UN= Units (ME,FT or FA) EEE.E= Echo strength value in dBs for **LOW FREQ** channel F= High frequency Status (V=good, I=bad) D= Depth from high frequency EEE.E= Echo strength value in dBs for **HIGH FREQ** channel S= Sign of heave data HHHH= Heave (cm) MM/DD/YY,HH:MM:SS.SS= date and time
WinFrog Data String(s) Output to Device:	Standard NMEA GGA data string
WinFrog .raw Data Record Type(s):	Depth: Type 411 and/or 911; status 0=bad, 1=good single or low frequency, 2=good high frequency Heave: Type 888

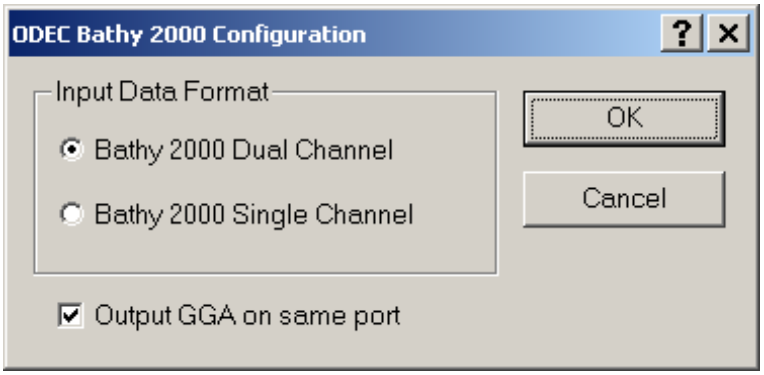
DEVICE DESCRIPTION:
Bathy 2000 devices outputting either single or dual channel data are supported in WinFrog. They can be utilized for both bathymetric and high-resolution sub-bottom data collection. The unit can be supplied with a transducer array or an optional tow fish. The B2000 can also accept real time pitch/roll/heave from an interfaced VRU, outputting attitude corrected depth data. The B2000 can also accept NMEA format GGA messages. (WinFrog outputs this to data to the B2000, but does not in turn receive this data back from the B2000 data string).

Refer to the Configuration Details section below for further specifications on the B2000.

Adding the Bathy2000 device in single frequency mode to a vehicle's Device list adds the BOTTOMDEPTH Data Item. In dual frequency mode, the MULTIBOTTOMDEPTH Data Item is added.

DEVICE CONFIGURATION INSTRUCTIONS:
Baud Rate: Configurable
Data Bits: Configurable
Stop Bits: Configurable
Parity: Configurable
Suggested Parameters: 9600-8-N-1

WINFROG I/O DEVICES > CONFIGURE DEVICE:
The Bathy 2000 is added to WinFrog from the SOUNDER device category. This device must be configured at the I/O Device window level. In the I/O Devices window, click the device name to select it, then right-click and select Configure Device. The Bathy 2000 Configuration dialog box appears, as seen below.

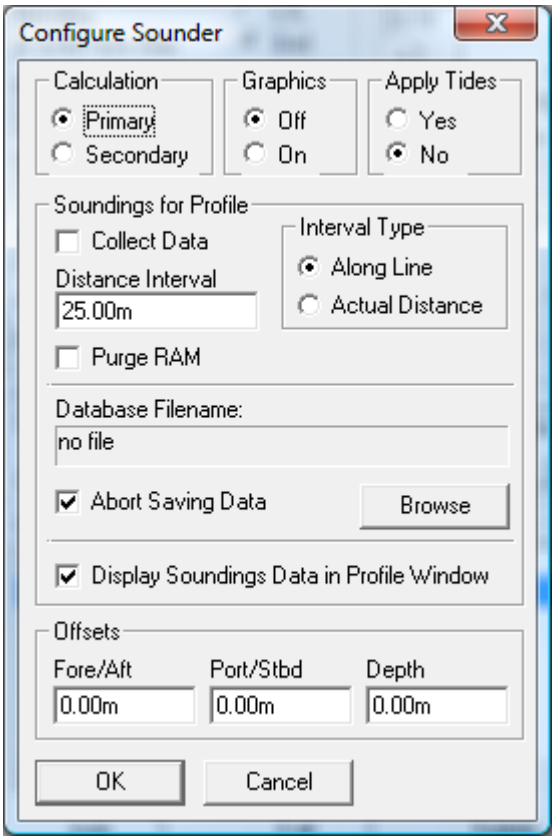


Input Data Format
Select whether the incoming data is single or dual channel.

Output GGA in same port
If you wish GGA data to be output to the unit on the same com port as the incoming data, check this box. The default is checked.

WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > DEVICE DATA ITEM >EDIT:
The Bathy 2000 sounder device supports one data item for single head (BOTTOMDEPTH) and two data items for the dual head (MULTI BOTTOMDEPTH and HEAVE). Once the data items have been added to the vehicle, they must be edited to suit the application.

Data item: SOUNDER,Bathy 2000,BOTTOMDEPTH



For single frequency data the **BOTTOMDEPTH** data item is provided for logging and adding the depth data to a vehicle. The configuration for this data type, once it is added to a vehicle, is as follows:

Calculation:
Set the type of calculation to Primary for real-time operations. Only Primary sounder device data will be used / recorded by WinFrog. Secondary sounder data is simply monitored.

Graphics:
Turn the Graphics **on** to plot a labeled square at the entered offset location in the Graphics and/or Bird's Eye window.

Apply Tides:
If the **on** radio button is selected, WinFrog will correct observed water depths by time correlating attached real-time or predicted tide file elevation data. Note that the tide data item must also be added to the vehicle's device list.

Refer to the WinFrog User's Guide for further information on displaying real-time tide reduced water depths.

Soundings for Profile:
This sub-window permits the collection of sounding data to a .mdb database file for display in the Profile Window.

Select the **Collect Data** button to begin data collection, at the **specified Distance Interval**. The interval can be either **Along Line** or at the **Actual Distance** (as calculated from last fix).

Upon clicking of the **OK** button, WinFrog will begin storing depth data in the computer's RAM memory. Click the **Purge RAM** button to clear the RAM of any prior collected data. This will be enacted once you click **OK** to exit this dialog box. Sounder data must be written to a .mdb database file before it can be displayed in the Profile Display. De-select the **Abort Saving Data** button, then select the **Browse** button to create a .mdb file in the desired location.

Check the **Display Soundings Data in Profile Window** option so that the data can be displayed in the Profile Window in real time.

Offsets:
Enter the offsets for the B2000 transducer using WinFrog standard Fore/Aft, Port/Starboard offsets from the CRP. Note that the Depth value is entered as a positive value downward. Ensure that the vertical offset entered must match the type of data coming from the sounder (i.e. if the data being output by the B2000 is as measured from below the transducer (aka, DBT data), enter the depth of the transducer below the water level).

Data item: SOUNDER,Bathy 2000,MULTI BOTTOMDEPTH
For dual frequency data the **MULTIBOTTOMDEPTH** data item is provided for adding the depth data to a vehicle. The value used is the raw value plus draft and tide if enabled. The heave value is applied to the depth and displayed in the I/O Decoded Data pane but not passed to the vehicle. The heave can be logged using the HEAVE data item, see below. An additional configuration field for this data type, once it is added to a vehicle, is as follows:

Frequency:
Select which channel is to be used for the depth value of the vehicle. Note that only Low or High are available for this device.

Data item: SOUNDER,Bathy 2000,HEAVE
There is no configuration for this data item. Attach this data item to the vehicle to log the heave when raw data recording is enabled.

Bathy 2000 CONFIGURATION DETAILS:

External Interfaces:

The Bathy 2000 has eight RS-232 Interface ports:

-Remote Digital Depth Indicator
-NMEA 0183 Navigation Input
-Heave Compensation
-Data Logger-External Event Mark/Ext. Annotation
- External Sound Velocity
-Remote Depth Input
-Status Message Output
-One Spare Port

Other external interfaces:
-Sonar Sync (TTL)
-External VGA Monitor

Specifications:

Measuring Ranges:	0.5-11000 metres (Frequency Dependant)
Depth Accuracy:	+/- 10cm to 100m; +/-0.3% to 6000m (manufacturers)
Operating Frequency:	3.5/12 – 12/200 kHz
Power Requirements:	110 /220VAC(220VAC with Linear Power Transmitter)
Sound Velocity Setting:	1400-1600 m/s, resolution 1 m/s
Pulse repetition Frequency:	1-20 pulses/sec
Sub-Bottom Resolution:	8cm.
Sub-Bottom Penetration:	100 to 200m (typical)

Acoustic Specifications:

Transmit frequency:	3KHz to 11KHz Chirp Bandwidth 6 Transducer array available for tow fish 2KW Transmit Power (optional 5-10KW)
Pulse width Manual or Automatic:	0.2ms to 25.0ms