

<b>WinFrog Device Group:</b>	<b>Compass</b>
<b>Device Name/Model:</b>	<b>DigiCOURSE Model 293A</b>
<b>Device Manufacturer:</b>	DigiCOURSE 3120 Rogerdale Rd. Suite 150 Houston , Texas, 77042 Tel: 713-784-4292 Fax: 713- 784- 6961 Email: info@i-o.com
<b>Device Data String(s) Output to WinFrog:</b>	DigiCOURSE Standard Communications Format (DSCF)
<b>WinFrog Data String(s) Output to Device:</b>	WinFrog sends the scan request command “d” to interrupt the DigiCOURSE operational software and request the required type 1 (compass), 2 (depth) and 3 (fin angle) information from the 293A.
<b>WinFrog Data Item(s) and their RAW record:</b>	Heading                    507 Depth                        508 Fin Angle                    509

**DEVICE DESCRIPTION:**

Multi-purpose device used for real-time seismic streamer modeling. The 293A can output compass heading, sensor depth and bird fin angles for multiple sensors. Each data string output can contain data for up to 32 compasses, 63 depth sensors and 64 “birds”. For our purposes, WinFrog interrogates the DigiCOURSE to trigger the output of data.

WinFrog is able to perform streamer modeling in real time and calculate the associated P190 format for direct logging to disk or output via a serial port. This document details the operation and configuration of WinFrog to perform this task using the **DigiCOURSE 293A COMPASS** device. Additional streamer configuration requirements are also detailed here.

Note: In order to create and log/output P190 data, the EVENT device must also be added to WinFrog. See the EVENT device section of this Appendix for more details on the EVENT device.

***DEVICE CONFIGURATION INSTRUCTIONS***

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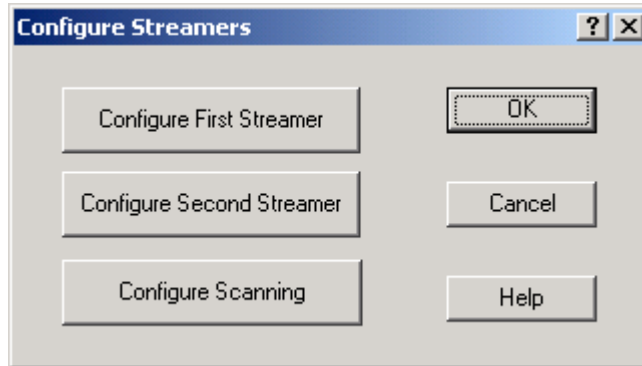
**WINFROG I/O DEVICES > EDIT I/O:**

Serial  
Configurable Parameters

Standard RS-232 serial connection using pins 2, 3, and 7(or 5) for ground.  
Run the digiSCAN program on the dedicated streamer sensor control computer.

### WINFROG I/O DEVICES > CONFIGURE DEVICE:

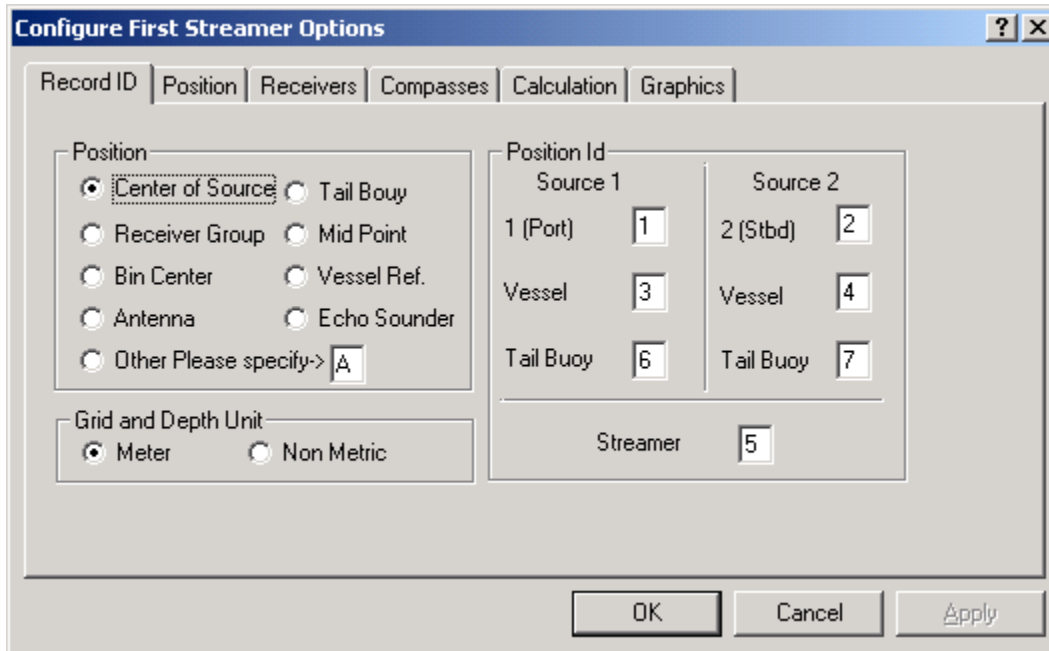
This device must be configured at the I/O Device window level. In the I/O Devices window, click the device name to select it, then right-click and select Configure Device. The Configure Streamers dialog box appears, as seen below.



### Streamer Configuration

WinFrog can model two streamers. Clicking either **Configure Streamer** button brings up the following folder display.

Selecting the associated tab accesses the various configurations. The following sections detail the various configuration folders.



## **Record ID**

### **Position**

Select the position that is to be logged/output as the P190 position.

### **Grid and Depth Unit**

Select the appropriate format. This affects the format used to log/output the associated information in the P190 format.

### **Position Id**

Assign the desired numerical ID for the given positions and streamer. These are the Id's that will be used for the P190 file/output.

The screenshot shows a dialog box titled "Configure First Streamer Options" with a "Position" tab selected. The dialog is divided into two main sections: "Streamer Positions" and "Source Positions".

- Streamer Positions:** Contains two text input fields. The "Head" field contains the text "NONE", and the "Tail" field also contains "NONE".
- Source Positions:** Contains two text input fields. The "Source 1 (Port)" field contains "NONE", and the "Source 2 (Stbd)" field also contains "NONE".

At the bottom of the dialog, there are three buttons: "OK", "Cancel", and "Apply".

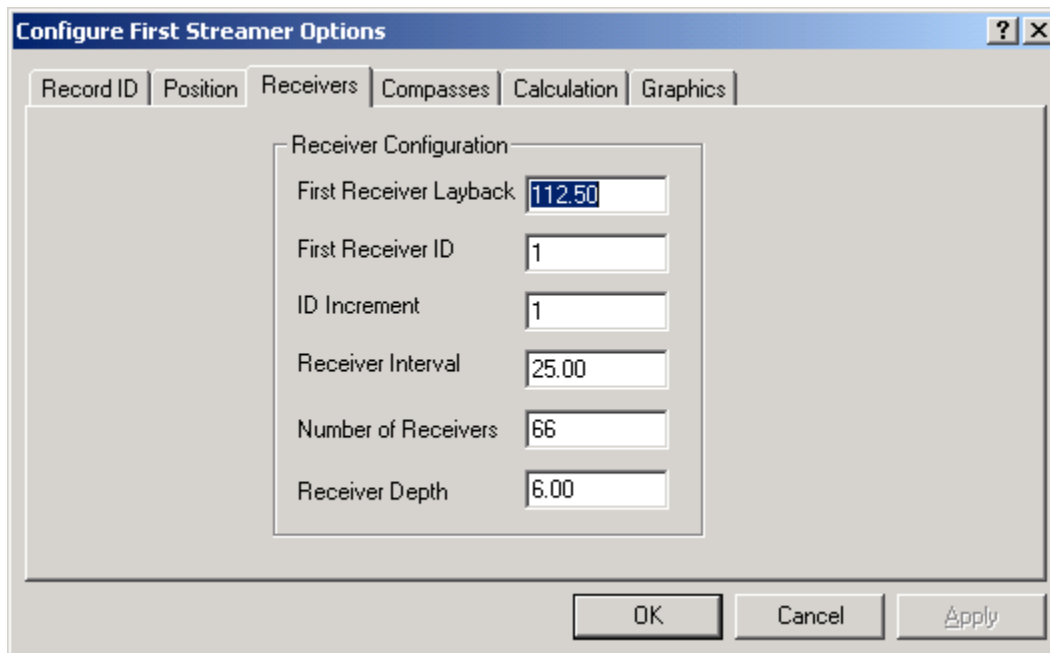
## **Position**

### **Streamer Positions**

Enter the actual vehicle names assigned to the **Head** and **Tail** of the streamer. These may be vehicles positioned by a GPS pod or simply using the **Pipe Track** option in the **Position Data Source** for that vehicle (See chapter 9 of the WinFrog User's Guide for more details on using the Pipe Track option.) Note that if the streamer modeling is to be an open traverse, no entry for the **Tail** is required.

### **Source Positions**

Enter the actual vehicle names assigned to the source(s). If only one source is used, enter it in the Source 1 position.



## **Receivers**

### **Receiver Configuration**

#### **First Receiver Layback**

Distance from the head of the streamer to the first hydrophone set.

#### **First Receiver ID**

ID number for the first receiver in the streamer (starting from the Head).

#### **ID Increment**

The value by which the receiver IDs are to increment.

#### **Receiver Interval**

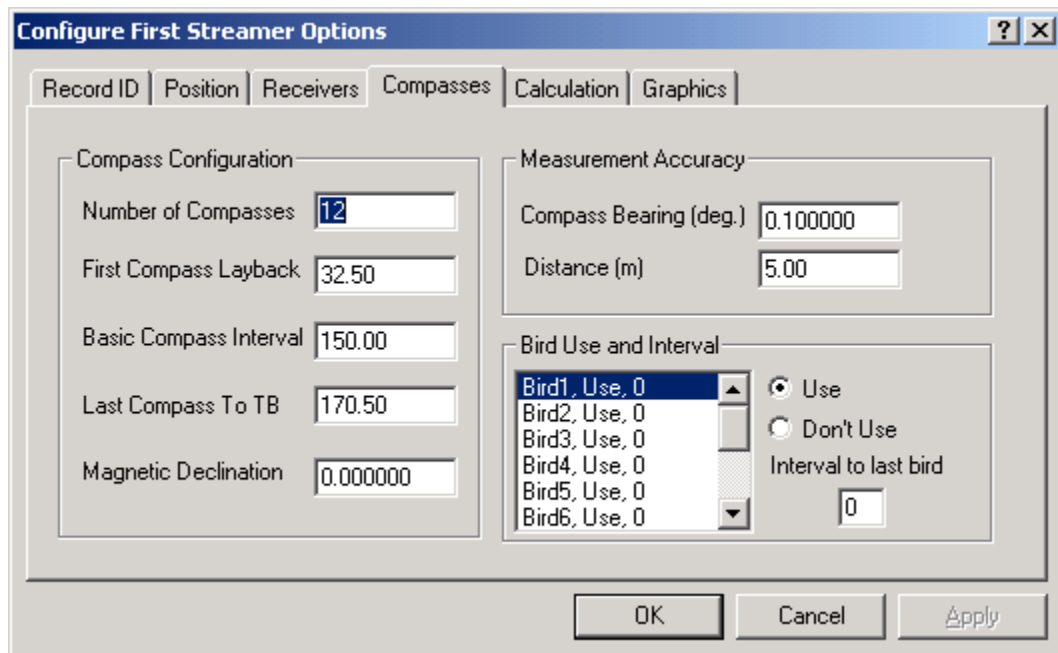
Distance between hydrophone sets.

#### **Number of Receivers**

The number of hydrophone sets in the streamer. Note that this value is used in conjunction with values entered for the streamer birds such that WinFrog will not calculate positions for hydrophone sets that based on the above entered interval and number of receivers would fall off the streamer.

#### **Receiver Depth**

The depth of the streamer. This depth is logged as the hydrophone depth in the P190 file and used to calculate a horizontal distance for the distance from the streamer Head to the first hydrophone set.



## Compasses

### Compass Configuration

#### Number of Compasses

The total number of birds on the streamer, including those that do not have compasses. Those that do not have compasses can usually be set to output a bad status flag for the compass data thus WinFrog will ignore them. If this is not possible, WinFrog allows for compasses to be set to **Don't Use**, in the Bird Use and Interval section as described below. WinFrog interpolates/extrapolates between those compasses that are set to Use and whose status is good to determine compass values for the remaining compasses.

#### First Compass Layback

Distance from the streamer **Head** to the first compass.

#### Basic Compass Interval

Distance between birds, including those without compasses. WinFrog assumes that the birds are placed on the streamer at equal intervals. If this is not the case, you must determine an interval value that best represents the true situation.

#### Last Compass to TB

Distance from the last bird to the streamer's Tail.

#### Magnetic Declination

The local magnetic declination. This value is **added** to the compass readings to determine the geographic (True) bearings.

## Measurement Accuracy

### Compass Bearing (deg)

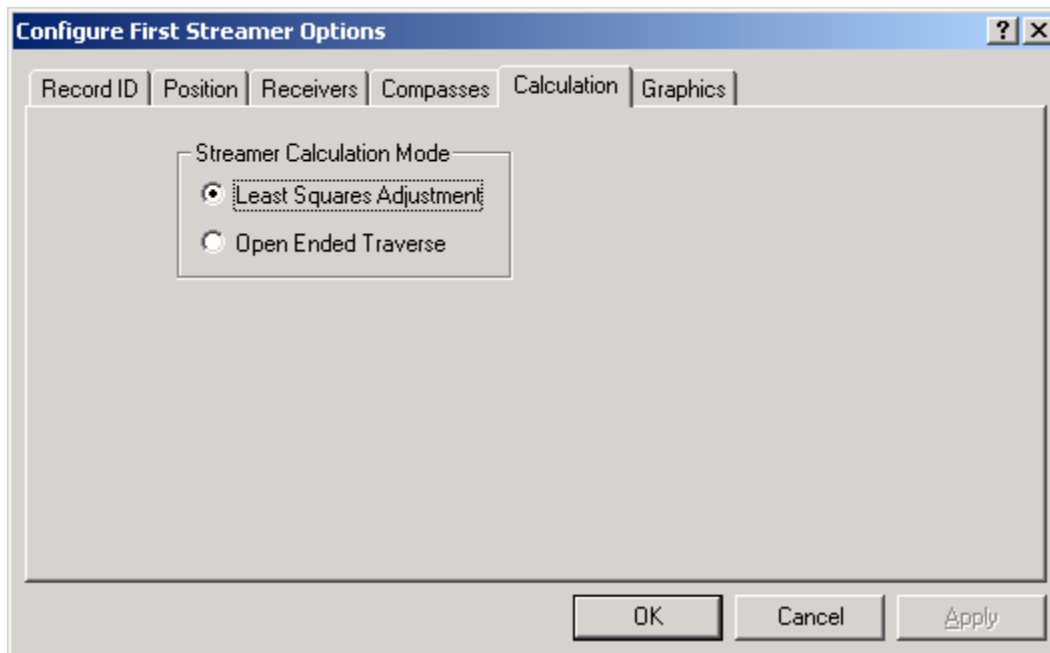
The standard deviation of the bird's compass readings. This is used for the rigorous least squares adjustment solution for the streamer modeling. If the open ended traverse option is used, this value is not used.

### Distance (m)

The standard deviation of the bird interval measurement. This is used for the rigorous least squares adjustment solution for the streamer modeling. If the open ended traverse option is used, this value is not used.

## Bird Use

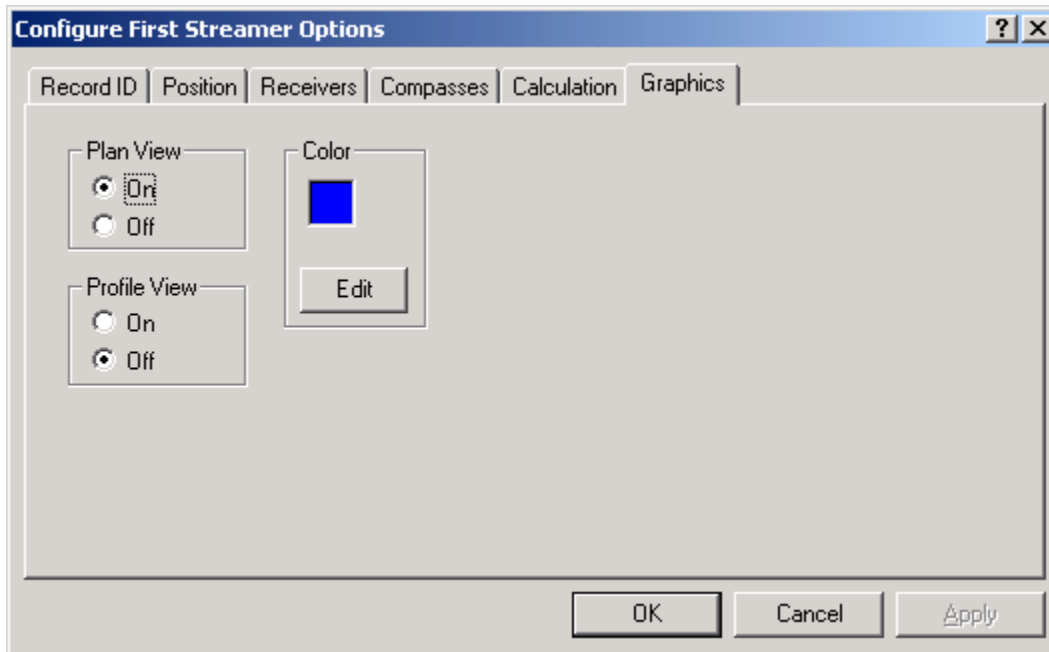
The list box shows all the birds that are said to be on the streamer with an **ID** that starts at 1 for the first bird from the streamer head. Included in the list is the current operator setting for the bird's compass information, **Use** or **Don't Use**. The radio buttons **Use** and **Don't Use** are set according to the bird highlighted in the list. You can change the setting simply by selecting the desired bird and toggling the **Use** or **Don't Use** radio buttons. If a bird is set to **Don't Use**, the status flag returned by the bird system is ignored and a compass value is interpolated for that bird. If the bird is set to **Use**, the status of the bird is checked and if good, the compass value given for that bird is used. If the status of a bird set to **Use** is *bad*, a compass value for that bird is interpolated.



## Calculation

### Streamer Calculation Mode

You may select a rigorous **least squares solution** or an **open ended** traverse solution to be used for the streamer modeling. If the **least squares** solution is selected, there must be positioned vehicles for the Head and Tail of the streamer. If the **open ended** traverse option is selected, only a positioned vehicle for the streamer Head is required.



## Graphics

### Plan View

The drawing of the streamer in the graphics window can be turned off and on.

### Profile View

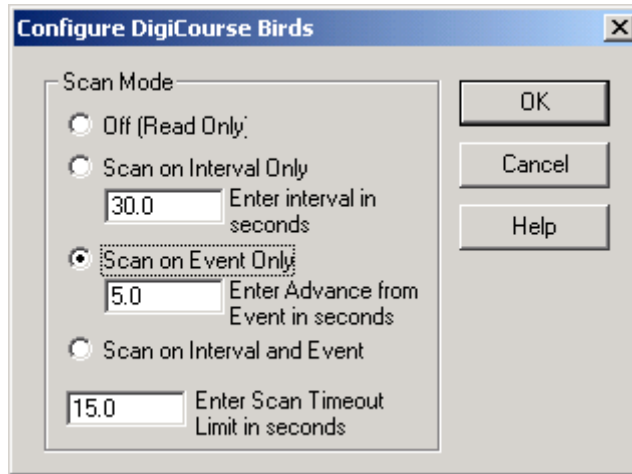
This is for future development, the drawing of the streamer in the profile window.

### Color

You can select the color in which the streamer is drawn.

## Bird Scanning Configuration

The mode of reading or scanning the bird system can be configured. Clicking the **Configure Scanning** button from the initial **Configure Streamers** dialog box opens the following dialog box.



### Scan Mode

#### Off

WinFrog does not interrogate the bird system for data. WinFrog will passively read the incoming data.

#### Scan on Interval Only

WinFrog interrogates the bird system at a set time interval, entered here in seconds.

#### Scan on Event Only

WinFrog interrogates the bird system for data at a set time in advance of an event, this advance is entered here in seconds.

#### Scan on Interval and Event

WinFrog will scan both at the set interval and at the set advance of the event.

#### Scan on Interval and Timeout Limit

WinFrog will wait for an answer for the timeout period, entered in seconds, before initiating another interrogation.

It is important to note that in the case of the DigiCourse 293A surface unit, when the system is interrogated for data, it sends the current data it has for the birds and initiates a new scan of the birds. The results of this new scan are output when the 293A unit is interrogated again. Thus, the data received as a result of an interrogation is not new and current.



**WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > DEVICE DATA ITEM > EDIT:**

Adding the DigiCOURSE device creates the BEARINGS data item.

**Data item: COMPASS, DigiCOURSE, BEARINGS**

There are no edit or configuration options available from this level. All configuration for this device is done at the I/O level as described above.

**TELGRAM SPECIFICATION:**

DigiCOURSE Standard Communications Format (DSCF)