

<b>WinFrog Device Group:</b>	<b>LBL ACOUSTIC</b>
<b>Device Name/Model:</b>	<b>ROVNAV-MK3</b>
<b>Device Manufacturer:</b>	Sonardyne International Limited Blackbushe Business Park Yateley, Hampshire GU46 6GD United Kingdom
<b>Device Data String(s) Output to WinFrog:</b>	RovNav command responses (Binary coded. See OMM7648 manual) Responses to operator commands are converted to their equivalent PAN response.
<b>WinFrog Data String(s) Output to Device:</b>	Pan commands (WinFrog converts operator entered PAN commands to ROVNAV Mk3 commands. Some commands not supported.) See manual OM7145-V7
<b>WinFrog .raw Data Record Type(s):</b>	Transceiver (LBL TRANCEIVER): Type 420 Transponder (ELEVATION); Type 372

**DEVICE DESCRIPTION:**

Long base line acoustic equipment. Used to position underwater vehicles or structures. The ROVNAV is essentially a PAN inside a pressure housing that can be placed on an ROV. It has one or two transducers on a short cable and communication is RS422 on a twisted pair. It uses fixed transponders placed upon the bottom. See also chapter 5, "WORKING TRANSPONDERS (.XPT) FILE", chapter 17 "LBL ACOUSTICS" and chapter 20 "ACOUSTIC CALIBRATIONS"

When the ROVNAV device is initially added, WinFrog will attempt to initialize it. "Uninitialized" will be displayed in the "Decoded Data" portion of the I/O devices window until initialization is complete.

There are two data items: LBL TRANCEIVER and ELEVATION.

**DEVICE CONFIGURATION INSTRUCTIONS:**

Baud Rate: 9600  
 Stop Bits: 2  
 Parity: None  
 Data bits: 8

These are the factory settings that can only be changed by opening the ROVNAV's housing and changing the appropriate links. See ROVNAV manual. See the ROVNAV manual for power and data connections.

## WINFROG I/O DEVICES > CONFIG OPTIONS:

This dialog provides access to a terminal for communications with the ROVNAV as well as options to set some ROVNAV parameters.

The first group, LB Window/Gate, allows you to set the long base line window and gate in the ROVNAV. See Pan manual for details on the LW and RG commands. The second group, Telemetry, allows you to set the telemetry wait window in the ROVNAV. See Pan manual for details on the TW command. The “retries” value indicates the maximum number of times WinFrog will attempt to obtain telemetry from a transponder. This applies to both baseline measurements and manually entered commands described below. After the initial command attempt, if “No Reply” or “?” is received, WinFrog will resend the same command up to the amount in this field or until it gets a reply to this command.

The screenshot shows the 'ROVNAV-MK3 Configuration' dialog box. It is divided into several sections:

- Configuration:**
  - LBL Window/Gate:** Window is set to 4.000 seconds, Gate is 0 milliseconds.
  - Telemetry:** Wait is 12 seconds, Retries is 0.
  - Select Frequency:** A dropdown menu is set to 'LF'.
  - Radio Buttons:** 'Slow', 'Med' (selected), and 'Fast' are available.
- Communications Control:** Delay in milliseconds between WinFrog Rx Data from PAN or ROVNAV and WinFrog Tx next Cmd. is 125. There is a checkbox for 'Implement multiple LBL Device synchronization' which is unchecked.
- Dual Band COMPATTS:** A checkbox for 'Correct travel time by 1.2 ms' is unchecked. Below it, text reads: 'Check this box when a PAN or ROVNAV of one freq. is obtaining EHF ranges from dual band COMPATTS on the other freq..'
- Mini ROVNAV:** Enter the full scale range of the Depth Sensor is 100.000.
- Direct Communication:** A 'Terminal' button is present.

At the bottom of the dialog are 'Done' and 'Apply' buttons.

The Slow, Medium and Fast radio buttons set the telemetry baud rate through the water. See Pan manual for details on the BN and BF and BS commands.

The Pan firmware version and frequency of the Pan is displayed if it has been received from the Pan. This is the first command sent to the Pan when this device is selected for use.

When clicked the Apply button immediately accepts the settings displayed and WinFrog will begin to use them.

The dropdown list box allows one to select the frequency of the LBL system in use. This must be selected before use. The frequency determines detection time and coding of

travel time within the message returned from the ROVNAV. Incorrect selection will result in incorrect travel times.

The terminal button provides access a terminal window where you may enter PAN commands to communicate with the ROVNAV or COMPATTS. When you hit the <Enter> key the command is converted to the equivalent ROVNAV command then sent to the ROVNAV. The display turns grey and when the reply is received from the ROVNAV it is converted to the equivalent PAN response and displayed. The actual ROVNAV command is included at the beginning of the response.

This is how the terminal window would look if one wanted to the enable COMPATT 602.  
Operator EN602  
Response C6,02,1,12,18,1 OK E:0

A dual command (change power for telemetry pulses on 602) would look like this  
CPT1,602  
C6,02,46,12,18,1 PENDING E:0  
C6,02,53,12,48,1 C: PWR=L2 S1 T1 J2 U1 G2 E:0

To turn ROVNAV jitter on or off use PJ1 or PJ0 respectively.

PAN commands not supported.

CY -Cycle command  
AN -Analogue commands  
SR -Steer replies  
ST -PAN status values  
S1 -PAN status word 1

The Communications Control value is the time difference between receipt of a telegram from the ROVNAV and the time that WinFrog will issue a new command. A delay is required to allow the reverberation, caused from the last acoustic energy to reach the ROVNAV, to attenuate around the transducer.

## **WINFROG VEHICLE TEXT WINDOW > CONFIGURE VEHICLE DEVICES > DEVICE > EDIT OPTIONS:**

**Data item: LBL,ROVNAV,LBL TRANCEIVER**

See chapter 17 for details on setting these parameters. They are the same across all LBL TRANCEIVERS except for the **Transmit Code** and ROVNAV depth interrogation interval. The “transmit codes” for a Sonardyne ROVNAV are provided in a dropdown list. They are:

- None - Do interrogate using the transceiver. Also halts any current interrogation.
- LBL255 - Interrogate on CIF and use all 8 receiver channels.

The depth interrogation interval is used only if “Use Depth for CRP from another source” is selected and the depth is to be determined by the ROVNAV’s own depth sensor. Then enter a value for the interrogation interval and the depth will be interrogated at this interval with LBL255 in between. The ROVNAV ELEVATION data item must also be attached to this vehicle.

If an external depth sensor is to be used, select “Use Depth for CRP from another source” but enter 0 for the ROVNAV interrogation interval and attach the ELEVATION data item of the device to be used to supply the elevation to the vehicle. In this case do not attach the ROVNAV’s ELEVATION data item to this vehicle.

The accuracy described in chapter 17 depends upon frequency. The published accuracies for the different frequencies are:

Frequency band	Standard Deviation
LF	0.5m
MF	0.15m
HF	0.04m
EHF	0.02m

These should be considered nominal values as they do not take into account sound velocity errors and ray path bending.

**Data item: LBL,ROVNAV,ELEVATION**

To use the ROVNAV’s internal strain gauge (diquartz pressure sensor not supported at this time) to determine depth, attach this data item to the vehicle. Edit the data item and set the mode to Primary and enter any offsets. The depth interrogation interval must be entered by editing the ROVNAV’s other data item. See above.