WinFrog Device Group:	**USBL**
Device Name/Model:	**MDL Lasertrak**
Device Manufacturer:	**Measurement Devices Ltd. (MDL)** Silverburn Crescent Bridge of Don Industrial Estate Aberdeen AB23 8EW Scotland, UK Tel:+44 (0)1224 246700 Fax:+44 (0)1224 824987 sales@mdl.co.uk
Device Data String(s) Output to WinFrog:	See end of document
WinFrog Data String(s) Output to Device:	Nil
WinFrog Data Item(s) and their RAW record:	BEACON 309

DEVICE DESCRIPTION:

The MDL Lasertrak is a laser system used primarily for repetitive positioning and tracking of marine vessels, seismic gun arrays, and structures. The system consists of a laser-scanning unit with a Universal Control Unit (USU). It will track a prism or other reflective surface and output a telegram. See the MDL Lasertrak manual for details on the instrument.

Although this instrument is not a USBL, it has a similar configuration where the instrument itself is equivalent to the USBL Hydrophone and the beacon is equivalent to the prism, or other reflective target.

DEVICE CONFIGURATION INSTRUCTIONS

WINFROG I/O DEVICES > EDIT I/O:

Baud Rate: 9600
Data Bits: 8
Stop Bits: 1
Parity: N

RS-232C data communication

WINFROG I/O DEVICES > CONFIGURE DEVICE:

There is no device configuration required for this instrument.

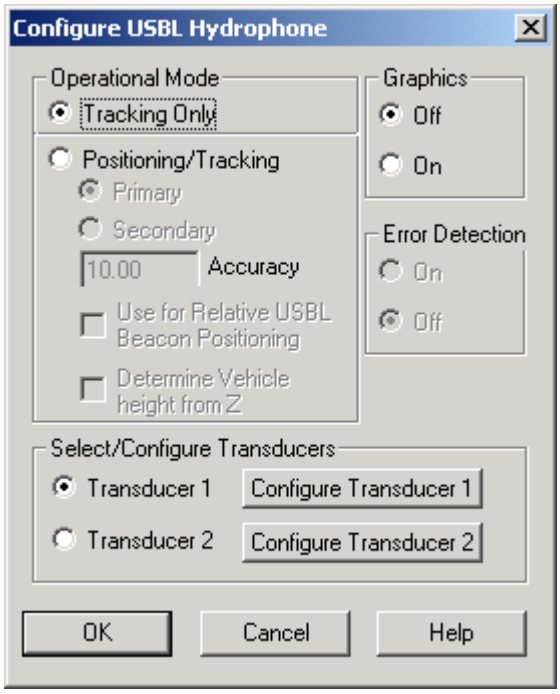
WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > DEVICE DATA ITEM > EDIT:

Adding the MDL LASERTRAK device to WinFrog creates two data items: the USBL, MDL LASERTRAK, USBL HYDROPHONE and the USBL, MDL LASERTRAK, BEACON.

The Hydrophone data item must be added to the vehicle on which the laser is situated (i.e., the main ship). The Beacon data item must be added to the vehicle to which the beacon has been physically attached (i.e., the float vehicle).

Data item: USBL, MDL LASERTRAK, USBL HYDROPHONE

Once the Hydrophone data item has been added to the appropriate vehicle it must be edited to suit the application. In the vehicle's devices list, highlight the USBL, MDL LASERTRAK, USBL HYDROPHONE then click the Edit button. The Configure USBL Hydrophone dialog box appears as seen below.

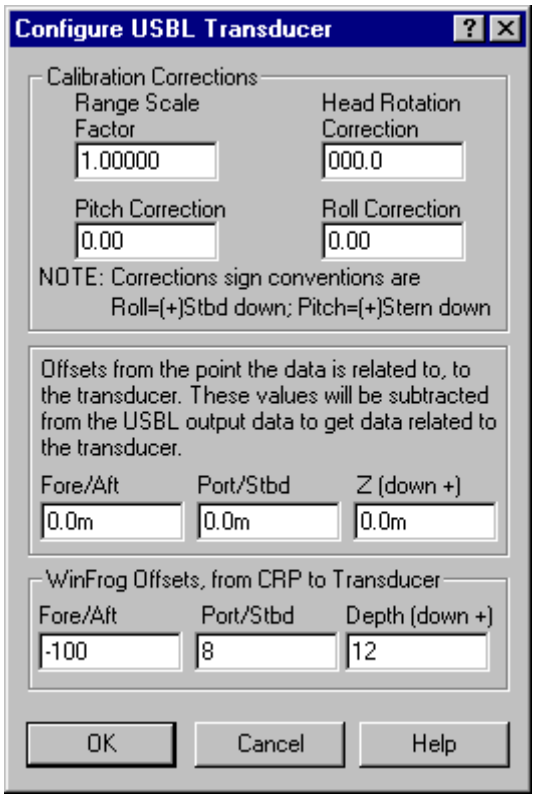


Operational Mode:
Select **Tracking Only**.

Graphics:
Selecting the On radio button will display the device name and a square at the location of the total station, within the Graphics and Bird's Eye windows.

Error Detection:
Not applicable to this operation.

Select/Configure Transducers:
The Configure USBL Transducer dialog box appears as seen below.

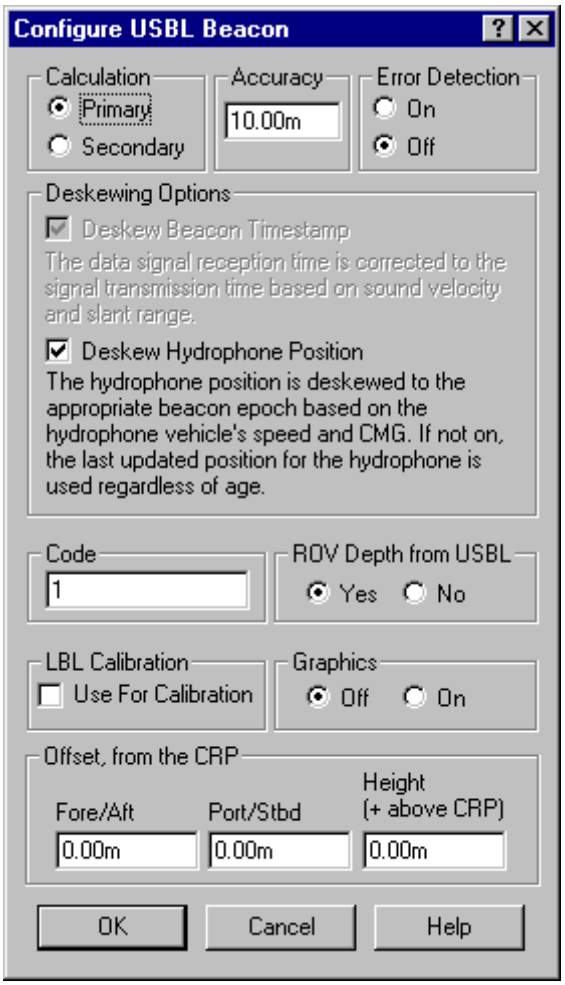


Calibration Corrections:
These values do not apply for MDL LASERTRAK operation. Set values as displayed above.

Offsets:
The top set of offsets do not apply to the MDL LASERTRAK. However, they must be set to 0.
The WinFrog Offsets, from CRP to Transducer
These are the Lasertrak's offsets on the vehicle; from the CRP to the Lasertrak.

Data item: USBL, MDL LASERTRAK, BEACON

As mentioned above, to position the vehicle the USBL beacon data item must be added to the appropriate vehicle. Once added to the device list, it must be edited to suit the application. Editing the USBL, MDL LASERTRAK, BEACON device brings up the Configure USBL Beacon dialog box, as seen below.



Calculation
Set Calculation to **Primary** if the beacon is to be used for positioning the vehicle to which it is attached. Multiple beacons can be added to the same vehicle's device list, each configured as Primary. WinFrog will calculate a weighted mean position using the Accuracy value entered.

Accuracy
This value is used by WinFrog to weight the use of different positioning devices in solving a single vehicle's position. The lower the accuracy value entered, the more accurate it is deemed to be, and hence the more weight that will be applied to it in comparison to the other devices.

Error Detection:
The MDL Lasertrak does not output a quality code thus this feature has no effect.

Code:
Set the numeric code that the instrument has been assigned for this target; 0 through 9. The actual character in the telegram is a symbol, namely:

Code	Symbol
0	:
1	;
2	<
3	=
4	>
5	?
6	@
7	A
8	B
9	C

ROV Depth from USBL:
Set this to Yes to allow the Lasertrak to determine the elevation.

LBL Calibration:
Leave unchecked.

Graphics:
By setting the Graphics to On, a square and label will be displayed for the target location.

Offsets:
The Offsets are applied from CRP (of the structure/vessel) to the prism or target location. These values are set similar to values that would be applied to any device offset within WinFrog.

TELEGRAM:

There is some discrepancy between the manual and what has been recorded from the device.
The manual indicates 17 characters:
CRRRRRRAAAAAVVVV<CR><LF>
Where:

- C is the station code
- RRRRRR is the range times 100
- AAAAA is the horizontal angle times 100
- VVVV is the vertical angel times 100

This is only 16 characters but the example puts a + sign between the A and V making 17 characters. However, some data has been recorded as such:
:000165408853+0002 which is 18 characters with the extra character in the integer part of the range. WinFrog will decode either of these formats, 17 characters or 18 characters; both must have the vertical angle sign.