

WinFrog Device Group:	Range/Range
Device Name/Model:	SimRangeRange
Device Manufacturer:	
Device Data String(s) Output to WinFrog:	NONE
WinFrog Data String(s) Output to Device:	NONE
WinFrog Data Item(s) and their RAW record:	RANGE/RANGE NONE

DEVICE DESCRIPTION:

This is a device designed to provide simulated data similar to real time Range/Range devices. This device is used for simulation and training purposes and as such some of the options may not typically be used. However, since this device is used for training purposes, information has been included for all of the options regardless of whether or not they are used in the simulation/training.

A real-time Range/Range device provides ranges from control stations to a user vessel. A typical system may display measured ranges, compute vessel position by trilateration and provide guidance information to the vessel’s helmsman.

WinFrog typically replaces the internal calculation routines of real-time Range/Range devices by combining the raw ranges received from the transceiver unit with internally configured control station coordinates to calculate the final position. This requires that the operator must create a Working Control Stations (.cls) file. See chapter 13 of the WinFrog User’s Guide for more details on the set-up and use of Range/Range devices.

DEVICE CONFIGURATION INSTRUCTIONS

WINFROG I/O DEVICES > EDIT I/O:

No I/O parameters - Simulated Device

WINFROG I/O DEVICES > CONFIGURE DEVICE:

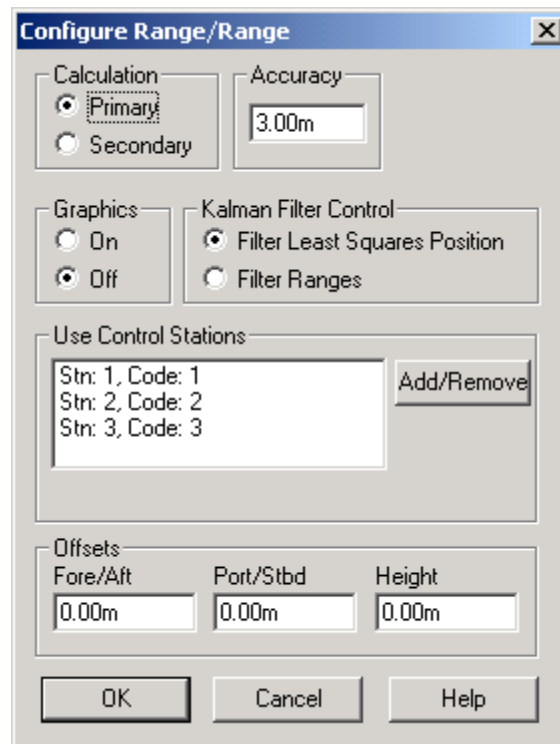
No configuration is required at the I/O Device window level.

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

Adding the SimRangeRange device creates the RANGE/RANGE data item. Once the data item has been added to the vehicle, it must be edited to suit the application.

Data item: RANGE/RANGE, SimRangeRange, RANGE/RANGE

Highlight the RANGE/RANGE, SimRangeRange, RANGE/RANGE data item in the vehicle's device list and click the Edit button to open the Configure Range/Range dialog box as seen below.



Calculation:

Set the calculation to Primary if the position calculated from the SimRange/Range device is to be the primary positioning data source. Set to Secondary if the position calculated from this device is to be monitored.

Note that in case of Primary device failure, WinFrog will not automatically revert to Secondary devices. You must manually change a device from Secondary to Primary.

Accuracy:

You can enter a realistic accuracy for the device. For a typical real-time device (e.g., Trisponder) the default of 3 meters is recommended for properly calibrated equipment.

Graphics:

Setting this option to On will plot a square in the Graphics and Bird's Eye windows at the calculated location of the onboard transponder.

Kalman Filter Control:

The Kalman filter control option allows you to select how Kalman filtering will be applied to the data.

The **Filter Least Squares Position** option calculates a position using a least squares adjustment of the raw ranges. This calculated position is then put into the Kalman filter. The **Filter Ranges** option enters the raw ranges into the Kalman filter before they are used to calculate a position. The Filter Ranges option is the recommended option for most applications.

Use Control Stations:

In order for WinFrog to be able to utilize a received range it must be able to match the code from the received range data string to the control station code setup in the working .cls file as mentioned above. Click the **Add/Remove** button to display the list of available control stations. You can then select/deselect the appropriate control stations by using the Add or Remove buttons.

Offsets:

Offsets are applied similar to other devices in WinFrog. They are measured from the CRP of the vessel to the onboard transponder. A sensor height relative to Mean Sea Level (MSL) must be entered in the Height field. This value is used in conjunction with the MSL Elevation values entered in the .cls files to reduce the ranges to the horizontal.