

WinFrog Device Group:	OUTPUT
Device Name/Model:	ROLAND DPX4600
Device Manufacturer:	Roland Digital Group Corporation 1-6-4 Shinmiyakoda, Hamamatsu-shi Shizuoka-ken, 431-2103 Japan Tel: 81-(53) 484-1201 Fax: 81-(53) 484-1216 E-mail: support@rolanddga.com
Device Data String(s) Output to WinFrog:	N/A
WinFrog Data String(s) Output to Device:	N/A
WinFrog .raw Data Record Type(s):	N/A

DEVICE DESCRIPTION:

The Roland DPX-4600 is a microprocessor-based Roland Pen Plotter that produces high quality; multi-color graphic plots on any size chart up to 1189 X 841 mm (ISO A0). The DPX-4600 offers exceptional line and character quality with addressable moves as small as 0.025 mm (0.001 inch). 98 different instructions are built-in to equip the plotter with such capabilities as point, labeling, character-sizing, and window plotting. The DPX-4600 is interfaced through the Parallel Interface Connection (in compliance with the specifications of Centronics) and Serial Interface Connection (in compliance with the specifications of RS-232C). With parallel and serial interface, the plotter can be connected to the computer or other controller using a standard interface cable. Short, easily understood commands and the Roland Graphic Language II (RD-GLII) enable you to create a plotting program with Basic or C/C++ languages.

RD-GLII is systematically organized in order to operate Roland DG corp.'s plotters efficiently. It consists of 80 commands, each of which are designed with great freedom to establish detailed settings to individual operations of the plotters.

DEVICE CONFIGURATION INSTRUCTIONS:

SETUP:

Configure the RS-232C cable following the Roland DPX-4600 Drafting Plotter Technical Guide – 3.2 Connect RS-232C Interface – Stand-alone Connection – Fig. 3-4.

Connect plotter to computer following the Roland DPX-4600 Drafting Plotter User's Manual – 2.1 Connecting Cable – 2.1.2 Serial Interface Connection – Fig. 2-2.

If using a Fugro Pelagos I/O Data Switch Box, connect the 25 pin plotter cable with I/O box as follows:

Pin 2 to TXD

Pin 3 to RXD

Pin 4 to RTS

Pin 5, 6, 8 and 20 to CTS

Pin 7 to GND

Use water based fibre tipped plotter pens with 4 color pens that include one each of black, red, blue and green, the suggested product is Roland Plotter Pens 4 Color Pens Package XD-4SPB with 0.3 mm Line Width.

Hold down the PEN CAP RELEASE button and insert pens into the groove of the pen stock as below:

Red pen attach to pen stock No.1, used to draw vessel track.

Black pen attach to pen stock No.2, used to draw border and geographic grid.

Green pen attach to pen stock No.3, used to draw survey lines.

Blue pen attach to pen stock No.4, used to draw projection grid and waypoints.

Switch on the plotter before launching WinFrog.

Prior to producing real time plots, a base map must be registered. See the section WINFROG UTILITIES BASE MAP WIZARD CONFIGURATION at the end of this document and the section Plotter Base Map Wizard in chapter 11 of the WinFrog User's Guide.

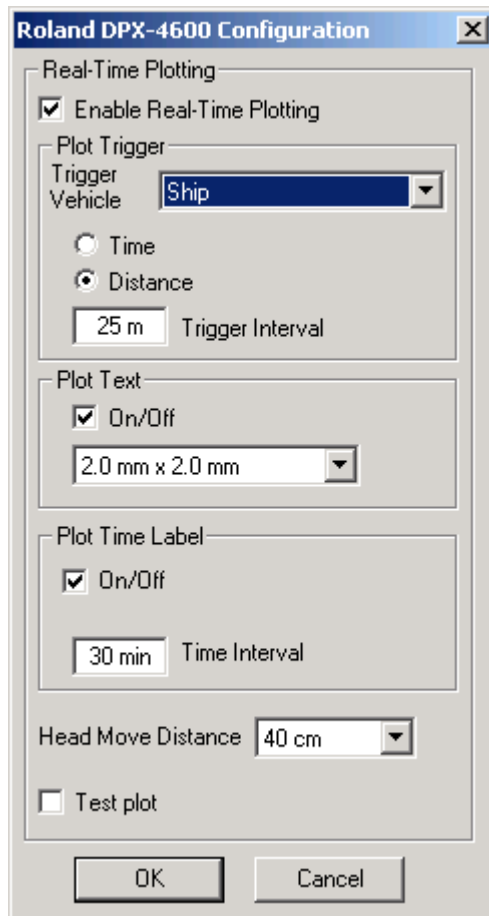
WINFROG I/O DEVICES > EDIT I/O:

Serial

Configurable Parameters

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 Roland DPX-4600 Configuration dialog box appears, as seen below.



Enable Real-Time Plotting

This checkbox can be used to switch the stream of data going to the plotter on or off. Leave it unchecked when creating or registering the base map.

Plot Trigger

There are two methods for triggering each plotted position – by time elapsed since the last plotted point, or by distance traveled. Selection is via the radio buttons and the increment can be entered in the Trigger Interval edit box with the unit of seconds or meters.

Trigger Vehicle

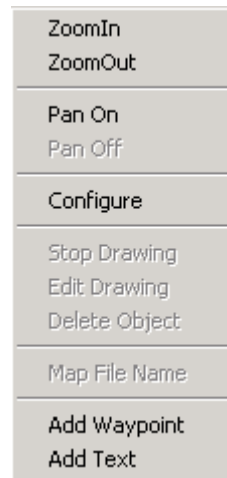
The distance trigger is for one vehicle only, but all vehicles that have the ROLAND PLOTTER data item attached will have their position plotted. All the vehicles that the ROLAND PLOTTER data item have been added to will appear in the drop down list box. Select the vehicle to generate the distance trigger.

Plot Text

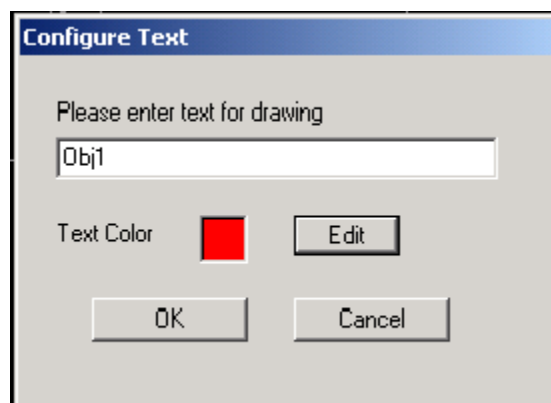
You are able to insert text onto the WinFrog screen and have it plotted on the paper chart in the same geographic location as the text occupies on the WinFrog screen.

There are two ways for inserting text on the Graphics window. The first way is using the Add Text menu item on the Graphics window popup (right-click) menu. The operation for inserting text on the Graphics window is as below:

1. Move the mouse cursor to the desired position on the Graphics window.
2. Click the left button of mouse to pick up the position data.
3. Click the right button of mouse to launch the popup menu, seen as below.



4. Select the Add Text menu item to configure the text.



5. Use the default text string or enter a new text string in the text edit box. Note: this text string is limited to 24 characters. Additional text can be added by repeating these steps to create a second line.
6. Use the default color or select a new color with the Edit button.
7. Click the OK button to submit or click the cancel button for cancellation.

The second way that text can be inserted on the Graphics window is to use the User Drawing function. Access the Configure Graphics dialog box, Background tab and select the User Draw checkbox to turn on the user drawing mode. Click the Text button on the User Drawing tool bar to insert and edit the text. Text added with this method is also limited to 24 characters per line. Add a second line for additional characters. Refer to the User Drawing Support section in Chapter 8: Operator

Display Windows in the WinFrog User's Guide for the details of text drawing and editing.

There are two controllers in this configuration group. The On/Off checkbox is for turning the plot text option on or off. A selection of predefined text sizes is available in the dropdown list. The plotter head will move away after plotting the vehicle position by the chosen distance.

Plot Time Label

The driver is able to plot the date/time next to the corresponding real time marker at a selectable interval in the format YY/MM/DD HH:MM.

There are two controllers in this configuration group. The On/Off checkbox is for turning the plot time label option on or off, and the increment can be entered in the Time Interval field with the unit of minutes.

Head Move Distance

When doing real time plotting, the plotter head needs to move away after plotting the vehicle position to permit hand annotation of the point as desired by the operator. A selection of predefined moving distances is available in this dropdown list. The plotter head will move away after plotting the vehicle position by the chosen distance.

Test Plot

This can be used for diagnostic purposes – simple shapes are drawn on the plotter and this can help detect communication problems between the computer and plotter.

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

Adding the Roland DPX4600 device creates the ROLAND PLOTTER data item.

Data item: OUTPUT, Roland DPX4600, ROLAND PLOTTER

Configure Vehicle-Devices

Position
N32 00.0284
W117 00.0728
Elevation (Ellipsoid)
0.00m
Heading (LBL calcs)
0 0 00.00T
☐ L/L
☐ Grid
Copy
Update

Kalman Filter
0.10
☐ Off ☐ Purge
☒ Dead Recon

Data Source
☐ Simulated ☒ Real-Time
☐ Network ☐ File
☐ Ctrl'd Remote ☐ Pipe Track

Velocity Filter
20
☐ Purge

Calculations
☐ Heading
Max Time Variance (s) 60s
☐ Streamer

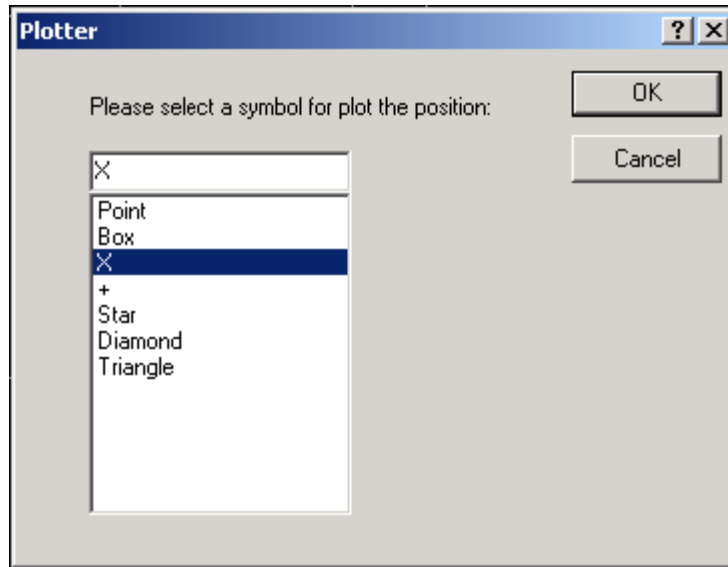
Range Gate
☒ Off 100.00m

Devices
GPS, SimGps, POSITION
GYRO, SimGyro, HEADING
OUTPUT, Roland DPX4600, ROLAND PLOTTER

Add Edit Delete

OK Cancel Help

Attach this data item to the vehicle for which the position is to be plot on the Roland Plotter DPX4600 paper chart. There is a dialog to edit this device as seen below.



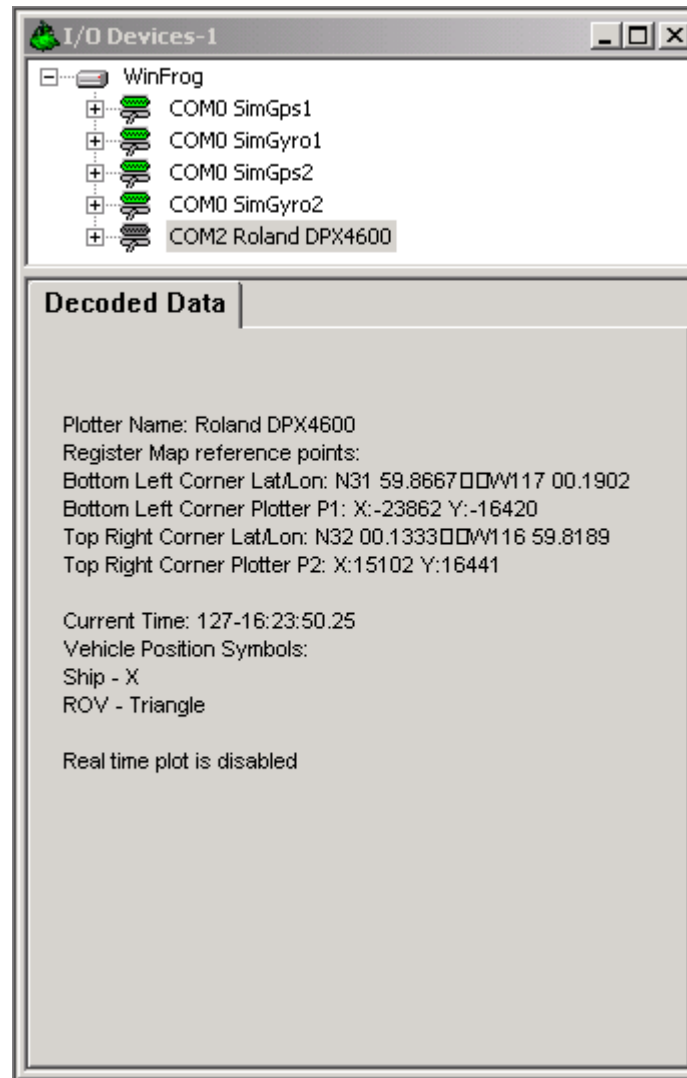
Vehicle Position Symbol

A selection of predefined symbols is available. The vehicle position will be marked by the chosen symbol.

DISPLAY:

The status of the plotter and the real time plot data will be displayed in the I/O Devices window.

The display, before enabling the real time plot, is as below.



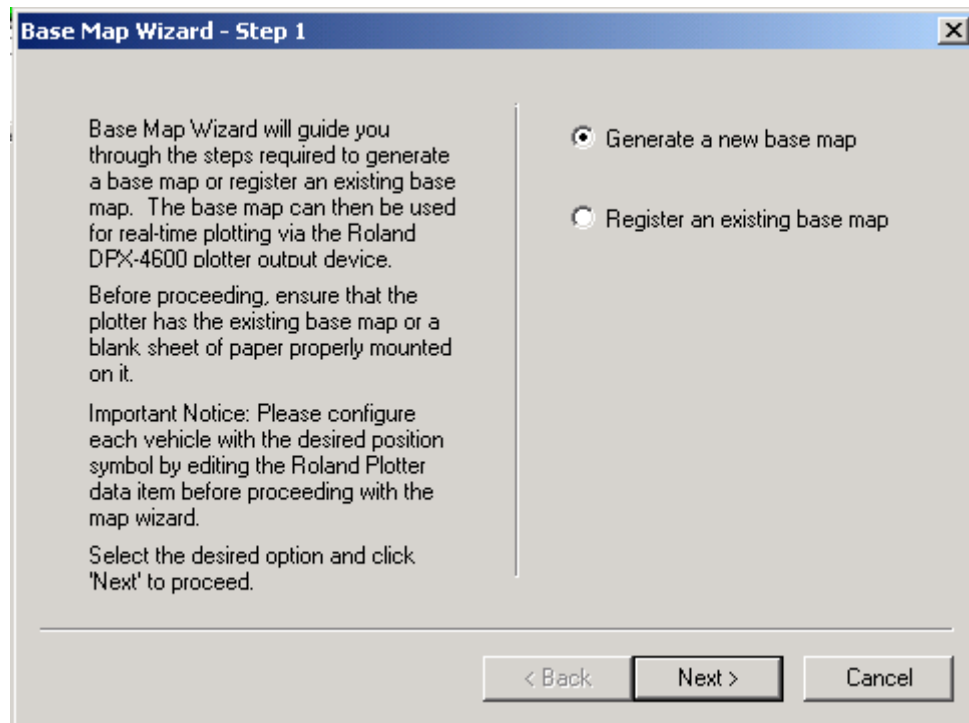
The position data for multiple vehicles at the real time plot will be displayed as below.



WINFROG UTILITIES BASE MAP WIZARD CONFIGURATION:

This configuration is for plotting the base map/chart, and for registering the plotted map/chart for the real time plotting of the vehicle position.

Under the Utilities menu, there is a Plotter Base Map Wizard item. Whether it is desired to register and plot on an existing map, or to plot on a new sheet, the setup is done through this wizard. When the wizard is launched, the following dialog will appear, and the appropriate option should be chosen. Note the advisory notice stating that the base map or blank sheet should already be properly mounted on the plotter, and to configure each vehicle with the desired position symbol for the Roland Plotter data item before proceeding with the map wizard.



Please refer to the Plotter Base Map Wizard section in Chapter 11: Utilities in the WinFrog User's Guide for details.