



HYPACK USB Event Box

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INTRODUCTION

The HYPACK USB Event Interface is designed to provide a means of providing a contact closure to mark graphic recorders or other devices requiring a simple isolated contact closure. The USB Event Interface connects to a standard USB port and is powered from the same USB interface. When connected to the survey computer the USB Event Interface will, when triggered, output a variable length contact closure.

The USB Event Interface is a small, lightweight unit which lends itself well to bathymetric, side scan or hazard type surveys. The contact closure may be adjusted from 10mSec to 3 Seconds by setting internal jumpers inside the interface.



- A Red / Green LED is included to indicate:
- Green - Connected and ready
- Red - Event Received

The LED will remain red for the duration of the dwell delay and return to green when ready for another event.

TECHNICAL

The USB signals are converted to TTL level serial data and then read by a RISC microprocessor. When the correct trigger sentence (EVENT<cr><lf>) is received the relay is energized for the period read from the dwell delay jumpers. After the event has been generated, a short delay is inserted before looking for the next event trigger sentence to prevent double-triggering. The data is sent at 9600 8N1.

OPERATION

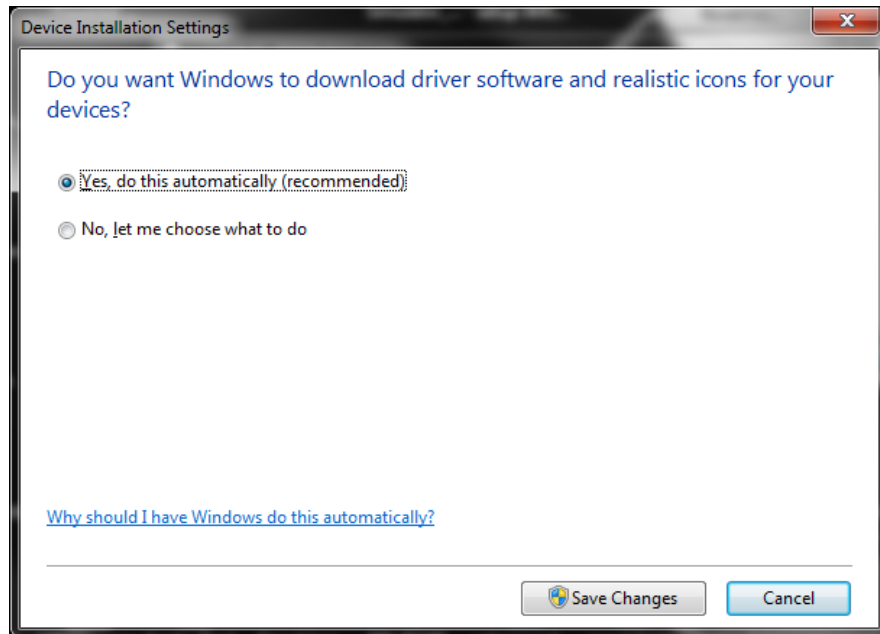
FIRST TIME CONNECTION

The USB version of the Event Interface replaces the standard RS232 interface. Power and data are supplied from the USB port of the host PC via the standard USB cable supplied.

CONNECTION ON WINDOWS® 7 MACHINES ON THE INTERNET

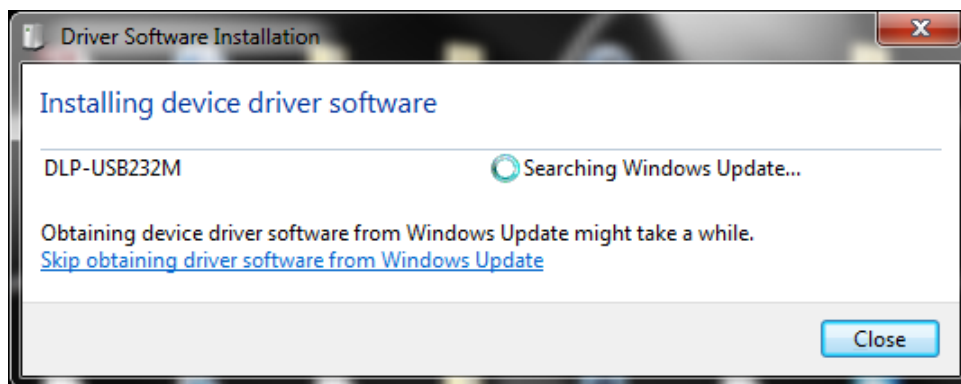
If you are using Windows® 7 AND connected to the Internet, simply plug the USB cable into a USB port on your PC and follow the instructions as the dialog boxes appear:

FIGURE 1. *Installation in Windows® 7*



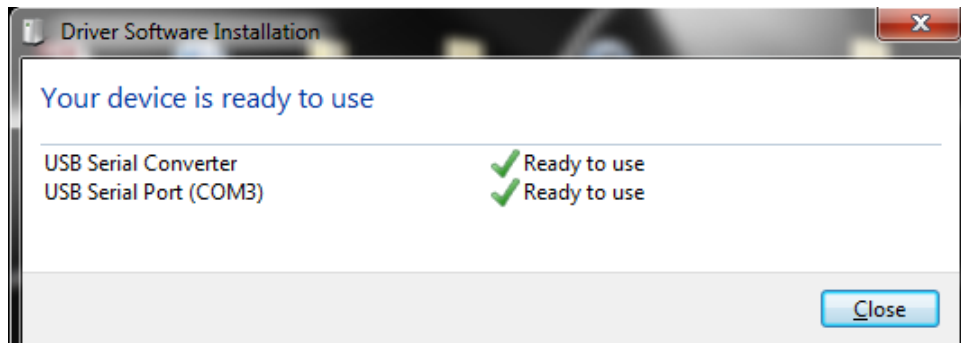
Be sure to highlight 'Yes, do this automatically (recommended)' and click SAVE CHANGES. Windows® will search for the proper drivers:

FIGURE 2. *Windows® 7 Automatically Installs the Drivers*



When the drivers are loaded, the dialog will display the COM port number READY TO USE as shown in Figure 3.

FIGURE 3. COM Port Displayed



INSTALLATION WITH NO INTERNET CONNECTION

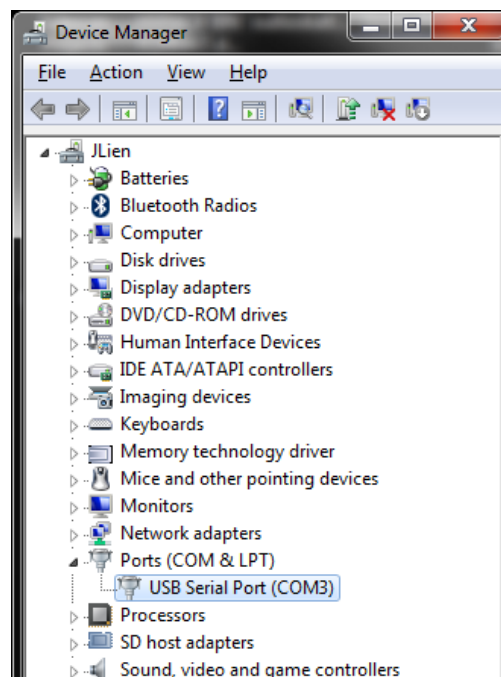
If you are not connected to the Internet, a virtual COM port driver is supplied on a CD which redirects data sent via a “virtual COM port” to the USB port. When the Event Interface is plugged in for the first time, a Windows® Wizard will appear, prompting you for drivers. Simply point the Wizard to the CD. You can also download the drivers here:

- 32 bit drivers – <ftp://support.hypack.com/Outgoing/USB%20EVENT%20BOX%20DRIVERS.zip>
- 64 bit drivers – <ftp://support.hypack.com/Outgoing/USB%2064%20bit.zip>

MANUAL INSTALLATION

If you are installing the drivers manually, note the COM port number in Windows® Device Manager as shown in Figure 4:

FIGURE 4. Checking the COM Port in the Device Manager

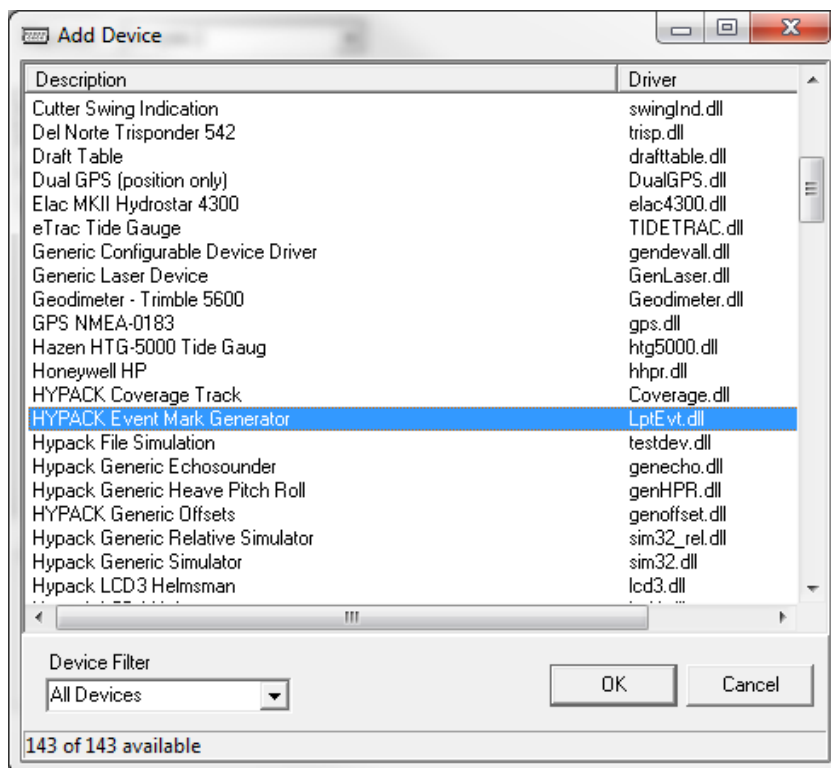


After the first installation you will not be prompted for the device drivers again.

HYPACK® INSTALLATION

1. **Go to PREPARATION – HYPACK HARDWARE.**
2. **Click [ADD DEVICE] and select the HYPACK Event Mark Generator driver (lptevt.dll).**

FIGURE 5. Loading the LPTEvent Driver



3. **Enter the Connection Settings:**

FIGURE 6. Connection Settings

- **Choose SERIAL PORT.**
- **Choose the proper port number.**
- **Baud rate: 9600**
- **Parity: NONE**
- **Data bits: 8,**
- **Stop bits: 1,**
- **Flow control: NONE**

4. **Click on SETUP and choose your preferred options. Typically GENERATE MARKS ON EVENTS is checked.**

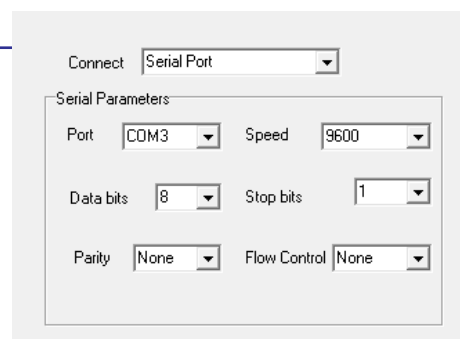
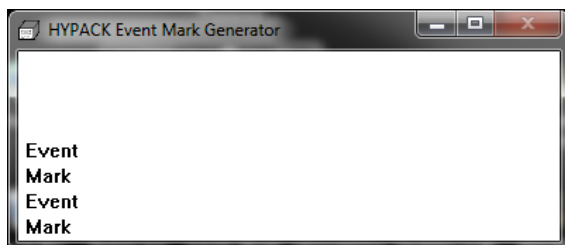
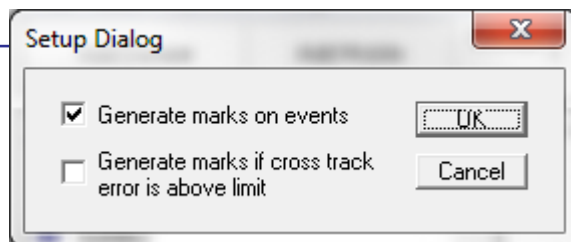


FIGURE 7. *LPTEvent Driver Setup Dialog*

5. Click [OK] and close HYPACK® HARDWARE.

As an event is marked in HYPACK® SURVEY the event box will be triggered.

FIGURE 8. *LPTEvent Device Window in HYPACK® SURVEY*



SETTING THE DWELL DELAY

FIGURE 9. *Location of the Dwell Delay Jumpers on the Circuit Board*

The dwell delay is the time that the relay contacts remain closed when an event has been triggered. The dwell delay may need to be changed to suit the type of instrument that is attached to it.

For a fast-updating echosounder in shallow water a short contact closure will be sufficient to make the echosounder. On the other hand, a seismic or sub-bottom profiler running in deep water will require a much longer contact closure.

The length of the delay is generated by a digital timer inside the microprocessor and set by the position of 4 jumpers located inside the Event Interface. The 4 jumpers are configured as a BCD counter with each count corresponding to a delay value of 200msec. or 0.2 Seconds.

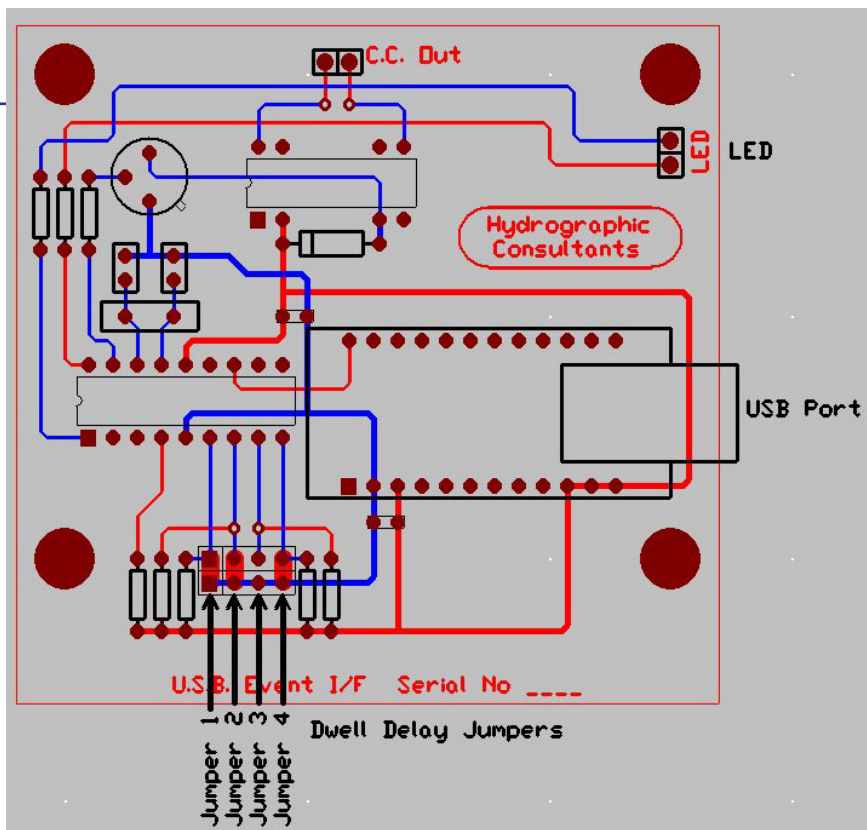


TABLE 1. *Table of Jumper Settings to Dwell Delay*

Delay	J1	J2	J3	J4
20mS	X	X	X	X
200mS	-	X	X	X
400mS (Default setting)	X	-	X	X
600mS	-	-	X	X
800mS	X	X	-	X
1.0 Sec	-	X	-	X
1.2 Sec	X	-	-	X
1.4 Sec	-	-	-	X
1.6 Sec	X	X	X	-
1.8 Sec	-	X	X	-
2.0 Sec	X	-	X	-
2.2 Sec	-	-	X	-
2.4 Sec	X	X	-	-
2.6 Sec	-	X	-	-
2.8 Sec	X	-	-	-
3.0 Sec	-	-	-	-
X	indicates link in place			
-	indicates link removed			

There are no other operator controls or settings.

The contact closure outputs are isolated relay contacts with no connection to the USB port or host computer.

TROUBLESHOOTING

In the case of problems, it is useful to inspect the Windows® Device Manager settings. Often the USB / COM Port number can change in Windows® if an additional USB device is added. If the USB Event Interface will not trigger, go back and check the settings in Device Manager.

Note: The virtual COM port drivers used with the USB Event Interface are identical to those used with the USB Helmsman Display and are interchangeable.

Serial Sender is a simple, troubleshooting program that enables you to check the operation of the USB Event Interface without the need to run a navigation program.

1. **Launch Serial Sender** (supplied on the CD).
 2. **Select 9600 baud and the COM Port** to which the USB Event Interface is connected.
 3. **Type EVENT into the text box and press [Send]**. The sentence `EVENT<cr><lf>` is sent to the appropriate COM. port and the USB Event Interface should trigger. (The green LED will change to red and the relay will energize.)
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