

# **Hydrographic Survey Products, Inc.**

## **USB Event Interface**

HCL 06/06ts

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## Introduction

Because of the trend in Notebook and to some extent Desk Top computers to replace the standard "Centronics" parallel and RS232 serial ports with USB ports, *Hydrographic Survey Products, Inc.* has produced a USB Event Interface. The USB Event Interface is designed to provide a simple means of generating a contact closure to mark graphic recorders or other devices requiring a simple isolated relay contact closure. The USB Event Interface connects to a standard Ver. 1 or 2 USB port and is powered from the same USB interface. When connected to a navigation computer (running a compatible software package) the USB Event Interface will, when triggered, output a variable length contact closure.

The USB Event Interface a small, light weight unit which lends itself well to bathymetric, side-scan or hazard type surveys. The contact closure time may be adjusted from 10mS to 3 Seconds by setting internal jumpers inside the interface. A Red / Green LED is included to indicate:

Connected and ready	-	Green
Event Received	-	Red

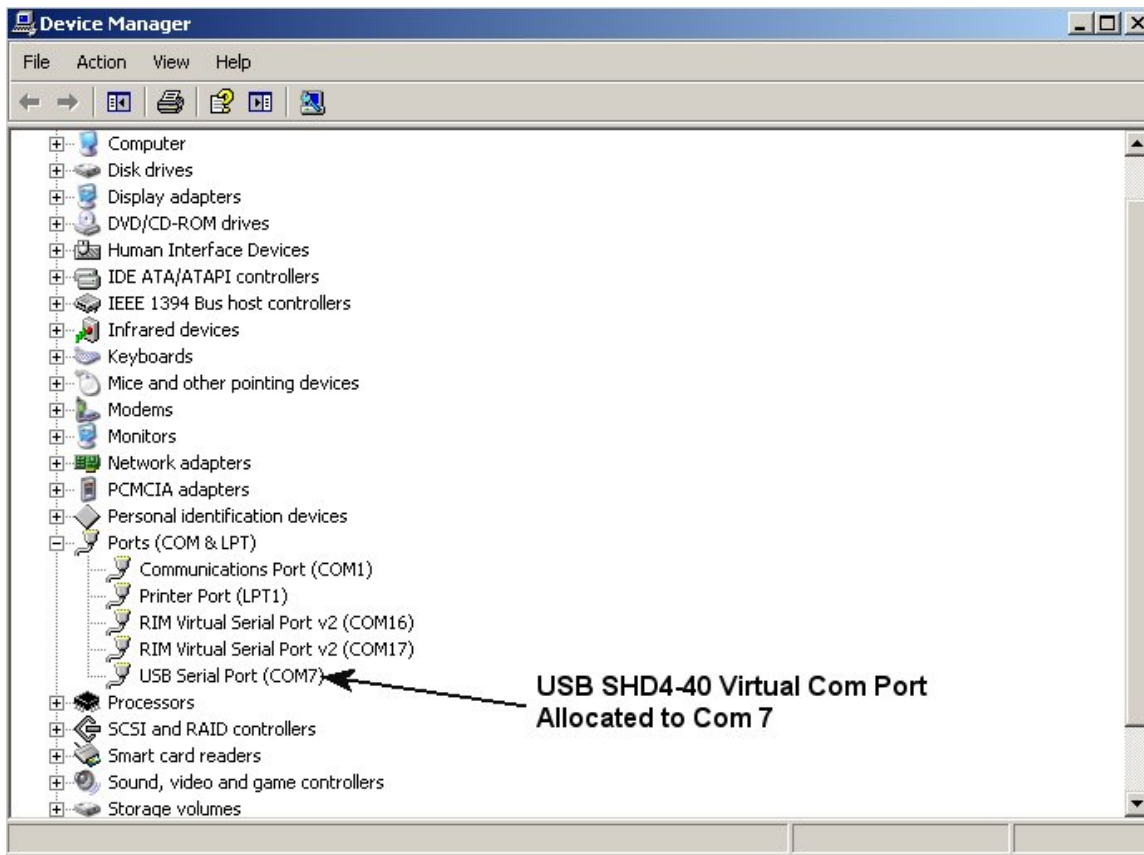
The LED will remain Red for the duration of the dwell delay and return to Green when the closure time dwell is completed, ready for another event.

## 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> @ 9600 8N1 (cr and lf are optional)  
is received the relay is energized for the period read from the dwell delay switches. After the event has been generated a short delay is inserted to prevent double triggering, before looking for the next event trigger sentence. The data is sent at 9600 8N1.

### Operation First time Connection.

Before connecting the LCEI to the PC, copy the supplied drivers \* (on the included cd) to a directory on the PC's hard drive. Now connect the LCEI to the host computer. When the LCEI is **plugged in for the first time** a Windows Wizard will appear, promoting for drivers. Simply point the Wizard to the folder where you have copied the included drivers. After the drivers have been installed a virtual com. port driver is created which redirects data sent to a virtual com port (Com 7 in this example) to the USB port.



On subsequent connections no “found new hardware” wizard will be initiated and operation may proceed as normal.

\* Units with Serial number 2124 and higher use a newer version of the RS232 to TTL module (FTDI) and do not require additional drivers to be installed. Just plug in the LCEI and a VCM port will appear in the Device Manager screen



**Note:**

Windows 10. No special drivers are required. When the Event Interface is detected by Windows the driver will be loaded automatically.

The USB version of the Event Interface replaces the standard RS232 interface with a USB interface. Power and data are supplied from the host PC's USB port via a standard USB-A male to USB-B male cable. The cable supplied with the unit is 6 ft long.

The Com port allocated by Windows may be different to Com 7 depending on the ports you have already installed. The Event Interface may be unplugged when powered up as any other USB device, however do not unplug if Hypack is sending data. If required the com port designation number may be changed.

### 3.1 Hypack® Installation

Preparation – Hypack Hardware – Devices – Add Device.

Choose the Coastal Oceanographic Event Interface Driver (lptevt.dll)

Press Connect and connect to Serial Port

Then Press Change Settings.... and select the com port allocated (com 11 in this example)

Set the baud rate to 9600

Set parity to None

Set the data bits to 8

Set the stop bits to 1

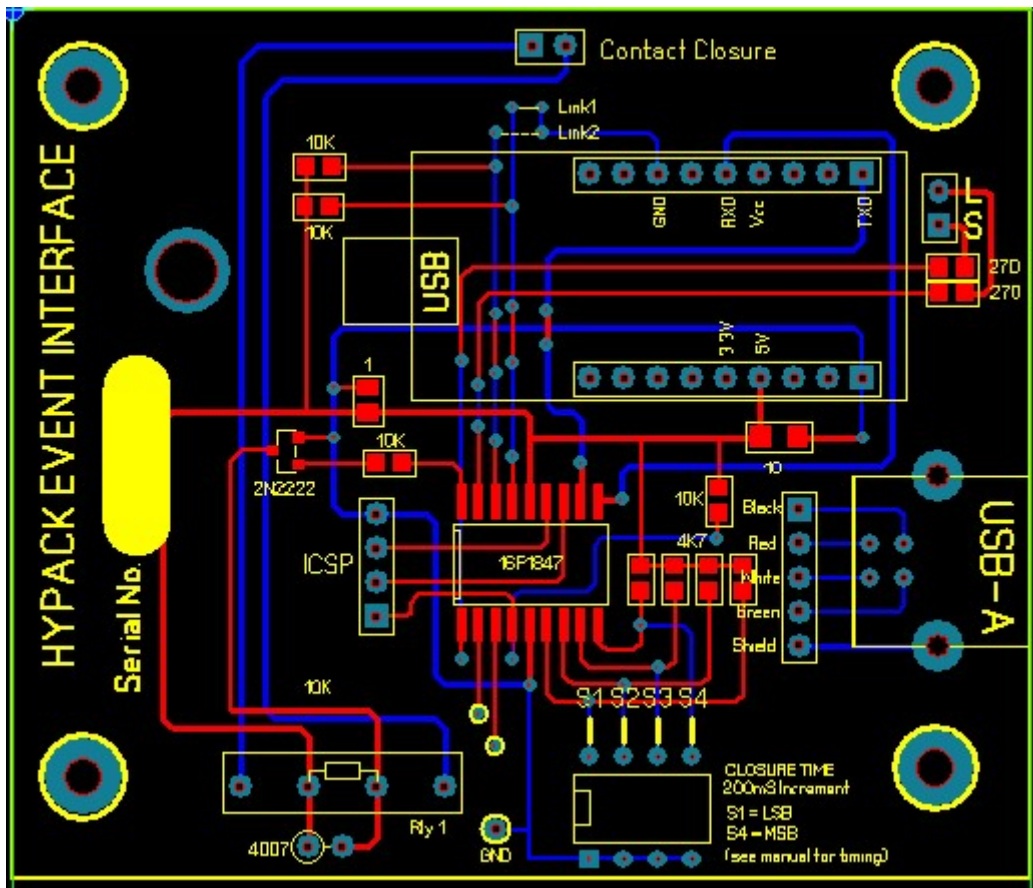
Set the flow control to None

OK – OK – OK

The data will now be redirected from the virtual Com 7 to the USB port.  
After the first installation you will not be prompted for the device drivers.

### 3.2 Setting the dwell delay.

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 running echo sounder in shallow water a short contact closure will be sufficient to mark the echo sounder. 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 a 4 position switch located inside the Event Interface. The 4 position switch is configured as a BCD counter with each count corresponding to a delay value of 200mS or 0.2 Seconds. Switch S1 is the LSB and Switch S4 is the MSB.



*Location of the Dwell Delay Switches on the Circuit Board*



**Table of Switch Settings setting to Dwell Delay**

<u>Delay</u>	<u>S1</u>	<u>S2</u>	<u>S3</u>	<u>S4</u>	
20mS	X	X	X	X	
200mS	-	X	X	X	
400mS	X	-	X	X	
<b>600mS</b>	<b>-</b>	<b>-</b>	<b>X</b>	<b>X</b>	Default setting
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 switch on  
 - indicates switch off

There are no other operator controls or settings.

The contact closure is an isolated relay contact with no connection to the USB port or host computer.



## Trouble Shooting.

In the case of problems, it is useful to inspect the Windows Device Manager settings.

- Right Click                Windows *Start*
- Click -                    Device Manager.
- Click -                    The *Device Manager* Icon
- Click -                    The > sign next to (*Ports & LPT* ) to expand the menu.
- Double Click -            *USB Serial Port (Com?)*
- Click -                    The *Port Settings* Tab at the top of the page.
- Click -                    The *Advanced* button
- Change -                 The *Com Port Number* to the required port number.

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 using the above procedure.

## Serial Sender

A simple, trouble shooting program allow you to check the operation of the USB Event Interface without the need to run a Navigation Program. Run Serial Sender (supplied on the CD) and select 9600 baud and the Com Port that the USB Event Interface is connected to.

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 Red LED will change to Green and the relay will energize).