TRACKMAN Device Driver



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To interface the HYPACK® software with the TRACKMAN software from Trackpoint ORE, a device driver was written that reads in the \$POREG message. This is a proprietary message generated from the TRACKMAN software. The TRACKMAN software is used to compute the position of the beacons and relay that information over to the HYPACK® software. You can use the same computer if the data is sent via UDP port within TRACKMAN.

In the driver there are four options:

Beacon ID, tells the driver which beacon is to be tracked by this instance of the driver. If
you track more than one beacon, the driver must be assigned to separate mobiles. A different Beacon ID is used in each instance of the driver, but the same UDP port number
can be used as multiple drivers can read from the same port.

FIGURE 1. Trackman Driver Setup Dialog

- The Compass Corrected Data tells the driver to ignore the HYPACK® heading and use the corrections in a north-oriented grid. If this is unchecked, the HYPACK® heading is used in the calculations and the TRACKPOINT is considered to be reporting the positions in a relative orientation with the BOW of the vessel as 000° relative.
- Stand Alone Mode is used when the TRACK-POINT Hydrophone is mounted on a fixed point like a dock. The coordinates of the dock are entered as the STARBOARD and FOR-WARD offsets. By entering the coordinates in the offsets, the driver adds the TRACKMAN reading to report the position of the beacon.



With the HYPACK® Timing option checked, the program uses the time tag of the message as it is received by the HYPACK® software. With this unchecked the HYPACK® program decodes the time in the \$POREG message and applies this to the HYPACK® data.



Administrator) Hypack - C:\HYPACK 2009\projects	trackpoint\trackpoint.ini	the second se
File Draw View Settings Preparation Survey Process	sing Final Products Hysweep Side Scan Utilitie	s Tools Help
C HYPACK Hardware - C:\HYPACK 200		
	9\projects\trackpoint\survey52.ini	
Base E File Edit Options Help	Device	
Data Files Add Device Add Mobile	1	
Edity 🏷 Hypack Configuration	Functions	Offsets
Sort Boat	✓ Position ✓ Heading	Starboard 0.00 m Yaw 0.00 deg.
e i mobile2	-	Forward 0.00 m Roll 0.00 deg.
e-i mobile3		Vertical 0.00 m Pitch 0.00 deg.
		Vertical Postive Downward
Project Files		
	Options	Latency 0.000 sec.
Bord		
Setup 🗆 🗆 🕱		
Beacon ID 1 🜩		Connect Network Port
, <u> </u>		Network Parameters
TRACKPOINT OPTIONS	Setup Test	
Compass Corrected Data Trackpoint is applying compass data		Protocol UDP Role Server
	Mobile Assignment	
Stand Alone Mode Hydrophone is mounted on a fixed point	Installed on mobile2	
such as a dock and offsets are used to	,	Port 2000 Write Port 2000
identify coordinates of this location.	Driver	,,
HYPACK Timing Useful if the TBACKMAN time and	TrackMan.dll	
HYPACK time are not in sync	ľ	
Ok Cancel		
`		

Figure 2 shows the configuration of a TRACKPOINT system with two beacons in the water. It is always preferable to use the compass-corrected data when possible because that allows TRACKMAN to do the math more efficiently and effectively. The BEACON ID is set to the beacon of interest and each beacon is a separate mobile.

TRACKMAN SOFTWARE

FIGURE 3. Trackman Device Interface



The main screen of the TRACKMAN software can be seen in Figure 3. The list of options to the left are buttons to access features of the program. The primary key to integrate with HYPACK® is the **device list**. This button displays a menu that allows you to specify the output parameters.

Number	Device	COM Port	Baud Rate	IP Address	IP Port Number	Input to TrackMan	Out from TrackMar
1	Trackpoint BATS		19200	192.168.3.9 (TCP)	50001	TP_SPC	TP_SPC
2	Trackpoint 3		19200		50001	TP_SPC	TP_SPC
3	Attitude Sensor Input		4800		50021		
4	Compass Sensor Input		4800		50022		
5	Depth Sensor Input		4800		50023		
6	Sound Velocity Input		4800		50024		
7	Remote Interface		9600		50002	NCSS	POREA
8	Data Output 1		4800	broadcast	2000		POREG
9	Data Output 2		4800		50012		
10	Data Output 3		4800		50013		



In Figure 4, you will notice the Data Output 1 is highlighted. This is the manner in which the TRACKMAN program is going to send out the data to HYPACK®.

By double-clicking on the Data Output 1 line in the device list, a new menu appears. This is the Setup for that output and allows us to send the data to the HYPACK software. In my tests I was running the systems on the same computer and using the internal network card to handle interfacing.

FIGURE 5. Setting Data Output 1 to output to HYPACK®

To make this work most efficiently, HYPACK recommends using the UDP Broadcast method. In this setup, the TRACKMAN software sends a UDP packet with the tracking information directly to the port specified. If HYPACK® misses the packet or is not running, the packet is dropped and gone forever. If HYPACK® starts up before the next packet is sent, it will receive this packet and begin tracking. Any missed packets are not a cause for error and, since this is a real-time tracking system, they do not affect anything.

Data Output 1 Setup				23				
Connection Type None Playb	ack 🔘 CO	M Port 🧕) IP (ne	t)				
□ IP (network) Settings Socket Type ○ TCP	P Address							
	Server	Local A	\ddress					
OUDP Broadcast p	Port Number	15001						
COM Port Settinas Port COM1 Baud 4800	Parity ◎ None Even 0 dd	Data Bits 7 8	Stop 0 1 2					
Sentence Settings Sentence In to TrackMan POREG								
🔽 Use Checksum	Me	eters	-					
ОК	Cancel		Help					