

WPI Operation Manual

For use with the Raven Marine Navigation Aid System

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Wireless Pilot Interface Operation Manual
Rev I

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Set Up General Information

The WPI, Wireless Pilot Interface, gets data from the ship's transponder and sends it to the Raven Marine Portable Navigation System. The location of the WPI will be determined by the location of the ship's pilot port. If at all possible try putting the WPI on top of a shelf or some other elevated area. Avoid putting the WPI in an enclosed area or under metal objects as this will weaken the reception. The AIS client program will auto-start when you start the charting program.

Set Up Steps

- 1 – Locate the pilot port on the vessel.
- 2 – Connect the WPI'S pilot plug to the vessel's pilot port.
- 3 – Connect the AC power (use an adapter provided with system if necessary).
- 4 – Verify the green LED is flashing.
- 5 – Verify the blue LED is on (assuming the laptop is turned on).
- 6 – The charting program should now be receiving AIS data.

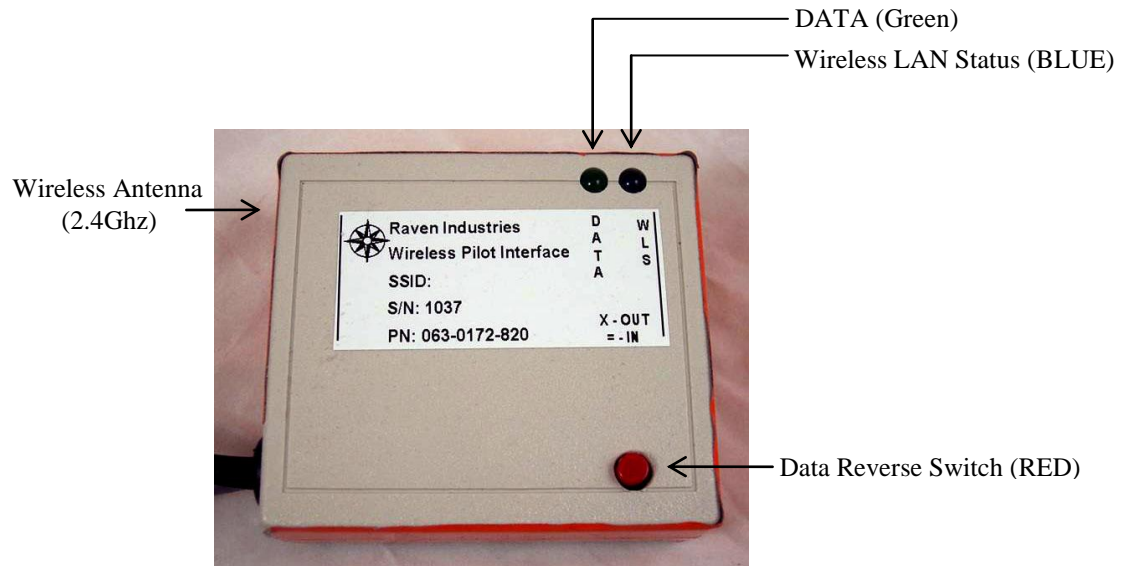
Pack Up

The system should be packed up in the reverse order of set up.

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Wireless Pilot Interface Description



Normal Operation with Data Reverse Switch In

The green LED (data) will flash when the ships transponder is outputting data. The flash will consist of an “OFF” then “ON” state 50% of the time.

The blue LED (Wireless LAN status) should be “ON” when another device (i.e. laptop) is communicating with it.

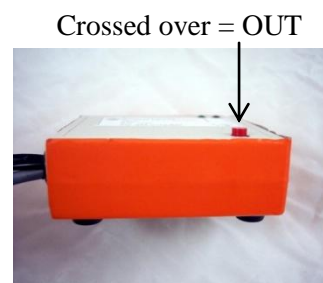
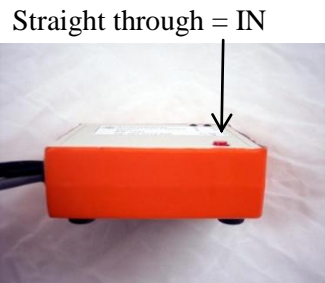
The red push button (data reversal switch) should be “IN” or pushed “down” when all wires are properly routed on the ships pilot port. Place the button to the “OUT” position if the pilot port is mis-wired (see below).

Note: The wireless antenna is on the side panel inside the box where the cables exit.

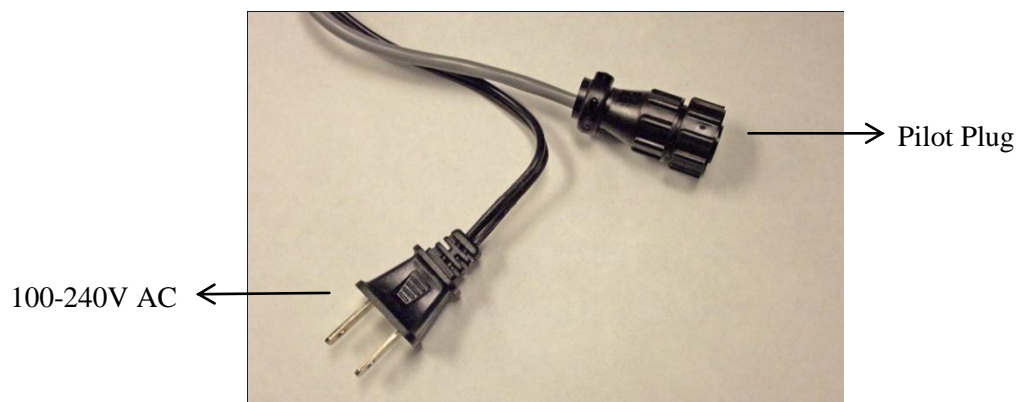
Operation with Data Reverse Switch Out

If the green LED (data) is a constant “ON” then the polarity is reversed on the transmit pins from the transponder. At this time you should press the red button (Data Reverse Switch) to swap the transmit pins inside the WPI. Notice the label shows an “X” for “cross over” or “swapped” pins and “=” parallel lines for “straight thru” pins. If desired inform the captain of improper wiring.

NORMAL operating mode = PUSHED IN



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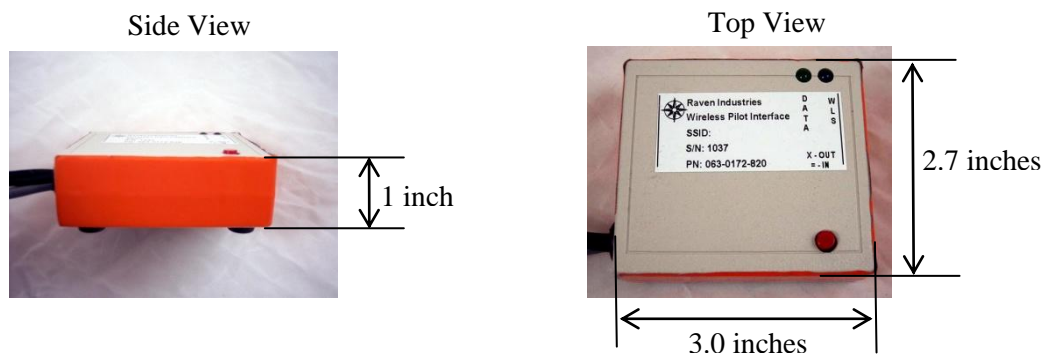
Connecting your WPI

The AC cable should be hooked to the ship's AC outlet; the WPI will accept 100 – 240 Volts AC. The Pilot Plug should be hooked to the ship's "Pilot Port" to receive data.

Note:

According to the AIS standard there should be an AC outlet near the ship's pilot port.

Dimensions



Weight

1.7 ounces

AIS Cross-Over Cable



The AIS cross-over cable is used when the AIS pilot plug on the ship has the TX (transmit) and RX (receive) wires crossed.

Proper AIS pin outs:

SHIP' S AIS			Raven WPI		
1	TXA	(-)	-----	RXA	(-) 1
4	TXB	(+)	-----	RXB	(+) 4
5	RXA	(-)	-----	TXA	(-) 5
6	RXB	(+)	-----	TXB	(+) 6
9	GND	/ Shield	-----	GND	9

WPI AIS Data Light Conditions

Data Light (Green)	Condition / Activity
1) Dim and Blinking	Correct
2) Bright and Blinking	Push IN red button on WPI
3) Light goes out when changing button position	Install cross over-cable between WPI and ship's pilot plug

If condition 1 is not met from above when the WPI is first plugged in, inform the ship's Captain of faulty AIS pilot plug wiring. If you like, print this page and give the Captain a copy of the proper wiring configuration.

AIS Client Software

AisClient 1.73
File View Options Help
Decode Log File Records One at a Time (Diagnostic Only)
AIS Log File Name: sh.log Open Get Next Get Prev
Count: 0 Decode Again
Raw AIS Messages
IAIVDM,1,1,,B,15N39J5P?w<tSF0I4Q@>4?wp00SQ,0*16
Msg Name: IAIVDM Process AIS Class B Messages
VDM or VDO Msg ID: 1 Pause
AIS PPI Baud Rate: wait
Seconds since last message from transponder: 0
The AIS transponder provides own vessel position info from it's internal GPS receiver.
Loopback Broadcast Safety Message (diagnostic only) Own Vessel using RAIM: NO
Data
VDO Message: Position Report
Own Vessel: Yes
Message ID: 1
Repeat Indicator: 0
MMSI: 636011489
Navigation Status: 0
Rate of Turn: 0.0 d/m
Speed: 15.2 k
Position Accuracy: 0
Longitude: -94.756000000 d
Latitude: 29.343150000 d
Course: 264.0
True Heading: 264
UTC Second: 12
Reserved 4 bits: 0
Spare: 0
RAIM Flag: 0
Communication State: 0
VDM Message: Position Report
Own Vessel: No
Message ID: 1
Repeat Indicator: 0
MMSI: 367053160
Navigation Status: 5
Rate of Turn: 999.0 d/m
Speed: 999.0 k
Position Accuracy: 0
Longitude: 999.000000000 d
Latitude: 999.000000000 d
Course: 999.0
True Heading: 999
UTC Second: 60
Reserved 4 bits: 0
Spare: 0
RAIM Flag: 0
Communication State: 2273
Raven Equipment Test Go To
COM Port Select: 6
Use BPI or Serial Port
Use WPI or UDP Port
Using Capn Mosaic
Use Raven Position
Log Received AIS Data
File Name: None Start Log
Replay Log File
Log File: F:\MarineFieldData\HOU_031910_Julian\03
Count: 53 Stop Replay Fast
BPI (Bluetooth Pilot Interface)
Battery Parameters
Time to Empty: 0 Hr 0 Min
Time to Full: N/A - not charging
% Charged: 0 Volts (3.2-4.2): 0.0v
Other Parameters
Wiring State:
Address:
Firmware: v0.00 Hardware: v0.00
Checksum:
Dim the LEDs on the BPI
Comm Link (UDP Socket or Com Port)
Open Socket on this IP Address: 192.168.10.200
Remote IP: 192.168.10.216
Use Alternate Remote IP
Use Alternate Local IP
Enable Auto-Baud
Status: SOCKET OPEN FAILED!

The AIS client program receives the AIS data from the WPI and sends it to the charting program.

AisClient will communicate to the WPI via UDP over a WiFi connection if 'Use WPI or UDP Port' is selected. Otherwise, AisClient will communicate with the AIS device via a standard or Bluetooth COM port.

The box with "VDO Message: Position Report" is updated once per second containing your own vessel information. Confirm "True Heading" is current gyro heading. If AIS client displays 0 or 999 – no gyro data is connected to the pilot plug – advise ship's Capt.

The box with "VDM Message: Position Report" is updated as messages come from the transponder containing remote vessel information.

The VDO and VDM information is useful for troubleshooting purposes. Press the minimize button if you do not want to see the AIS Client screen. Typically you do not.

The AIS client program will transmit data to the charting program. The AIS client program does not require user intervention to operate.

Update History

Rev I, 11-23-10, Bonnie Winston, Updated logos to Raven Aerostar Division

Rev H, 06/29/10, Dale Gambill, Updated to show current AisClient screen and other minor changes.

Rev G, 03/23/09, Dale Gambill, Replaced contact info with reference to contact info.

Rev F, 01/11/09, Dale Gambill, Updated contact info and AisClient info.

Rev E, 01/16/08, Dale Gambill, Updated contact info.

Rev D, 01/24/07, Tony Gomez

Updated WPI pictures, applied feedback from reviewers

Rev C, Tony Gomez

Updated AIS Client Screen shot

Rev B, Tony Gomez

Applied feedback from reviewers

Rev A, Tony Gomez

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