PACIFIC CREST RADIO CONFIGURATION

using PDLCONF version 4.0 software

To configure the Pacific Crest Radios (PDL Base and/or the Internal PDL Rover Radio) you will need to have the following software installed on your computer:

Evaluate (available from Thales Navigation at ftp://ftp.thalesnavigation.com) and

PDLCONF Version 4.0 (available from Pacific Crest at http://www.paccrst.com)

PDL Base Radio Configuration

You will need the PDL Base Radio, antenna, power supply and PCC cable (P/N A00470). For computers with USB ports only you will also need a USB to Serial Adaptor.



Connect the antenna to the Base Radio and then connect the PCC cable to the Base Radio and computer COM Port. Connect the power supply last.



Turn on the Power for the Base Radio only after connecting the antenna.

(NEVER turn on a PDL Radio without first connecting the antenna)

Open the PDLCONF program on the computer.



Select a Serial Port if prompted.

PD PdlConf for Thales	Navigation - I	End User		
A shite sh	Identification	Radio Link Serial Int	terface	1
	Select Serial	Port		e:
Help	Serial Port	Choose an available Status	port	er:
Load	3 6	Available Available		h:
Program	OK]	Cancel	n:
Close	Owner:			
Print	<u></u>			
Exit		Undo Changes	Factor	y Defaults

Left click on the icon in the upper left corner of the dialog box and click on Set Capture Method and Soft Break. If you were not prompted for a Serial Port upon starting the software you can click on Select Serial Port from this menu to open the appropriate dialog box.

_	Move Minimize	Radio Link Serial	Interface
×	Close /	Alt+F4	
	Select Serial Port	Medel	Frequency Bange:
	Set Capture Method	Power On Capture	
	Upgrade modem firmware	✓ Soft Break	Power:
	About PDLCONF	- N	
	Load	Modem ID:	Channel Bandwidth:
	Program		
	Close	Serial Number:	Call Sign:
	Print	Owner:	
	Exit	Undo Change:	s Factory Defaults

The Capturing Modem dialog box should open.



When a successful connection to the Base Radio has been made the Loading dialog box will open and the software will begin reading the current configuration of the radio.

Load	ling	
R	eading the settings from the modem	

The Port Baud Rate in PDLCONF and the Port Baud Rate of the Base Radio must be set the same for a successful connection, if not an error message will occur. If this happens try again using a different Port Baud Rate.

Information from the PDL Base Radio will appear under the Identification Tab. Enter your call sign and company name in the Call Sign and Owner fields.

PolConf for Thales	Navigation - End User
	Identification Radio Link Serial Interface
S Ashtech	Model Information
PRECISION PRODUCT:	Model: PDL HP Base Frequency Range: 450-470 MHz
Help	Firmware Revision: 2.20 Power: 35 Watts
Load	Modem ID: 938-7 Channel Bandwidth: 25 K
Program	Serial Number: 03134258 Call Sign: Your Call Sign
	Owner: Your Company
Print	
Exit	Undo Changes Factory Defaults

Left Click on the Radio Link Tab

	Identification Radio Link	Serial Interface		
Ashtech	Channel Select	Channel	ТХ	RX
PRECISION PRODUCT	Manual: •	01	461.0750	461.0750 💌
Help	AutoBase: C AutoRover: C		mport Channel Tab	ble
Load	Link Rate: 96 Modulation Type: G1	00 - MSK -	Forward Erro	r Correction: 🔽 Scrambling: 🔽 MA Monitor: 🔽
Program	Digisquelch: Lo	• w		
Close	Transmit Retries:	3	Local Addres	ss: 0
	TX ACK Timeout	0.1	Remote Addres	s: 255

The CHANNEL SELECT box displays the "channel" and "frequency" of the radio. The channel/frequency can be changed by clicking on the down arrow to browse and select the desired settings. The settings are based on your radio license. The Base and Rover Channel / Frequency selections must match.

- Channel Select		Channel	TX	RX	(
Manual: AutoBase:	0 0	01	461.0750	461.0	750 💌
AutoRover:	0		Import Channe	l Table	

Link Rate:	9600 💌
Modulation Type:	GMSK 👻
Digisquelch:	Low
Transmit Retries:	3
TX ACK Timeout:	0.1

The **MODULATION TYPE** setting is GMSK. The Base and Rover Modulation Types must match. The **DIGISQUELCH** setting for the PDL Base Radio is LOW.

The LINK RATE setting is for the Radio to Radio communications over the airwaves. The Base and Rover Link Rates must match.

The TX ACK Timeout value is displayed in milli-seconds. The setting Timeout value is 0.1. Left Click on the Serial Interface Tab.

PdlConf for Thales	Navigation - End User
Help	Identification Radio Link Serial Interface
Load	Protocol Mode: Transparent w/EOT Timeout BREAK to Command: BREAK to Command: BREAK to Command:
Close	EOT Count: 10 Digipeater Delay: 0.00
Exit	Undo Changes Factory Defaults

The Port Box displays the Baud Rate.	Port	
The Port Baud Rate for the PDL Base and the ZXtreme Receiver is 9600.	Baud Rate: 9600	Soft Break Enabled: 🔽
	Parity: None 💌	Data Security Code: 00000000
The Port Parity is None.		
The Protocol box displays the Mode and EOT Count.	Protocol	
The Mode is	Mode: Transparent w/EOT Timeou	BREAK to Command:
Transparent w/EOT Timeout.		
The EOT Count for Thales Navigation GPS Receivers is 10	EOT Count: 10	Digipeater Delay: 0.00
-		

If you have made changes left click on the **Program** button.

When the Programming dialog box opens left click on the **Yes** button to confirm.

PdlConf for Thales	Navigation - End User
Ashtech PRECISION PRODUCT	Identification Radio Link Serial Interface
Load	Program modem with new settings?
Program Close	Mo Repeater: EOT Count: 10 Digipeater Delay: 0.00
Print Exit	Undo Changes Factory Defaults

Wait for PDLCONF to complete the programming before proceeding.

PolConf for Thales	Navigation - End User
Ashtech	Identification Radio Link Serial Interface
Help Load	Programming modem with new settings Caution: Do not disconnect modem at this time.
Program Close	EOT Count: 10 Digipeater Delay: 0.00
Exit	Undo Changes Factory Defaults

Left click on the **Print** button to print or make a .pdf of the PDL Base Radio Configuration for future reference.

Pdf995 Save	As	? 🗙
Save in: 🛅	radio configs 💽 🗢 🔁 🗎	* 🏢 🕇
	Radio configuration for GMSK.PDF	
File name:	Z-Xtreme PDL Base Radio Configuration.PDF	Save
Save as type:	PDF (*.pdf)	Cancel

Left click on the **Close** button to shut down the connection and then the button to exit PDLCONF. Disconnect the PDL Base Radio.

Exit

Pol PolConf for Thales	Navigation - End User
Ashtech	Identification Radio Link Serial Interface
PRECISION PRODUCT.	Baud Rate: 9600 Soft Break Enabled:
Help	Parity: None Data Security Code: 00000000
Load Program	Mode: Transparent w/EOT Timeout Repeater:
Close Detach from	EOT Count: 10 Digipeater Delay: 0.00
Exit	Undo Changes Factory Defaults

IF NO CHANGES WERE MADE: Left click on the Close button to shut down the connection and then the Exit button to exit PDLCONF. Disconnect the PDL Base Radio.

PDL (Internal) Rover Radio Configuration

You will need the ZXtreme GPS Receiver with internal PDL Radio, antenna, charged battery and PC-Download cable (P/N 700461). For computers with USB ports only you will also need a USB to Serial Adaptor.



Verify that there is an internal radio installed in the ZXtreme and that it is a PDL Radio. The Model label on the rear panel of the ZXtreme indicates the radio type and frequency range.



On the back panel of the ZXtreme connect the antenna to the Radio Port and the PC-Download cable to Serial Port A. Then connect the PC-Download cable to the computer COM port. (*If an external power supply is used connect it.*)



Power on the ZXtreme and open the EVALUATE program on the computer.



Left click on **OK** and select a COM Port.

Connection Parameters	s 🔀
Connect	Connect
	Disconnect
Port Setup	Cancel
🔲 Default Com setting	2
☐ Initialize from file: DIFF	BAS.GPS 💌
Turn off ALL messages o	n detach
Manual Connect (require GGA, VTG, GSA and GSV	es NMEA messages /)

Left click the **Port Setup** button and set the Port Baud rate to 9600.

Baud rate 9600	
Data Bits 8	Use RTS/CT
Parity None	
Stop Bits 1	OK Cano

Left click the button and Connect . Evaluate will begin the GPS Receiver Initialization.

GPS Receiver Initialization	
AutoSelect Stop << >>	Cancel
🖳 \$PASHQ,PRT	~
🍠 ¤-bin:NAK	
₽ \$PASHR,NAK*30	
🖳 \$PASHQ,PRT	
🦻 \$PASHR,PRT,A,5*56	
	~
<	×



Left click on OK



Open the Evaluate Terminal Window with a left click on the computer icon.

Toggle the terminal window switch from Menu to Type by clicking on the switch.

B GPS Receiver Terminal		
Menu Type \$PASH	Send Create *.gps	
**		
		×
		1

In the Type field enter \$PASHS, INI, 5, 5, 5, 5, 1, 0

Left click on the Send button.

To temporarily turn off the "BEEP" from the receiver enter \$PASHS,BEEP,OFF in the Type field and left click on the Send button.

×	GPS Receiver Terminal
	Menu Type \$PASHS,BEEP,OFF Send Create *.gps
~	4
V	
2	4

Verify that the receiver responds with ACK and not NAK.



Enter \$PASHQ,RID and left click on the Send button. Observe the RID string.

GPS Receiver Terminal	
Menu Type \$PASHQ,RID Send Create *.gps	
	^
SPASHS,BEEP,OFF	
S 🖉 🖉 -bin:ACK	
SPASHR ACK*3D	
SPASHQ,RID	
SPASHR,RID,UZ,30/ZE21,BUE-MFT3JKIY,0A13*4B	

Enter the following \$PASH queries and commands:

\$PASHS,CTS,A,OFF and left click on the Send button. Observe ACK.

\$PASHS,SPD,D,5 and left click on the Send button. Observe ACK.

\$PASHS,DSY,D,A and left click on the Send button. Observe ACK.

\$PASHS,DSY,A,D and left click on the Send button. Observe ACK.

For more information look up the commands in the Z Family manual (available in the reference manuals folder) on the Thales Navigation ftp server. <u>ftp://ftp.thalesnavigation.com</u>

😣 Menu 🔳 💽 Type	\$PASHS,DSY,A,D	Send Create *.gps		
 \$PASHS,DSY,D,A 0-bin:ACK \$PASHR,ACK*3D \$PASHS,DSY,A,D \$PASHS,DSY,A,D 0-bin:ACK \$PASHR,ACK*3D 	\$PASHS,DSY,A,D \$PASHS,DSY,D,A \$PASHS,SPD,D,5 \$PASHS,CTS,A,OFF \$PASHS,RID \$PASHS,BEEP,OFF \$PASHS,JNI,5,5,5,1,0 \$PASHQ,PRT \$PASHQ,PRT \$PASHQ,RTC \$PASHS,SPD,A,9	5		< III >
<			×	

Exit the Evaluate Program with a left click on the close button in the upper right corner of the screen.



Don't disconnect anything yet. Leave it hooked up to configure the internal PDL Radio.

Open the PDLCONF 4.0 program on the computer.



Left click on the icon in the upper left corner of the dialog box and click on Set Capture Method and Soft Break.

Move Minimize	e		Radio Link Serial	Interface	
Close		Alt+F4	formation		
Select S	Serial Port		Madel	Frequency Range:	
Upgrad	e modem firmwa	re	✓ Soft Break	Power:	
About F	PDLCONF		Modem ID:	Channel Bandwidth:	
P	rogram	Ser	ial Number:	Call Sign:	
	Close			Gairoign. J	
	Print	Owner:	:		
	Exit		Undo Change	s Factory Defaults	1

Click on the **Load** button to connect to the radio and check the current settings.

The Capturing Modem dialog box should open.



When a successful connection to the PDL Internal Radio has been made the Loading dialog box will open and the software will begin reading the current configuration of the radio.

_oading	
Reading the settings from the modem	

Information from the PDL RXO Internal Radio will appear under the Identification Tab. Enter your company name in the Owner field.

PollConf for Thales	Navigation - End User
	Identification Radio Link Serial Interface Model Information Model: PDL RXO Frequency Range: 450-470 MHz
Help Load	Firmware Revision: 2.31 Modem ID: 974-5 Channel Bandwidth: 25 K
Program Close	Serial Number: 02030836 Owner: Your Company
Print Exit	Undo Changes Factory Defaults

Left Click on the Radio Link Tab.

•**•	Identification Radio Link Serial Interfa	ce
Ashtech	Channel Select Manual: Channel 15	TX RX 464.6000 -
Help	AutoRover: C	Import Channel Table
Load	Link Rate: 9600 Modulation Type: GMSK	Forward Error Correction: Scrambling: CSMA Monitor.
Program	Digisquelch: High	
	Transmit Retries:	Local Address: 0 Remote Address:

The CHANNEL SELECT box should display the "channel" and "frequency" settings based on your radio license. They can be changed by clicking on the down arrow to browse and select the desired settings. The Base and Rover Channel / Frequency selections must match.

Γ	- Channel Select	~	Channel	TX	RX	
	Manual:	• 15		464.6000	•	
	AutoRover:	0		Import Channel	l Table	

Set the Link Rate, Modulation Type and Digisquelch to match those shown.

Link Rate:	9600 💌	Forward Error Correction:
Modulation Type:	GMSK 👻	CSMA Monitor:
Digisquelch:	High 💌	
Transmit Retries:		Local Address: 0
		Remote Address:

Left Click on the Serial Interface Tab.

PdlConf for Thales I	Navigation - End User
	Manuffranting Deute Units Constitutions
Achtoch	
	Baud Rate: 9600 Soft Break Enabled:
Help	Parity: None 💌 Data Security Code: 00000000
Load	Protocol
Program	Mode: Transparent w/EOT Timeout
Close	EOT Count: Digipeater Delay:
Print	
Exit	Undo Changes Factory Defaults

The Port Box displays the Baud Rate.	Port	
The Port Baud Rate for the PDL Base and the ZXtreme Receiver is 9600.	Baud Rate: 9600	Soft Break Enabled: 🔽
	Parity: None 💌	Data Security Code: 00000000
The Port Parity is None.		

The Protocol box displays the Mode	- Protocol Mode:	Transparent w/EOT Timeout	•	BREAK to Command:
The Mode is Transparent w/EOT Timeout.	EO.	T Count:	Digi	peater Delay:

If you have made changes left click on the Program button.

PdlConf for Thales	Navigation - End User
Ashtech	Identification Radio Link Serial Interface
Help	Parity: None Data Security Code: 00000000
Load Program	Mode: Transparent w/EOT Timeout BREAK to Command: Repeater:
Progra	m the modem with the current settings Digipeater Delay:
Exit	Undo Changes Factory Defaults

When the Programming dialog box opens left click on the **Yes** button to confirm.



Wait for PDLCONF to complete the programming before proceeding.



Left click on the Print button to print or make a .pdf of the ZXtreme PDL (Internal) Rover Radio Configuration for future reference.

Pdf995 Save As				
Save in: 🚞 radio configs	▼ ← 🗈 💣 📰 •			
ZMax PDL Radio configuration for GMSK.PDF Z-Xtreme PDL Base Radio Configuration.PDF				
File name: Z-Xtreme PDL Rover Radio Configura	ation.PDF Save			
Save as type: PDF (*.pdf)	Cancel			

Left click on the Close button to shut down the connection and then the Exit button to exit PDLCONF.

PdlConf for Thales	Navigation - End User
Ashtech PRECISION PRODUCT	Identification Radio Link Serial Interface Port Baud Rate: 9600 Soft Break Enabled:
Help	Parity: None Data Security Code: 00000000 Protocol
Program	Mode: Transparent w/EOT Timeout BREAK to Command: Repeater:
Close Print Detach fro	EOT Count: Digipeater Delay:
Exit	Undo Changes Factory Defaults

Disconnect the ZXtreme and do a "front panel" RESET. This will cancel the Daisy Chain mode in the receiver and make it RTK ready.

IF NO CHANGES WERE MADE: Left click on the Close button to shut down the connection and the Exit button to exit PDLCONF.

Disconnect the ZXtreme and do a "front panel" RESET. This will cancel the Daisy Chain mode in the receiver and make it RTK ready.

§ 3/30/05