

TPS1200 Quick Guide

5.0 Communications

Communication Options

There are many options for communication choices when using TPS1200. This chapter will concentrate on the details of using a TCPS27B external radio and the RH1200 radio handle to communicate with the RX1220T controller.

System 1200 Communication Concept

System 1200 has an innovative concept for handling the communication between the instrument and the robotic controller.

The **interface** is the procedure, code and protocol that will enable the communication between the instrument and the device and allow the exchange of data.

The **port** is the connection through which another device can communicate with the instrument.

The **device** is the hardware that is chosen to work with the instrument through the designated port.

In this Chapter

This chapter shows examples of different interfaces using different ports and devices.


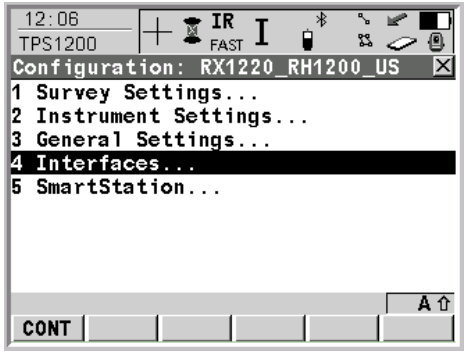
Section	Topic
5.1	Settings For RCS Mode Using RH1200 Radio Handle
5.2	Settings For RCS Mode Using TCPS27B External Radio
5.3	Settings On RX1220T For Robotic Communication
5.4	Troubleshooting Radio Communications

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5.1 Settings For RCS Mode Using RH1200 Radio Handle

General Information

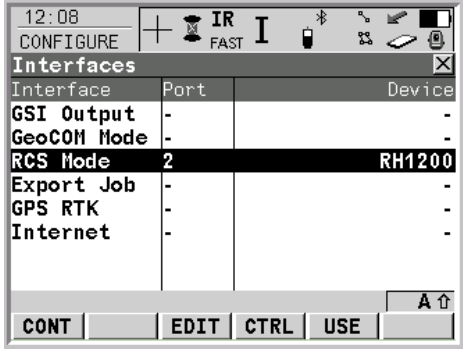
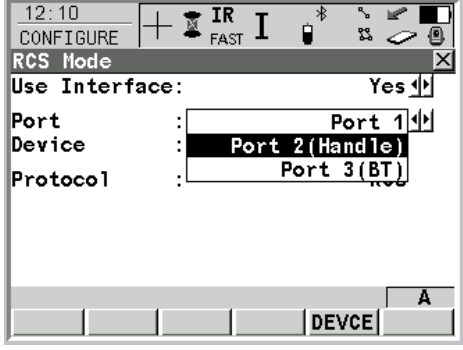
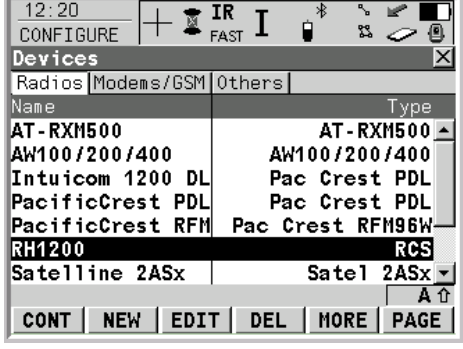
The following steps show the screens and settings that you need to successfully work with the TPS1200 instrument and the robotic controller, RX1220T.
Note: Your interface settings are stored in your configuration. Select the proper configuration before continuing with this chapter. For further information about making configurations, reference chapter 2 *Configuration Sets*.

Step	Action	Display
1	From the Main Menu: <ul style="list-style-type: none"> Tap on 5 Config... <p>This takes you to the TPS1200 Configuration: screen.</p>	
2	In the TPS1200 Configuration: screen: <ul style="list-style-type: none"> Tap on 4 Interfaces.... <p>This takes you to the CONFIGURE Interfaces screen.</p>	

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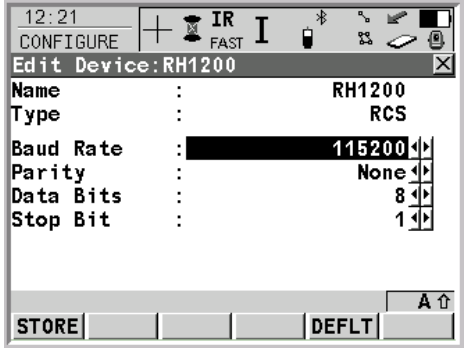
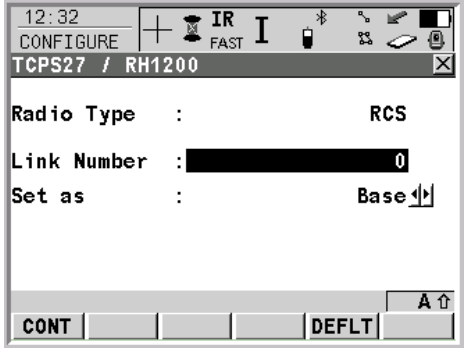
5.1 Settings For RCS Mode Using RH1200 Radio Handle

Step	Action	Display																					
3	<p>In the CONFIGURE Interfaces screen:</p> <ul style="list-style-type: none"> Highlight the RCS Mode interface. Press the F3 (EDIT) button. <p>This takes you to the CONFIGURE RCS Mode screen.</p>	 <table border="1"> <thead> <tr> <th>Interface</th> <th>Port</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>GSI Output</td> <td>-</td> <td>-</td> </tr> <tr> <td>GeoCOM Mode</td> <td>-</td> <td>-</td> </tr> <tr> <td>RCS Mode</td> <td>2</td> <td>RH1200</td> </tr> <tr> <td>Export Job</td> <td>-</td> <td>-</td> </tr> <tr> <td>GPS RTK</td> <td>-</td> <td>-</td> </tr> <tr> <td>Internet</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Interface	Port	Device	GSI Output	-	-	GeoCOM Mode	-	-	RCS Mode	2	RH1200	Export Job	-	-	GPS RTK	-	-	Internet	-	-
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Export Job	-	-																					
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Internet	-	-																					
4	<p>In the CONFIGURE RCS Mode screen:</p> <ul style="list-style-type: none"> Set Use Interface: Yes. Set Port: Port 2 (Handle). Press the F5 (DEVCE) button. <p>Note: We will select the device in the next step. You should confirm that the Protocol is set to RCS. This was selected in the previous step by highlighting RCS Mode before pressing the EDIT button.</p> <p>This takes you to the CONFIGURE Devices screen.</p>																						
5	<p>In the CONFIGURE Devices, Radios tab:</p> <ul style="list-style-type: none"> Highlight RH1200, type RCS. Press the F3 (EDIT) button to check the communication parameters. <p>This takes you to the CONFIGURE Edit Device: RH1200 screen.</p>	 <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>AT-RXM500</td> <td>AT-RXM500</td> </tr> <tr> <td>AW100/200/400</td> <td>AW100/200/400</td> </tr> <tr> <td>Intuicom 1200 DL</td> <td>Pac Crest PDL</td> </tr> <tr> <td>PacificCrest PDL</td> <td>Pac Crest PDL</td> </tr> <tr> <td>PacificCrest RFM</td> <td>Pac Crest RFM96W</td> </tr> <tr> <td>RH1200</td> <td>RCS</td> </tr> <tr> <td>Satellite 2ASx</td> <td>Satel 2ASx</td> </tr> </tbody> </table>	Name	Type	AT-RXM500	AT-RXM500	AW100/200/400	AW100/200/400	Intuicom 1200 DL	Pac Crest PDL	PacificCrest PDL	Pac Crest PDL	PacificCrest RFM	Pac Crest RFM96W	RH1200	RCS	Satellite 2ASx	Satel 2ASx					
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5.1 Settings For RCS Mode Using RH1200 Radio Handle

Step	Action	Display
6	<p>In the CONFIGURE Edit Device: RH1200 screen:</p> <ul style="list-style-type: none"> Set Baud Rate: 115200. Set Parity: None. Set Data Bits: 8. Set Stop Bit: 1. Press the F1 (STORE) button. Press the F1 (CONT) button twice to return to the CONFIGURE Interfaces screen. 	
7	<p>Continuing in the CONFIGURE Interfaces screen:</p> <ul style="list-style-type: none"> With the RCS Mode/ Port 2 choice highlighted, press the F4 (CTRL) button to set or change the Link Number. Set the Link Number to match the link number of your Remote radio. Set Set as: Base. Press the F1 (CONT) button. <p>This returns you to the Configure Interfaces screen.</p> <p>Note: A message is displayed confirming that the Link number on Port 2 has been changed.</p> <ul style="list-style-type: none"> Press the F1 (CONT) button. <p>This returns you to the Main Menu.</p>	

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5.2 Settings For RCS Mode Using TCPS27B External Radio

Step	Action	Display																					
1	<p>From the Main Menu:</p> <ul style="list-style-type: none"> Tap on 5 Config.... <p>This takes you to the TPS1200 Configuration: screen.</p>																						
2	<p>From the TPS1200 Configuration: screen:</p> <ul style="list-style-type: none"> Tap on 4 Interfaces.... <p>This takes you to the CONFIGURE Interfaces screen.</p>																						
3	<p>In the CONFIGURE Interfaces screen:</p> <ul style="list-style-type: none"> Highlight the RCS Mode interface. Press the F3 (EDIT) button. <p>This takes you to the CONFIGURE RCS Mode screen.</p>	<table border="1"> <thead> <tr> <th>Interface</th> <th>Port</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>GSI Output</td> <td>-</td> <td>-</td> </tr> <tr> <td>GeoCOM Mode</td> <td>-</td> <td>-</td> </tr> <tr> <td>RCS Mode</td> <td>1</td> <td>TCPS27</td> </tr> <tr> <td>Export Job</td> <td>-</td> <td>-</td> </tr> <tr> <td>GPS RTK</td> <td>-</td> <td>-</td> </tr> <tr> <td>Internet</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Interface	Port	Device	GSI Output	-	-	GeoCOM Mode	-	-	RCS Mode	1	TCPS27	Export Job	-	-	GPS RTK	-	-	Internet	-	-
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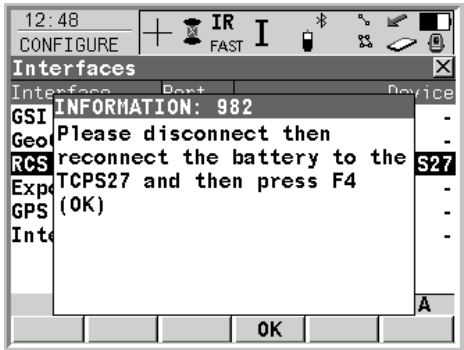
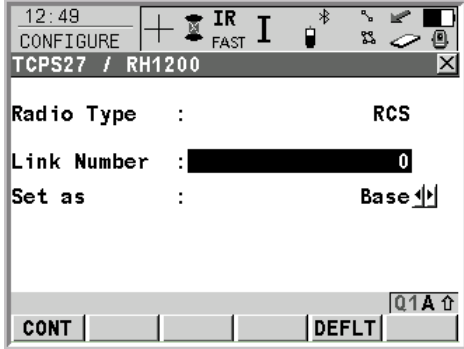
5.2 Settings For RCS Mode Using TCPS27B External Radio

Step	Action	Display
4	<p>In the CONFIGURE RCS Mode screen:</p> <ul style="list-style-type: none"> Set Use Interface: Yes. Set Port: Port 1. Press the F5 (DEVICE) button. <p>Note: We will select the device in the next step. You should confirm that the Protocol is set to RCS. This was selected in the previous step by highlighting RCS Mode before pressing the EDIT button.</p> <p>This takes you to the CONFIGURE Devices screen.</p>	
5	<p>In the CONFIGURE Devices, Radios tab:</p> <ul style="list-style-type: none"> Highlight TCPS27, type RCS. Press the F3 (EDIT) button to check the communication parameters. <p>This takes you to the CONFIGURE Edit Device: TCPS27B screen.</p>	
6	<p>In the CONFIGURE Edit Device: TCPS27B screen:</p> <ul style="list-style-type: none"> Set Baud Rate: 115200. Set Parity: None. Set Data Bits: 8. Set Stop Bit: 1. Press the F1 (STORE) button. Press the F1 (CONT) button twice to return to the CONFIGURE Interfaces screen. 	

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5.2 Settings For RCS Mode Using TCPS27B External Radio

Step	Action	Display
7	<p>Continuing in the Configure Interfaces screen:</p> <p>Information: 982</p> <ul style="list-style-type: none"> • Disconnect the cable from the TCPS27B and reconnect it. • Press the F4 (OK) button. 	
8	<p>Continuing in the Configure Interfaces screen:</p> <ul style="list-style-type: none"> • With the RCS Mode/ Port 2 choice highlighted, press the F4 (CTRL) button to set or change the Link Number. • Set the Link Number to match the link number of your Remote radio. • Set the Set as: Base. • Press the F1 (CONT) button. <p>This returns you to the Configure Interfaces screen.</p> <p>Note: A message is displayed confirming that the Link number on Port 1 has been changed.</p> <ul style="list-style-type: none"> • Press the F1 (CONT) button. <p>This returns you to the Main Menu.</p>	

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5.3 Settings On The RX1220T For Robotic Communication

Remote Mode In the remote mode the TPS1200 is controlled from the RX1220. To work in this mode, the TPS1200 must be set to RCS mode.

Step	Action	Display
1	<p>On the RX1220 unit:</p> <ul style="list-style-type: none">• Hold the USER button for 2 seconds to enter the Local Settings menu. <p>In the Main Configuration Menu:</p> <ul style="list-style-type: none">• Select 3 Radio/Comms Settings.• Set ComMode: RCS Mode on the Modes page.• Press the F6 (PAGE) button to advance to the Param tab.• Set the Link Number: to match the Base radio.• Set the Set as: Remote. <p>Note: The rest of the communication parameters need not be changed. The default settings are consistent with the default settings on the instrument.</p> <p>Important Note: The Link Number can be a value from 0 to 15, but it must match on both the base and remote radios.</p>	Space intentionally left blank.

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5.4 Troubleshooting Radio Communications

Communication Trouble There are times when the radios just won't communicate. You think you have checked every setting, but it only takes one mismatch to disrupt the radio communications.

Link Numbers Verify that the link number matches on both the base radio and remote radio.

See *section 5.1, steps 6 and 7* for setting the link number on a TCPS27B Base radio.

See *section 5.2, steps 7 and 8* for setting the link number on a RH1200 radio handle.

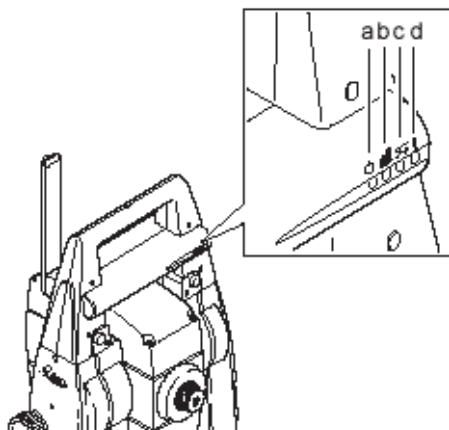
See *section 5.3, step 1* for setting the link number on an RX1220 internal radio.

Port Selection Verify that the interface port number matches the port number being used by the device.

See *section 5.1, step 4* for selecting the proper port when using the RH1200 radio handle.

See *section 5.2, step 4* for selecting the proper port when using the TCPS27B base radio.

RH1200 Radio Handle The LED indicators provide information about the status of the radio handle.



- a) Power LED
- b) Link LED
- c) Data Transfer LED
- d) Mode LED

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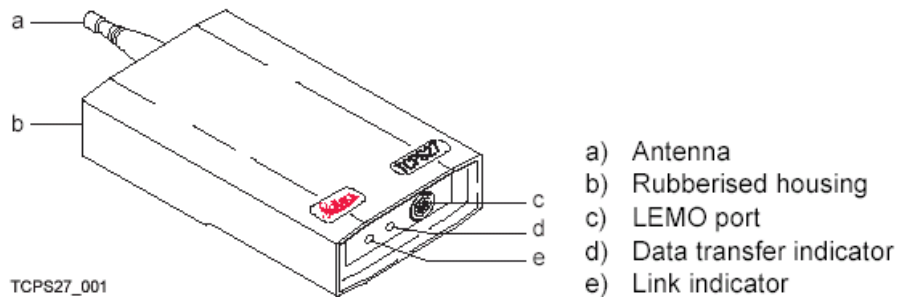
5.4 Troubleshooting Radio Communications

RH1200 Radio Handle, cont

IF the	is	THEN
Power LED	off	power is off.
	green	power is on.
Link LED	off	no radio link to remote controller.
	red	radio link to remote controller.
Data Transfer LED	off	no data transfer to/from remote controller.
	green or green flashing	data transfer to/from remote controller.
Mode LED	off	data mode.
	red	configuration mode.

TCPS27B Base Radio

The LED indicators provide information about the status of the radio.



DATA flashes when data is being transmitted or received by the unit.

LINK indicates standby in the TCPS27B or synchronisation in the TCPS27R.

Communication Parameters

Your communication parameters (baud rate, parity, data bits, stop bits and terminator) must be matching on your instrument interface, your base radio and your remote radio. The instrument settings can be checked as in *section 5.1, step 6* and *section 5.2, step 6*. The TCPS27B radio can be checked with the TCPS Config application found on the TPS1200 CD.