

System 1200 Newsletter – No. 22

RX1220 Transparent – Semi Transparent Modes

TPS1200 - RX1220 TRANSPARENT MODE

This newsletter answers many questions we receive about the “Transparent” and “Semi-Transparent” modes which are available when using the TPS1200 and RX1220 Controller.

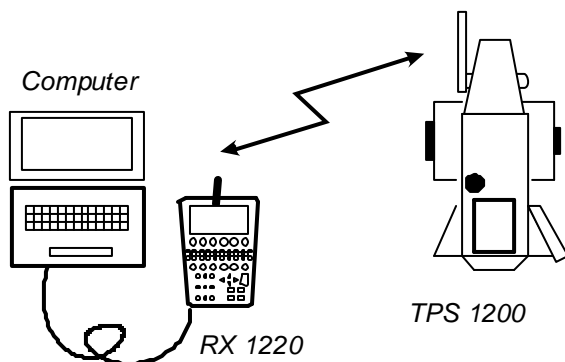
TRANSPARENT MODE

The **Transparent** mode allows the TPS1200 to be remotely controlled by a PC (or other device). The RX1220 controller is attached to the PC and the TPS1200 instrument is then controlled with GeoCOM commands which are sent via the radio link.

An example of this could be when the TPS instrument is being used to monitor a structure in a remote location and the instrument is being controlled directly **from the PC** (and the measurement data is stored on the PC) – there is then no need for the surveyor to stand behind the instrument.

Additionally, a remote connection to LGO and hence a software upload or data transfer is also possible.

To work in transparent mode, it is required that either the TCPS27 or the new RH1200 Radio Handle is attached to the TPS1200 instrument and the RX1220 is connected to the PC.



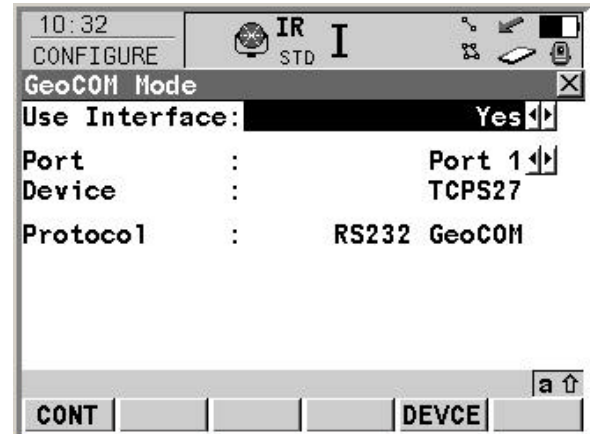
Note, in the transparent mode, only the “radio part” of the RX1220 only is used. The remote control part is deactivated and therefore no normal TPS1200 panels or connection icon is shown.

To work in transparent mode it is first necessary to connect the RX1220 via cable to a computer. The following settings must be made on the TPS1200 instrument and RX1220.

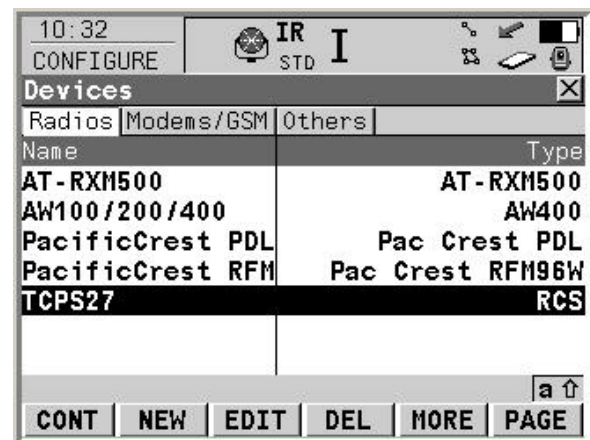
TP1200 SETTINGS

Access the **CONFIGURE GeoCOM Mode** panel by highlighting the **GeoCOM Mode** interface in the **CONFIGURE Interfaces** panel and press **F3(EDIT)**.

Select the correct port - **Port1** when using a **TCPS27** or **Port 2 (Handle)** when using the **RH1200 Radio-Handle**.



Press **F5(DEVICE)** to access the **CONFIGURE Devices** panel.



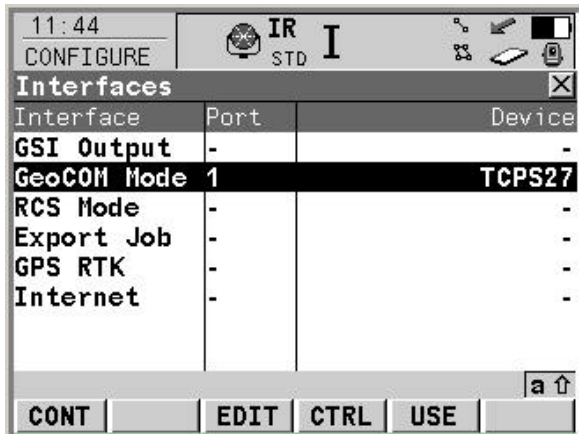
In this panel, new devices can be created (**F2(NEW)**) or existing devices can be edited (**F3(EDIT)**) to use different communication parameters if necessary.

Press **F1(CONT)** twice to return to the **Configure Interfaces** panel.

Ensure that the **GeoCOM Mode** interface is the only active interface. If any other interfaces are being used, then highlight that interface and press **F5(USE)** to turn off that interface.

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Press **F4 (CTRL)** to view or change the link number of the **RH1200 Radio Handle** or **TCPS27**. Ensure the link number is identical to the link number setting on the RX1220.

RX1220 SETTINGS

Turn on the RX1220 and press **F2 (CONF)** to access the **RX1220T Main Configuration Menu**.

Choose **3 Radio/Comms Settings** to access the **RX1220T Radio/Comms Settings** panel and then press **F6(PAGE)** to access the **Param** page. If necessary, enter the correct link number within this panel and then press **F6(PAGE)** again. Use the right/left arrow keys to change the **Com Mode to Transparent**. Select the **Baud rate** that matches the PC settings and press **F1(CONT)**.

You can now start any common “Terminal” program on your PC and start sending GeoCOM commands and receiving data from the instrument.

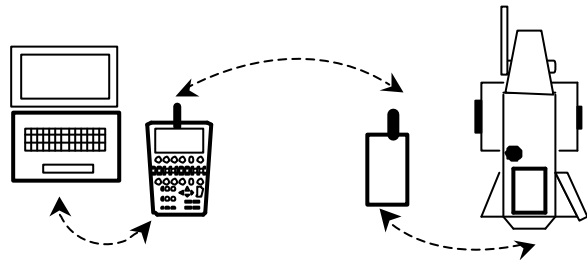
Note, with RX1220 firmware versions 1.50 or higher, the baud rate can be changed to a lower rate if necessary (see also later).

TPS1200 - RX1220 SEMI-TRANSPARENT MODE

The **Semi-Transparent** mode can be used if the TPS1200 instrument is to be controlled using the RX1220 but the measured data should be transmitted to a PC.

An example of this could again be when the TPS instrument is being used to monitor a structure in a remote location, but this time the instrument is being controlled **from the RX1220** (not controlled from the PC as was the case with the

transparent mode) – and the measurement data is stored on the PC.



In order to work within the **Semi-Transparent** mode, attach the RX1220 via cable to the PC and make the following settings.

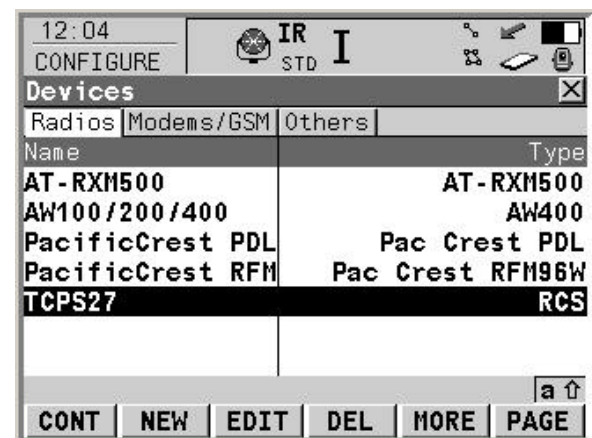
TPS1200 SETTINGS

To work in Semi-Transparent mode both the **GSI Output** and the **RCS Mode** interfaces must be configured.

Access the **CONFIGURE GSI Output** panel by highlighting the **GSI Output** interface in the **CONFIGURE Interfaces** panel and press **F3(EDIT)**.

Set **Use Interface** to **Yes** and select the correct port and device (**Port1** when using a **TCPS27** or **Port 2 (Handle)** when using the **RH1200 Radio Handle**) and GSI format to be output.

Press **F5(DEVICE)** to access the **CONFIGURE Devices** panel.

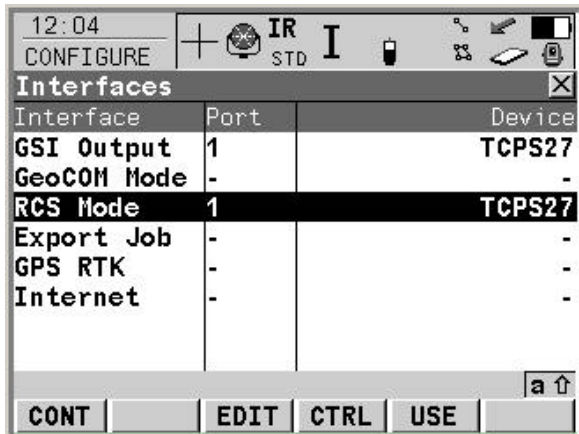


In this panel, new devices can be created (**F2(NEW)**) or existing devices can be edited (**F3(EDIT)**) to use different communication parameters if necessary.

Press **F1(CONT)** twice to return to the **Configure Interfaces** panel.

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Ensure that the **GeoCOM Mode** and **RCS Mode** interfaces are the only active interfaces. If any other interfaces are being used, then highlight that interface and press **F5(USE)** to turn off that interface.

Repeat for the **RCS Mode** interface – again ensure that the correct port and device are selected. The link number of the TCPS27 or RH1200 radios can be checked by highlighting the **GSI Output** or **RCS Mode** interface and pressing **F4 (CTRL)**.

RX1220 SETTINGS

Turn on the RX1220 and press **F2 (CONF)** to access the **RX1220T Main Configuration Menu**.

Choose **3 Radio/Comms Settings** to access the **RX1220T Radio/Comms Settings** panel and then press **F6(PAGE)** to access the **Param** page. If necessary, enter the correct link number within this panel and then press **F6(PAGE)** again. Use the right/left arrow keys to change the **Com Mode** to **Semi-Transparent**. Select the **Baud rate** that matches the PC settings and press **F1(CONT)**.

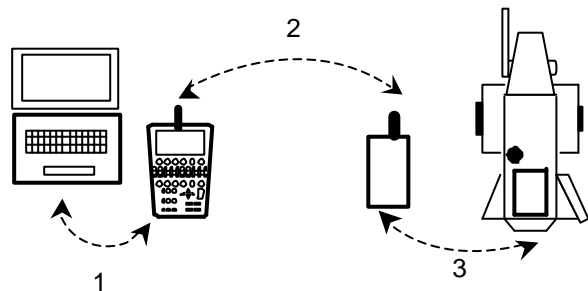
Now press the **ESC** key for a couple of seconds and the RX1220 will show the instrument's display. When you can see the radio icon moving a radio connection to the instrument exists. You can now start any common "Terminal" program on your PC to receive data from the instrument.

TIPS WHEN USING SEMI-TRANSPARENT MODE

With RX1220 firmware versions 1.50 or higher the baud rate can be changed to a lower rate if necessary for both the **Transparent** and **Semi-Transparent** modes.

The baud rate between the instrument and the TCPS27 can be changed onboard or with help of the TCPS27 Config Tool. Note, this baud rate must then be the same as the baud rate between the PC and the RX1220.

For example, if the baud rate between the computer and RX1220 (1) is set to 19200, then the baud rate between the TPS instrument and the TCPS27 (3) should also be set to 19200.



Note that the communication settings between the radio modules (the over-the-air baud rate (2)) are fixed and cannot be changed.

Note also that the baud rate between the instrument and the RH1200 Radio Handle is fixed to 115200 and cannot be changed.

For both Transparent and Semi-Transparent modes we recommend to check that the radio type is correctly set. One must be set to **Base** the other one to **Remote**. Usually, the radio with the most reliable power supply should be set to **Base**.

CAN BLUETOOTH BE USED ?

If the PC receiving the measurement data from the TPS1200 instrument is sufficiently close to the instrument then it is possible to send and receive data to and from the PC to the instrument using Bluetooth communication. This of course has the advantage that it is no longer necessary to attach the RX1220 to the PC.

Of course, the main disadvantage of this is that the PC must be relatively close to the TPS1200 instrument - when using radios, the PC can be anywhere within the radio range of the radios between the PC and TPS1200 instrument.

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EQUIPMENT LIST FOR WORKING IN TRANSPARENT OR SEMI-TRANSPARENT MODE

TPS1200 SIDE

Using **RH1200 Radio Handle: RH1200** Radio Handle (741964) and suitable **GSD01** Communication Side Cover (741962) or **GSD02** (741963).

Using **TCPS27 radio module: Base radio** (734161), **Remote radio** (734162), **GEV186** Y-cable (734697) and external battery (example **GEB171** (727367)).

PC SIDE

RX1220 (738376) or **RX1220T** (733261) with an internal **GEB211** battery (733269) and **GEV160** cable (733280).

Note, if working in Transparent mode then a TCPS27 and **GEV188** cable (734699) and external battery is sufficient.

REMEMBER

It is possible to remotely control TPS1200 instruments using either the so-called **Transparent** mode or **Semi-Transparent** modes. The difference between the 2 methods is the following.

With the **Transparent** mode, the instrument is remotely controlled directly from the PC (using a software running on the PC and sending the necessary commands). Measured data is stored on the PC.

With the **Semi-Transparent** mode, the instrument is remotely controlled from the RX1220 but with the data being stored on the PC.