STEP 4 - CONNECTING YOUR HF RADIO, PACTOR MODEM AND LAPTOP TOGETHER

4.1 What is supplied

You will have received either an SCS PTC-IIusb Modem (refer figure1-1 below) or the smaller, SCS PTC-IIex Modem (refer figure 1-2 below) and some connecting cables with your order.

Figure 1-1

Figure 1-2

Both modem types require radio specific cables that are normally supplied (after consultation with you) by www.radios.net.au

The SCS PTC-IIex Modem may also be supplied with a USB to serial converter (if ordered).

You will have also received a CD with software and other install / user information, plus five ferrite clip on beads.

Please note that a DC power lead is NOT normally supplied for your modem. The DC power for the modem is supplied by the radio, via the other interconnecting cables that we have supplied.

4.2 Installation Tips

4.2.1 Powering up your Modem

The SCS PTC-IIusb Modem switches on / off using the small green button at the bottom right of the front panel. The SCS PTC-IIex Modem turns on / off using the applicable switch on the rear of the modem.

As both modems receive their power to operate from the radio it is suggested that you leave the modems switched "on". When you switch on / off your radio the modem will automatically power up / down in conjunction with the on / off status of the connected HF radio.

4.2.2 Do not connect the USB cable from the modem to your PC until you have loaded the Airmail software per Section 6 of this manual. The Airmail software includes the driver for your USB modem.

4.2.3 For SCS PTC-IIex (serial modem) installations only - Get your USB to serial convertor device operational first.

If your laptop does not have a serial port (common ommission on most modern laptops) - it looks similar to the RS232 connector on the rear of the SCS PTC-IIex modem - you will need to purchase a USB to serial convertor from us. This device simply plugs into your laptop USB port and converts it into a serial type connector. Make sure you have this device operational first before proceeding with your pactor modem installation. Like all USB devices, you must load the driver files from the CD provided with the USB - serial convertor first and then plug in the device. It will be "plug and play" once the driver files have been loaded.

4.2.4 Connect with cables first - get working - then try bluetooth

ALERT ALERT !!! We recommend installing your modem with cabling first, ensure that all is 100% operational, and then proceed to implement bluetooth wireless connectivity (refer our "Connecting via Bluetooth" help guide for bluetooth connectivity instructions)

4.2.5 Do not drill through the case

Although the modem needs to be secured so that it does not move about - do not drill holes in the case as this may damage the internals or leave metallic waste from the drilling inside the modem which could again short circuit the internal circuitry.

4.2.6 If making up your own cabling

WARNING WARNING WARNING !!!!If you have chosen to make up your own cabling - DO NOT try to force a non European 8 Pin DIN into the female socket on the rear of the modem...it will not fit, and you will damage the connector and void your warranty.

4.2.7 Pactor Modem temperature

The modem does not run particularly hot so you do not need to be sensitive to unit temperature when choosing your mounting location

4.3 The Cables

4.3.1 Cable Length

The standard cables supplied are approximately 1.5 meters long, so you will have to locate and secure the SCS modem within close proximity to the radio. Longer customised cables can be supplied at additional cost but this is not recommended as longer cabling to your modem increases the likelihood of interference to the modem from your HF radio transmissions.

4.3.2 Familiarise yourself with the cables.

Both modem types require a cable to connect the port labelled " TRX Audio " (an 8 pin female European din plug) on the back of the modem, to your radio. The supplied cable for this purpose will either be an 8 Pin European DIN Plug (male) or a USA Style , 5 Pin DIN Plug (male).

Both the 5 Pin and 8 Pin European connectors at the modem end of the cables we supply will comfortably fit into "TRX Audio" socket on the back of the modem. Please make sure however that you align the cable end din connector so that the male pins line up to match the configuration of the female pins within the TRX Audio socket on the rear of the modem.

Some radios also use an 8 Pin USA Style Connector as their Accessory 1 socket (ie in this case you cable could have an 8 pin din connector on each end). The European 8 Pin and USA 8 Pin look very similar...but the din plugs on the cables supplied will be labelled "modem end" and "radio end" to help you determine which cable end goes where. Fortunately most radios use a connector (at the radio end of the cable) that is visually very different to the 8 or 5 pin din connector that plugs into the " TRX Audio " port on the modem, so there should be little confusion.

4.3.3 Familiarise your self with the rear of the modem

The rear of the PTC-IIusb modem appears in the figure 1-3 below :

Figure 1-3

From left to right:

- No connection is required to socket "DC In" (the modem is powered via other cabling connected through to the radio). For this reason no DC power cable is supplied.
- USB port accepts a standard USB cable (supplied) which connects to any USB port on your laptop (USB 1 or 2). Do not make this connection until you have loaded the Airmail software (covered in step 6) as the modem driver files are contained within the Airmail software itself.
- TRX control socket is for remote frequency control of your radio (cable for compatible Icom radios is supplied).
- GPS NMEA is for hooking up your GPS - leave this connection until you have your modem operational in terms of sending / receiving email. Instructions / options for attaching your GPS are discussed fully in the applicable help file for this topic.
- TRX Audio carries modem data to and from the radio. Cable is supplied and usually connects to Accessory Jack 1 on most radio models - refer specific connection related information below.

The rear of the SCS PTC-IIex Modem appears in figure 1-4 below:

Figure 1-4

- On / off switch is self explanatory - refer section 4.2.1 above
- Connector to the right of on/off is a GPS connector. Leave this connection until you have your modem operational in terms of sending / receiving email. Instructions / options for attaching your GPS are discussed fully in Section 10.6 of this manual.
- TRX Audio carries modem data to and from the radio. Cable is supplied and usually connects to Accessory Jack 1 on most radio models - refer specific connection related information below.
- The RS232 connector attaches to your laptop using the 9 pin serial (computer) cable (supplied). If your laptop does not have a serial port (it looks similar to the RS232 connector on the modem - most modern laptops do not have a serial port) you will need to purchase a USB to serial convertor from us. This device simply plugs into your laptop USB port and converts it into a serial type connector. Make sure you have this device operational first before proceeding with your pactor modem installation. Like all USB devices, you must load the driver files from the CD provided with the USB - serial convertor first and then plug in the device. It will be "plug and play" once the driver files have been loaded.

4.3.4 Connecting the Cables

Locate the supplied cable that has either an 8 Pin DIN (European) connector or 5 Pin DIN USA connector on one end, and is labelled " AF Modem ". Insert this into the " TRX Audio " connector on the rear of the modem.

For the most common radio types, the other end of this cable will have either a 13 Pin DIN for Icom 706/78/718/7000 model radios, or an 8 Pin DIN for the Icom M802 Marine radio, or a 9 Pin Sub D connector for the Icom Marine M801e radio. This end of the cable plugs into the radio. If you are not sure of which connector on the radio to use (on most radios, you only really have the one choice, which makes it easy) consult the handbook supplied with the radio, or ask us at radios.net.au

If you have the PTC-IIusb modem, you will also see a connector on its rear labelled " TRX Control ". This connector allows the modem to issue frequency commands to the radio and thus requires a cable from this connector to the remote connector on the associated radio.

Some radio models do not have the electronics needed for your modem to "remote control" frequency switching. All recent Icom marine radios do however have this functionality. If you are using an Icom branded radio, you will thus have been provided with a second cable that plugs into the 13 Pin DIN on the modem (This connector is radically different to the TRX Audio connector, so there is no chance of confusion) and then plugs into the Remote Control (sometimes call CIV) connector on your Icom radio.

If you have an Icom M-802 or M801E make sure the cable is connected to the *Remote* connector on the radio, and not the *Audio* connector. The M-802 / M801e uses a DB-9 connector on both of these connections, and they are frequently confused. When looking at the rear panel of the M802 / M801E body - the remote connector is the DB-9 socket on the left next to the GPS connector.

The PTC-IIex modem is not capable of direct radio frequency control, and thus does not have this connector on its rear panel.

You should have provided information to radios.net.au when you were ordering your modem, as to what radio you are using, so the cables will be supplied as " Plug and Play " for both the TRX Audio and TRX Control functions.

If the above is not the case, please contact radios.net.au for further advice, or seek help from a specialised marine communications installer.

Once you have the supplied cables installed, you can turn on your radio, and then turn on the modem. The PTC-IIusb modem has the power switch on the front of the modem, and the PTC-IIex has the switch on the rear. You should see the modem self test, accompanied by flashing of the front panel LED indicators, then it will go to standby mode.

Plug the provided USB Cable into the USB Port on the PTC-IIusb modem, or the serial cable into the RS232 Port on the PTC-IIex modem, **BUT DO NOT PLUG THE OTHER END INTO THE COMPUTER YET**

You are now at the point where you should begin installing the software on your computer.

For information on where to place you clip on ferrites (supplied) refer to our help file on this topic "Combating Radio Interference to your Modem"

Diagram below shows the 3 cables attached to the rear of your Pactor Modem (USB)

USB A/B cable to USB port on laptop
from TRX control on modem to DB9 remote connector on the M802 radio body
TRX Audio cable (rear of modem) to Acc 1 jack on the M802 radio body.