

## Step 11A - Eliminating radio interference to the modem

### Introduction:

It is possible that your transmitted radio signal will get into and interfere with the operation of your pactor modem. This is not a fault of the modem - this suggests that your HF radio is poorly installed and that any of the following could be a problem:

- Poor grounding (number one offender!!!)
- Loose coaxial cable connections (ie plugs not adequately tightened)
- Poor positioning of antenna (ie too close to other metal objects)
- Old coaxial cable - ie has moisture ingress and has oxidised
- Radio is being overdriven (ie you have the output power up too high)
- Feeder cable from the antenna tuner to the antenna feedpoint is too long (less than 2 metres is ideal)
- Copper grounding strip from the antenna tuner to your grounding plate is too long (less than 1 metre is ideal)

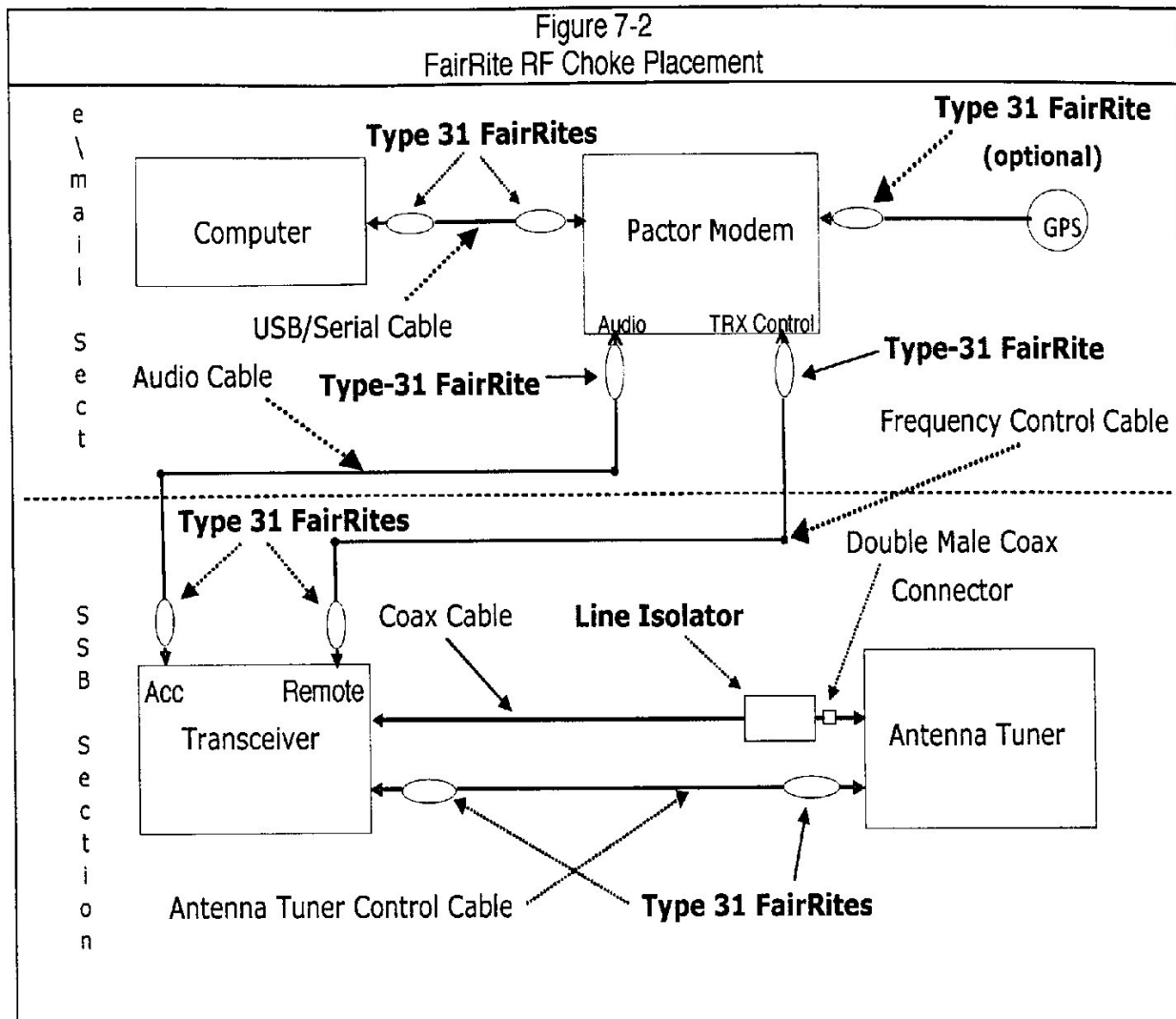
Before going on a witch hunt for the possible cause of the interference to the modem it maybe possible to eliminate the problem by doing the following:

- Use the modem bluetooth functionality - the less cables attached to the modem (cables act as mini antennas) the better
- Attach the clip-on ferrites (filters) to your cabling per the placement information provided below
- Install an RF Line Isolator as described in 11.3.2 below
- Purchase an SWR / Power meter to ensure that your antenna tuner is functioning correctly (ie that it is tuning the antenna as it should)

Additional ferrites, line isolators and other test related equipment can be purchased via [radios.net.au](http://radios.net.au)

### 11.3 FairRites • Where to put Type-31 Snap-on Fair Rite RF Chokes.

The Fair-Rite RF chokes included with the Pro and EX kits are made of a special "Type 31" material formulated to suppress unwanted RF down 10 MHz. RF chokes commonly sold by Dick Smith and other retail electronics stores are made of the more common available type 43 or 44 materials, and are ineffective at marine and amateur radio HF frequencies.



### 11.3.1 FairRite Placement on Modem Cables

Three cables are required to connect the PTC-Illusb modem to the radio and hosting computer; and the PTC-Ilex requires two. The diagrams in Figures 7-1 and 7-2 show the cabling scheme for connecting the modem and radio together, and where the six Type-31 FairRite RF chokes are to be placed. Each FairRite must be installed within an inch or two of the end of each of these interconnecting cables.

If the RF choke tends to slide on the cable, put a small nylon tie-wrap around the cable behind the FairRite to prevent it from straying too far from the cable end. It is also a good idea to put a small nylon tie-wrap around the entire choke to ensure that the two halves of the ceramic FairRite material make contact with each other.

### **11.3.2 FairRite Placement in the HF Radio System**

There should also be an extra large Type-31 FairRite installed at each end of the antenna tuner control cable, and a "line isolator" (looks like a 4-inch length of PVC pipe with an SO239 female coaxial connector on each end) installed in the coax within about 18 inches of the antenna tuner. If your HF radio installation doesn't have these RFI suppressing components installed, it would be a good idea to email [www.radios.net.au](mailto:www.radios.net.au) and discuss RF grounding and RFI suppression