

In this section, you will assemble the system, test it and in doing so, test each item. At the end of the section, you will be able to monitor packet signals and also transmit simple messages.

This is the last Section in the Intro series.

- All the Sections so far should be followed for any packet program – Airmail, Paclink, Telpac.
- After this Section, you will install one specific program
- If this Section is not completed successfully, you should NOT proceed with installing a program

Good design and setup will avoid many problems and hours of troubleshooting!

We may all be anxious to do the next step, but let us pause and make sure that we get this pre-commissioning work done correctly!

Assembly:

Cabling:

1. Check that all cables are short – not excessively long
2. Check that ferrite rings are on both TNC cables, 12V power supply cable. In some cases, you will also need ferrites on the mouse and keyboard cables.
3. Check that you have good ground connections and avoid ground loops. Ground all equipment pieces back to a common point which should be a good rf ground or at least the 110V ground
4. Connect cables

Radio

1. Check that the transmit frequency is within ½ KHZ of the nominal frequency. You can do this with a frequency counter (available in the workshop) or with a tunable receiver (in combination with another transmitter of known frequency)
2. Check the power output of the transmitter

TNC

1. **Audio level:** If the audio from the radio comes from the speaker jack, check and adjust the correct level of audio. This is important as too little audio will result in the TNC not 'hearing' and too much will result in the TNC choking. So:
 - With all the equipment on and connected, turn the audio and squelch right down
 - With no signal being heard, turn up the volume until the TNC receive light goes on. Note the knob position and turn up just a little
 - With no signal being heard, turn up the squelch until the receive light goes off. Note the knob position and turn up just a little
 - For software carrier detect in the TNC, you should use the final volume position above (the squelch knob can be right down (that is, off). This is the preferred method. Look in your manual and now set the TNC to use software carrier detect (Hint: use Hyperterminal and for Kantronics TNCs, set "CD software")
 - If you rely on the radio for squelch, make a note of these positions and make sure that they are always set correctly (you may want to tape over them?)

PC

1. Go to Control Panel, System, Hardware, Device Manager, Ports(COM & LPT)
2. Check the number of the COM port that you will use (avoiding COM ports that are already in use)

3. Double click on the COM description to get the Properties
4. Click on port settings.
5. Set the port speed to TNC speed (for TNC to PC) or greater.
6. The settings should be:
 - a. Data bits: 8
 - b. Parity: None
 - c. Stop bits: 1
 - d. Flow control: none
7. Click OK and close windows

Testing

Deviation:

1. Check if your TNC has a calibration feature (Generally, Kantronics and MFJs do)
2. If so, enter the calibration mode and transmit. Check the transmit lights on the TNC.
3. Set the deviation level using the deviation meter. Aim for a deviation of 3 – 3.5 KHz. Check in your TNC manual how to do this. It could be a variable resistor, jumper or software.
4. Note the reading.

Receiving:

1. check if you can receive text being transmitted by others, and that your receive light blinks

You are now ready to install software such as Airmail, Paclink or Telpac

Exercises:

1. Send a note when you complete this section.
to kb2wf@yahoo.com.
In the title of your email, place your callsign and the Section number

If you have any questions, don't hesitate to ask for help.