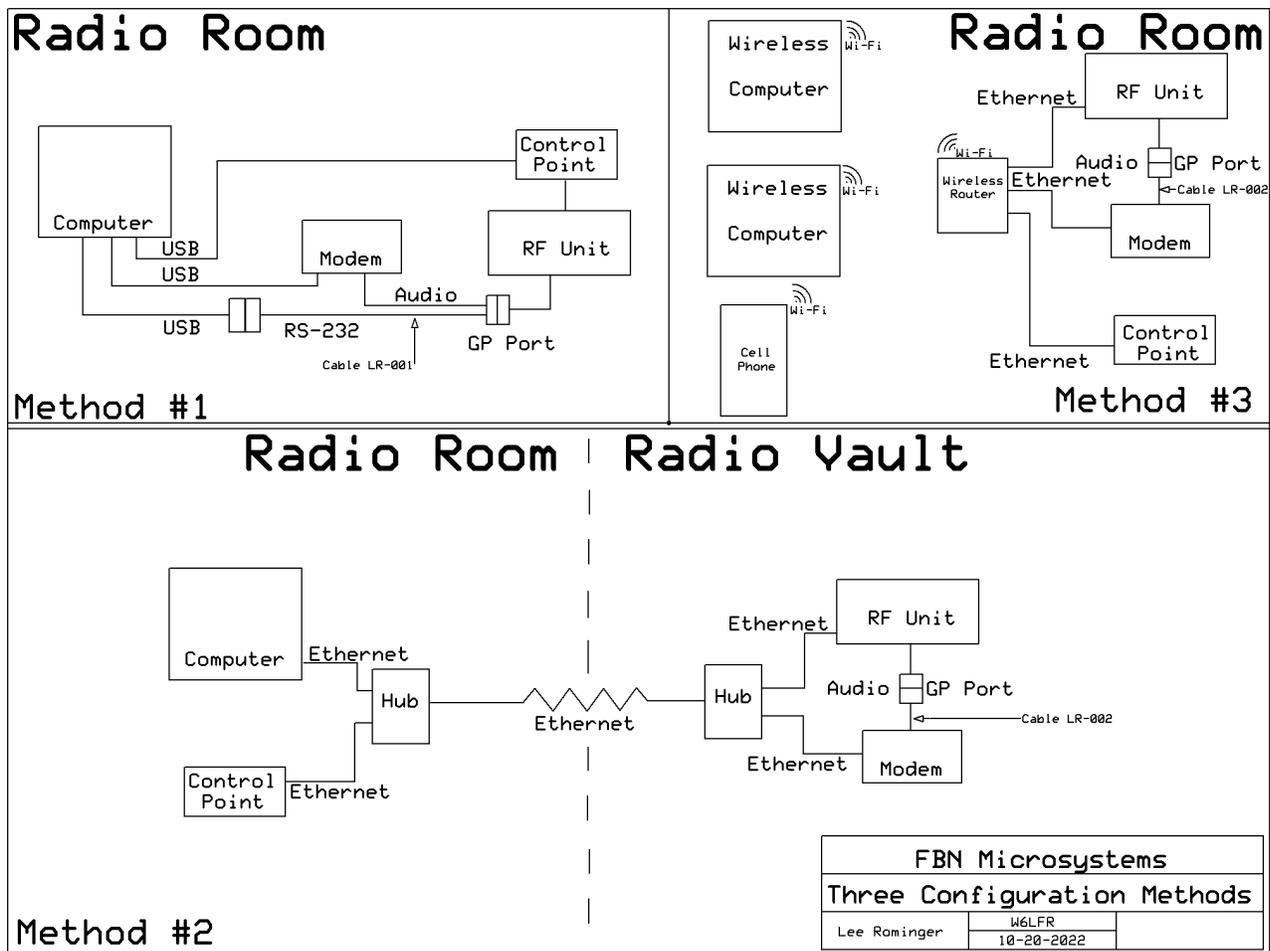


Using Winlink® with the CODAN® Envoy® Radio

This procedure is not meant to be the only method of using Winlink with the CODAN Envoy radio and it is not meant to be an endorsement of CODAN Limited. It is just what works for us. There are multiple ways to control the CODAN Envoy radio and SCS DR-7800 modems. One way is using Universal Serial Bus (USB) to the Pactor modem and a USB to RS-232 adapter for controlling the frequency of the radio with a third USB cable from the computer to the control point used for programming the radio (see diagram Method #1). Another method is connecting the CODAN Radio Frequency Unit (RFU), CODAN desk console, SCS Pactor modem, and computer together via an Ethernet switch. The control point (CP) can be either the type 2230 desk console or the type 2220 handset (see diagram Method #2). If one uses the program VirtualControlPoint it allows the user to control the radio from a computer or cellphone if it's connected to the radio via Ethernet cable, USB cable or Wi-Fi (see diagram Method #3 and Figures 10 and 11).



I have included details with which some may already be familiar; however, I wanted to make this procedure helpful to those who are unfamiliar with Winlink Express or the CODAN radio settings.

CODAN®, Envoy®, Sentry™-H, Envoy SmartLink™, Easitalk®, CALM®, TPST™ and CODAN Convoy™ are trademarks of CODAN Limited. Other brand, product, and company names mentioned in this document are trademarks or registered trademarks of their respective holders.

Equipment Required:

1. CODAN Envoy X1 or X2 radio with Free Tune TX enabled. (Note #1).
2. CODAN TPS™ System Programmer Software USB Drive.
3. SCS DR-7800 Pactor Modem.
4. Computer running Windows 7 or above.
5. CODAN Envoy to SCS DR-7800 interface cable (Figure 8, see Note #2).
6. Control cable:
 - a. If using USB for control of the DR-7800, USB “A” to “B” cable.
 - b. If using RS-232 for control of the RFU, USB to RS-232 adapter.
 - c. If using Ethernet for control of both the DR-7800 and the RFU, purchase an Ethernet module as seen on page 67 of the *DR-7X00 Installation Guide*.

Pre-Configuration Setup

1. Found on the Transceiver Programming Software (TPS™) system Software USB Drive, install the TPS program by running Setup.exe.
2. Also on the Same USB Drive, run VcomInstall_X.XX.exe (where “X.XX” is the version number). VCOM creates a virtual Com port link from the computer to the radio for frequency control.

SCS DR-7800 Pactor Modem Reconfiguration:

1. Remove the front panel of the Pactor Modem as described in the *DR-7X00 Installation Guide* page 63 “Opening the P4Dragon:” and continue until the main PC board is removed from the aluminum housing.
2. As explained in paragraph 6.2.1 (pages 74 and 75) of the Instruction Guide, switches 2 and 3 that are associated with the connector (MAIN or AUX) that will be used must be set to the OFF position to provide balanced audio to the CODAN Envoy radio.
3. If you will be controlling the modem with Ethernet now is the time to install the Ethernet module
4. Re-assemble the Pactor modem.
5. If using cables LR-001 or LR-002, these cables supply power to the DR-7800 from the RF Unit, therefore do not supply power to the DR-7800 via the “DC-in” connection. See paragraph 5.1 on page 61 of the *DR-7X00 Installation Guide*.
6. To have the DR-7800 turn itself on whenever the radio is on, set switch 1 (labelled “ON”) on the back of the DR-7800 to the DOWN position. For these switches, DOWN is ON. See the “Always ON feature” section of paragraph 5.1.1, “Switching the P4dragon on and off”, on page 61 of the *DR-7X00 Installation Guide*; see also Figure 2 on page 63 or Figure 4 on page 64 for the location of the “ON” switch.

Winlink Express Configuration:

1. Download and run Winlink Express install software from downloads.winlink.org
2. Fill out Winlink Express settings - see Figure 1.
3. Download and install the English version SCS USB Driver Installer from <https://www.scs-ptc.com/en/downloads.html>
4. If using a USB to RS-232 adapter, install the driver for the USB to RS-232 adapter cable.
5. Turn on the radio, turn on the DR-7800, and connect the USB cable (Equipment Required item #6a) between the modem and computer.
6. If using RS-232 for frequency control connect USB to RS-232 adapter cable (Equipment Required item #6b) to the computer and connect the radio interface cable (Equipment Required item #5).
7. Get COM Port settings:
 - a. Right Click on “Computer”.
 - b. Click on “Properties”.
 - c. Click on “Device Manager”.
 - d. Expand “Ports (COM & LPT)” - see Figure 2.
 - e. Record the COM port numbers for the USB Serial Port (RS-232 cable) and the SCS DRAGON 7800.
8. In Winlink Express:
 - a. Open Session “Pactor Winlink”.
 - b. Click on “Settings”.
 - i. If using the USB interface on the Pactor modem, under “TNC Setup”:
 1. Select TNC Type as “PTC-DR7800”.
 2. Select TNC Serial Port per step 7e. See Figure 3A.
 3. Set TNC Serial Port Baud Rate to “115200”.
 4. Set PSK Level to “300”. (See Note #3).
 5. Set FSK Level to “300”. (See Note #3).
 6. Check “Use AES encryption” only if on non-Amateur frequencies (see Note #5). Encryption CAN NOT be used on Amateur frequencies.
 7. Click “Update”.
 - ii. If using the Ethernet interface on the Pactor modem as described on page 67 of the *DR-7X00 Installation Guide*. Under “TNC Setup”:
 1. Select TNC Type as “PTC-DR7800”.
 2. Select TNC Serial Port to “TCP/IP.” See Figure 3B.
 3. Set IP Address of Pactor Modem. Default is 192.168.0.100
 4. Set IP Port (typically 3000).
 5. Set PSK Level to “300”. (See Note #3).
 6. Set FSK Level to “300”. (See Note #3).

7. If you have an AES-256 Registration Key for your DR-7800, check “Use AES encryption” only if on non-Amateur frequencies (see Note #5). Encryption CAN NOT be used on Amateur frequencies.
8. Click “Update”.
- iii. Under “Radio Setup”:
 1. Select Radio Model “CODAN”.
 2. Check CODAN login and optional password
 3. Check Enable ALE scanning after session completes.
 4. Run the VCOM Configuration program to find the Com port used for CICS (CODAN computer interface command system) – see Figure 4.
 5. Enter this Com port number at “Serial Port to Use” - see Figure 5.
 6. Select Baud as “115200”.
 7. Uncheck “Enable RTS” and uncheck “Enable DTR”.
 8. Click “Update”.

Radio Configuration: Using the program TPS.

1. Connect to the radio. (Via USB cable using IP Address of 192.168.234.1 or LAN using IP Address of 192.168.0.248 depending on your configuration).
2. Read the radio configuration and save it as a backup.
3. Peripherals tab. See Figure 6.
 - a. RFU GP Port (15-pin connector) configuration.
 - i. Select “Generic Modem”. See Figure 7.
 1. Set RFU GP Port “RFU Quiet Line” to “Disabled”. See Figure 7.
 - b. RFU 6way configuration:
 - i. Select “None” unless you have a GPS unit, then select “GPS”. See Figure 6.
4. Save the file.
5. Program the radio.

Note #1:

The radio needs the “15-10618 Option, Free Tune TX” sales option enabled. There is no charge for this option to be enabled.

Note #2:

Cables may be available from Farallon Electronics. Contact Gary Wood at garywood@farallon.us telephone 1-415-331-1924 X-112. Make sure to use the “CODAN to DR-7800” drawing as a reference.

Note #3:

The FSK and PSK levels should be set so that there is a minimum of ALC during transmission. Since there is no ALC indication on the console or handset, you can set these levels so that the transmit bar levels do not quite go to the maximum.

Note #4:

Best results are obtained by setting the computer LAN interface for a static address of 192.168.0.xxx. It is also possible to use Wi-Fi and multiple computers to ‘talk’ to the radio and use the Virtual Console program (Figure 10) for both Receive and Transmit. There is also an App for both Apple and Android Cell Phones called “CODAN XTEND”. (Figure 11)

Note #5:

Non-Amateur frequencies include those used by SHARES; other Federal government agencies; and FCC-licensed government, business, and industrial stations.

Jim Price KO6GM

Communications Center Operations Officer
Communications Reserve Unit
hjamesprice@gmail.com
W: 916-845-8624
C: 503-577-1152

Lee Rominger W6LFR

Communications Center Manager
Communications Reserve Unit
leerominger@gmail.com
W: (916) 845-8621
C: (916) 208-7087

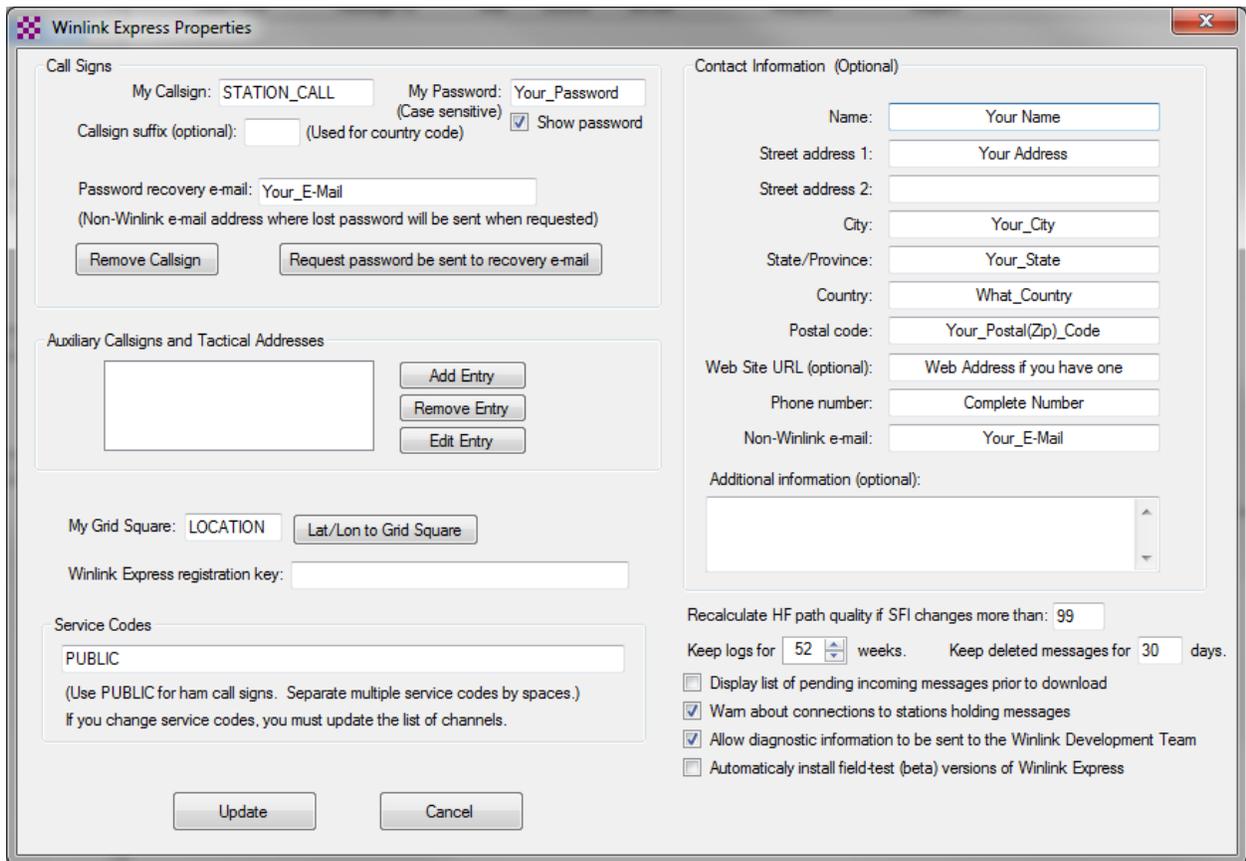


Figure 1

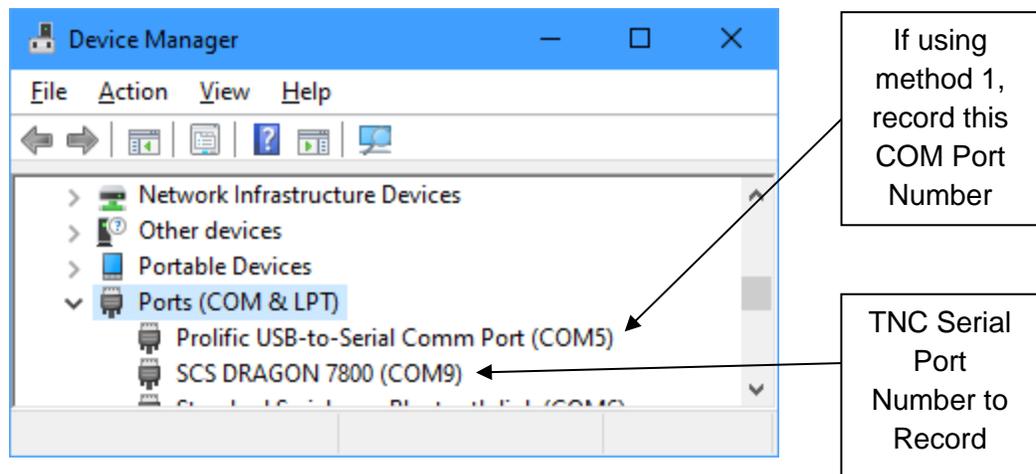


Figure 2

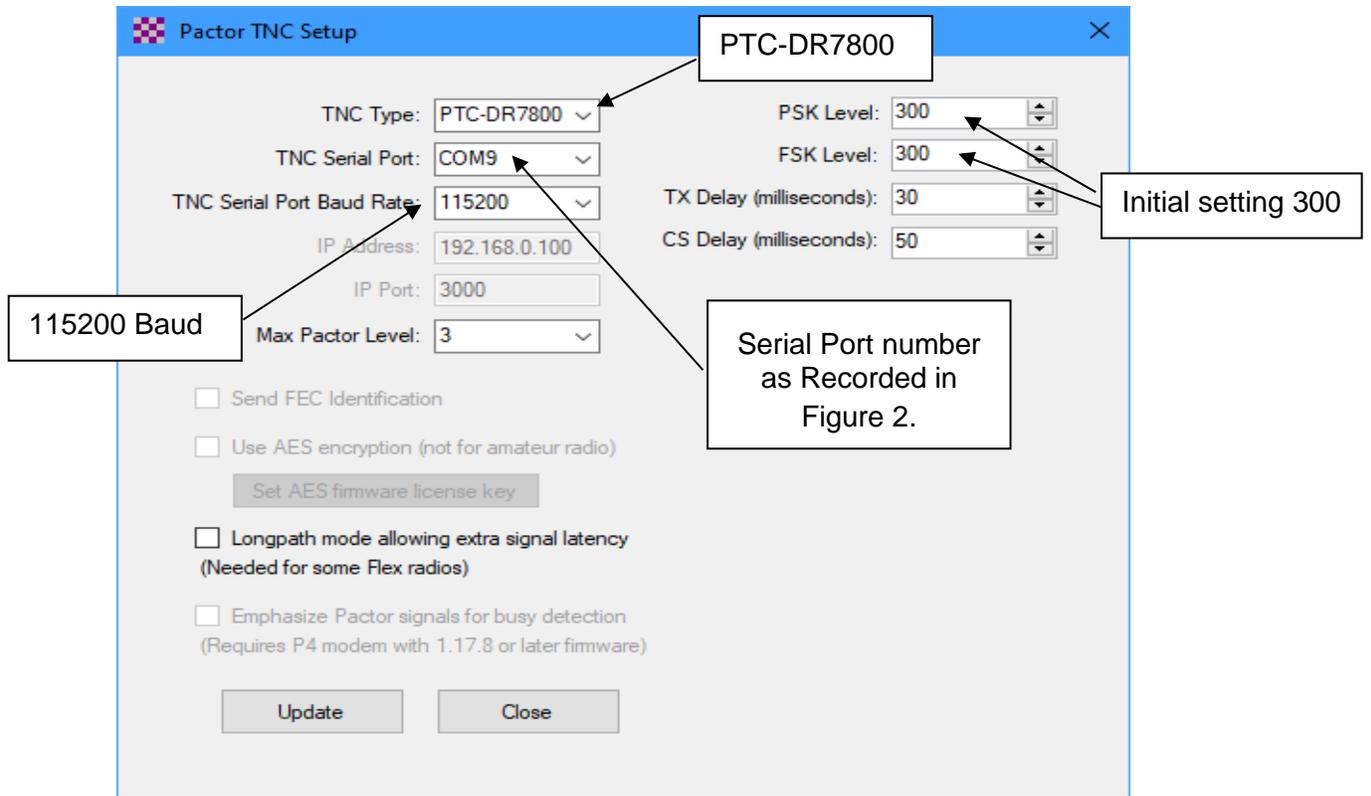


Figure 3A

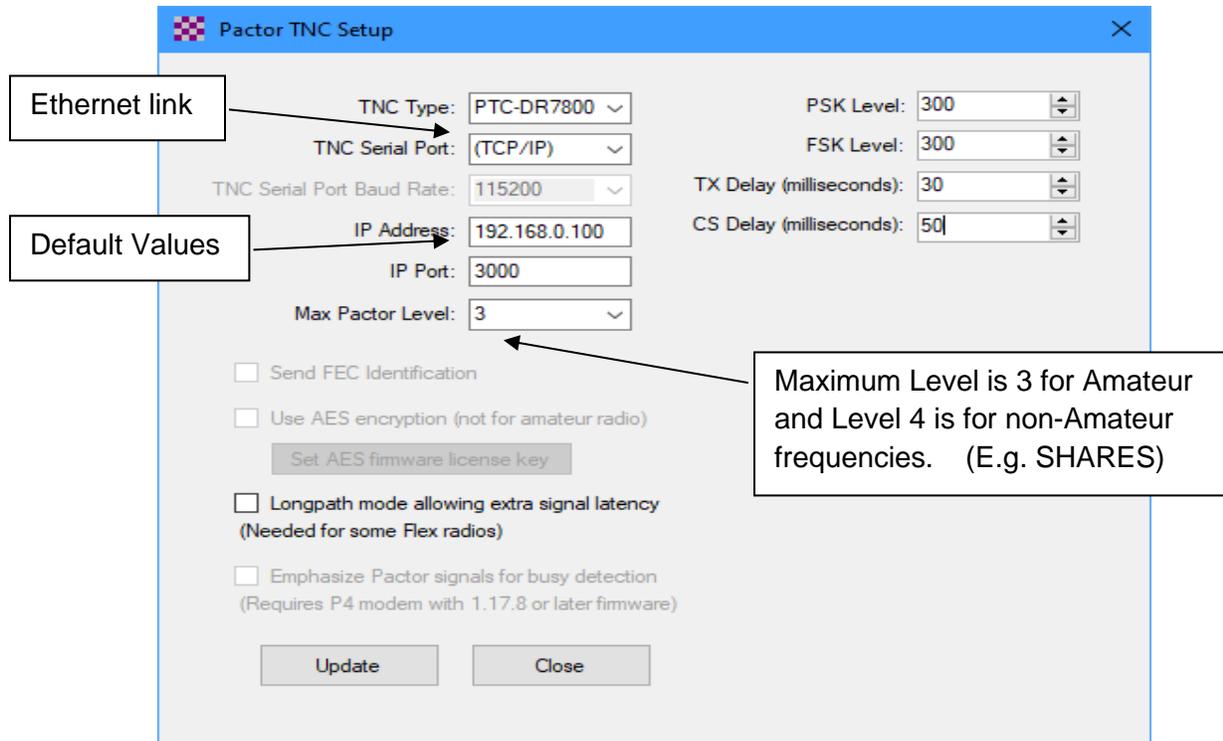


Figure 3B

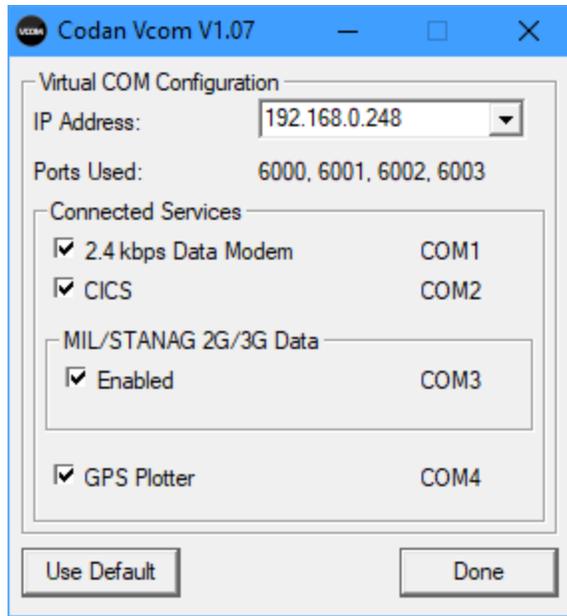


Figure 4

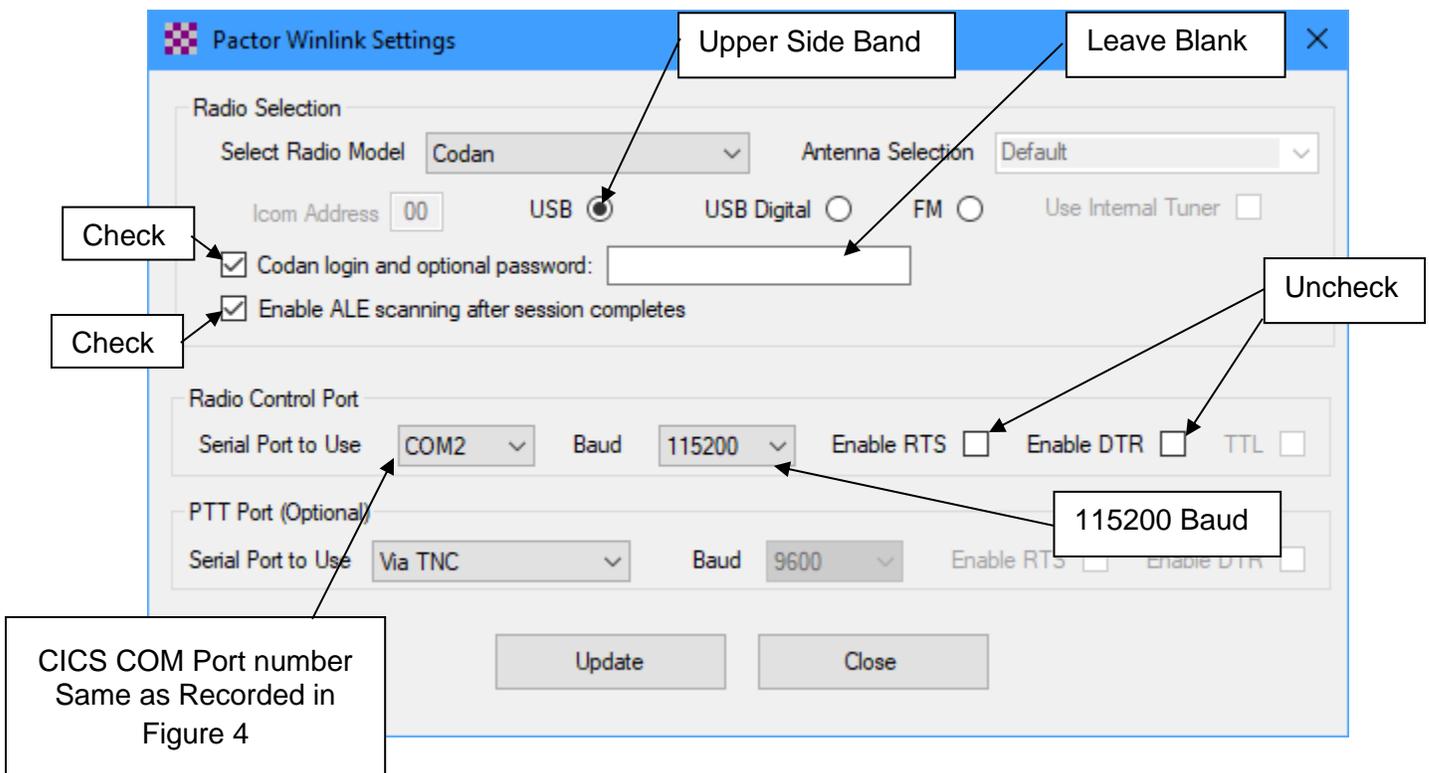


Figure 5

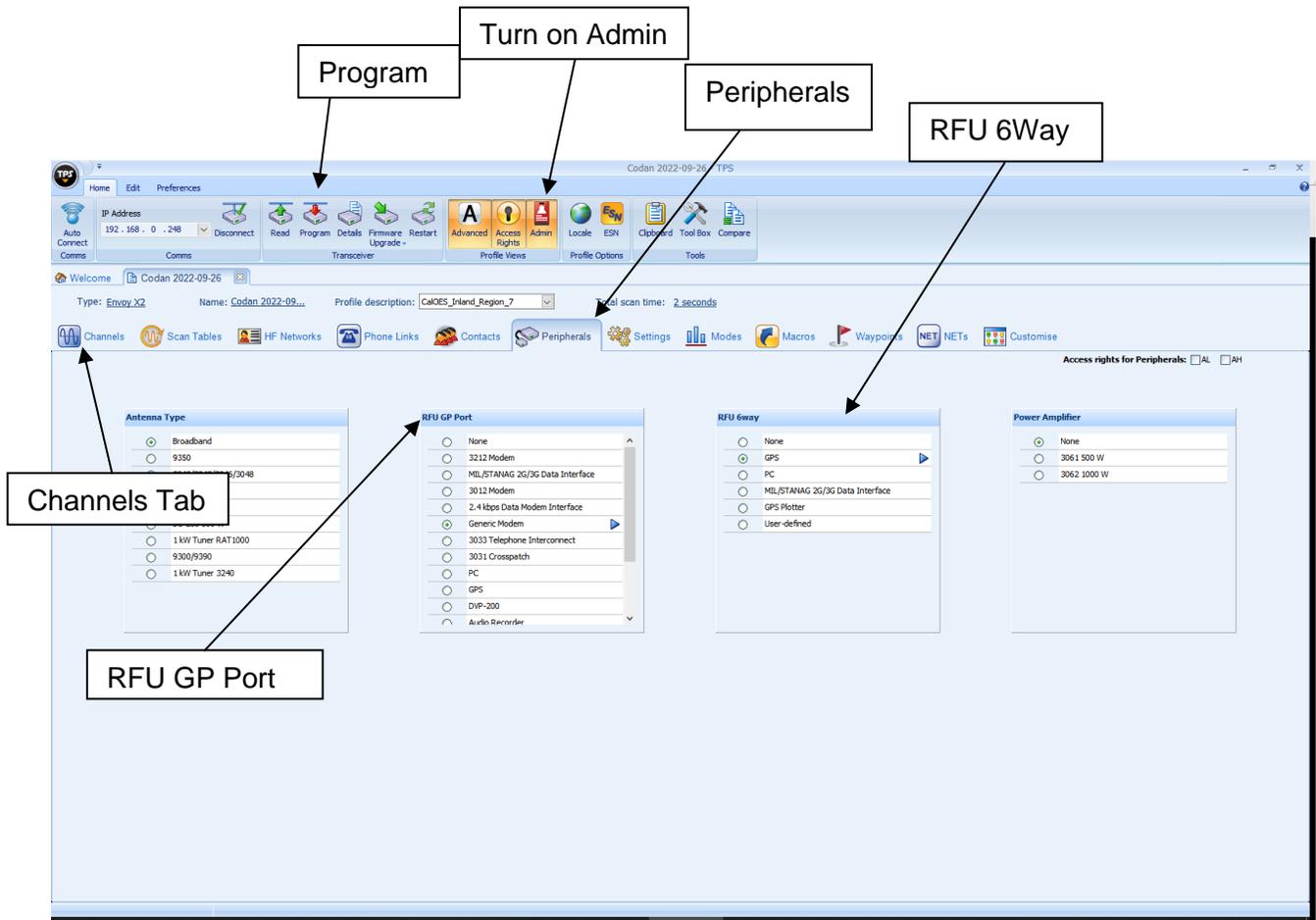


Figure 6

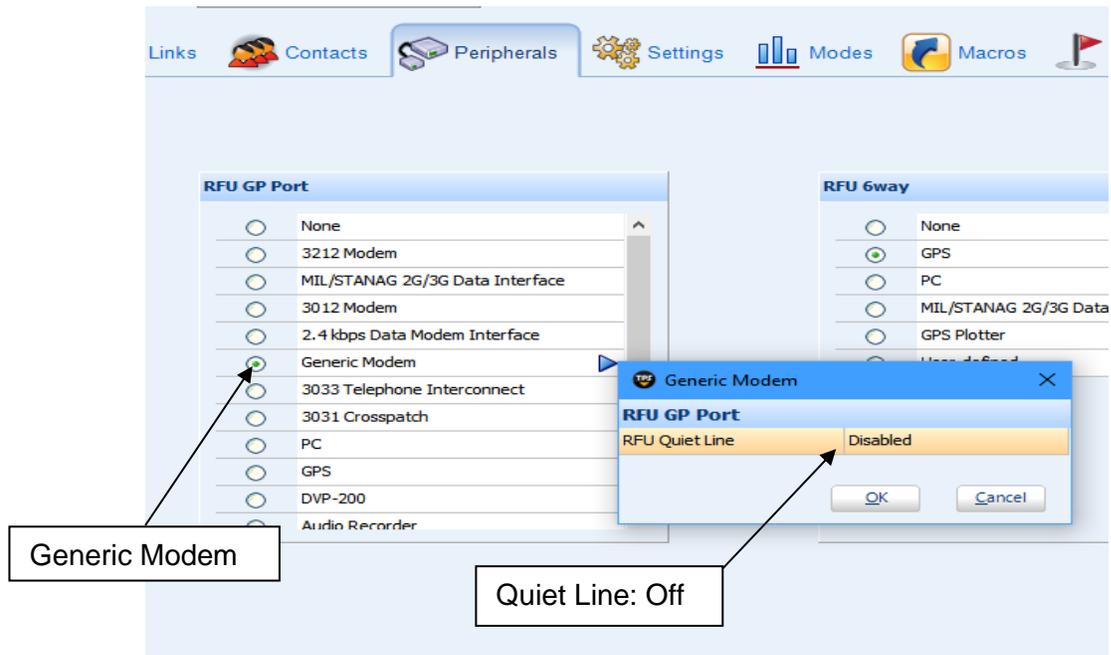


Figure 7

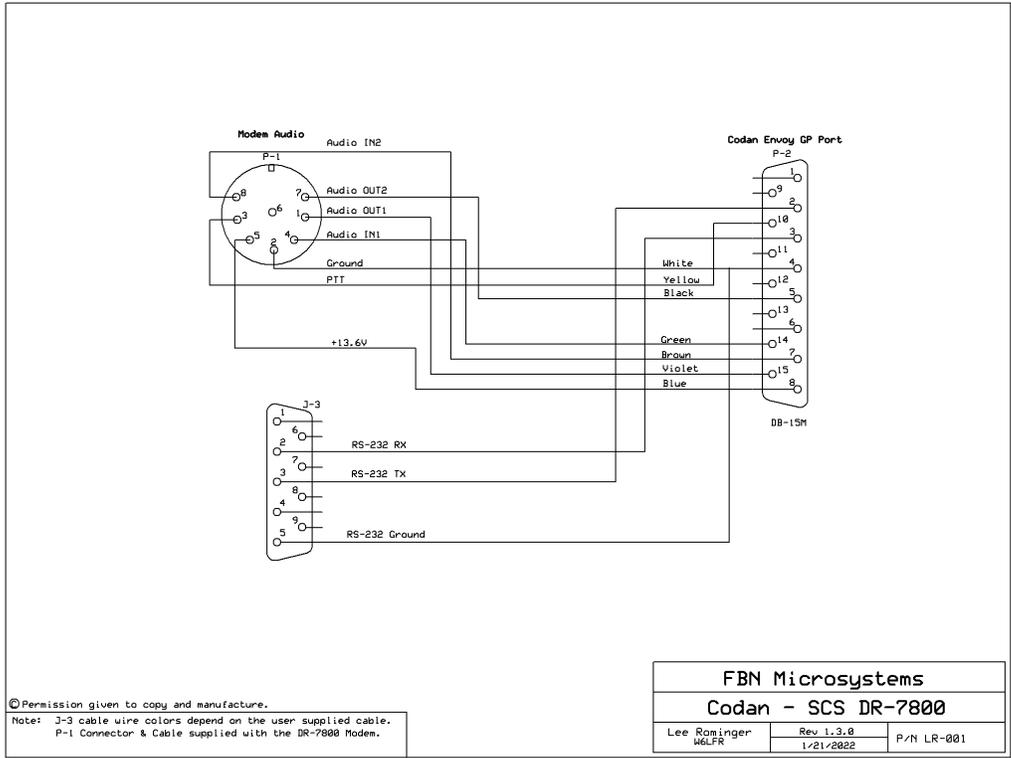


Figure 8

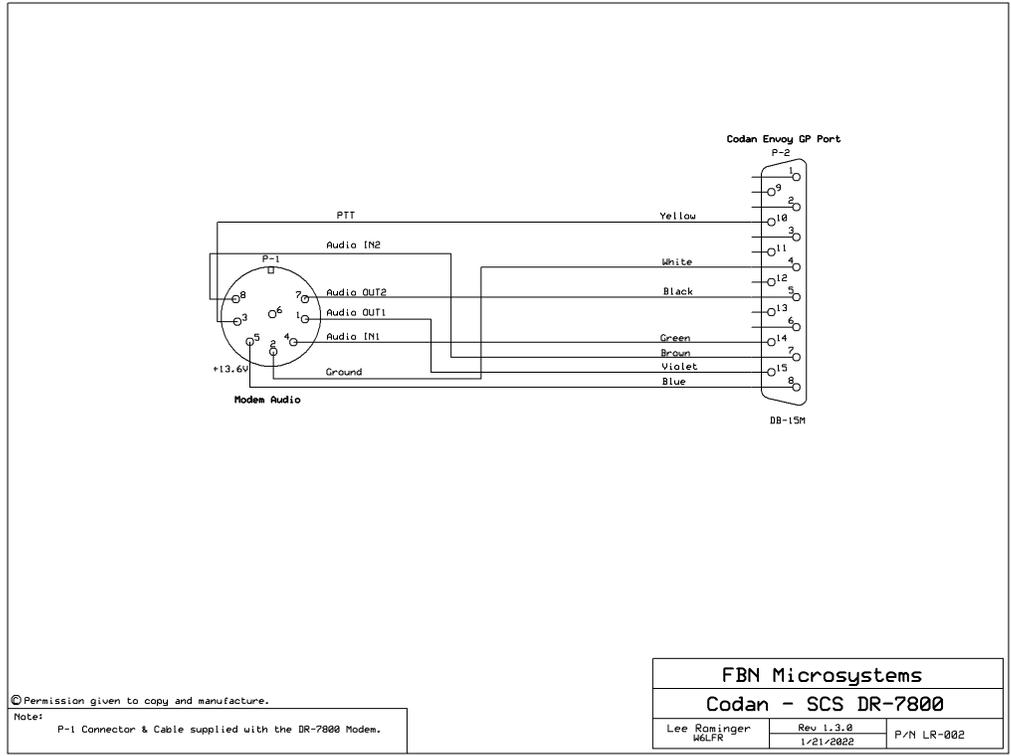
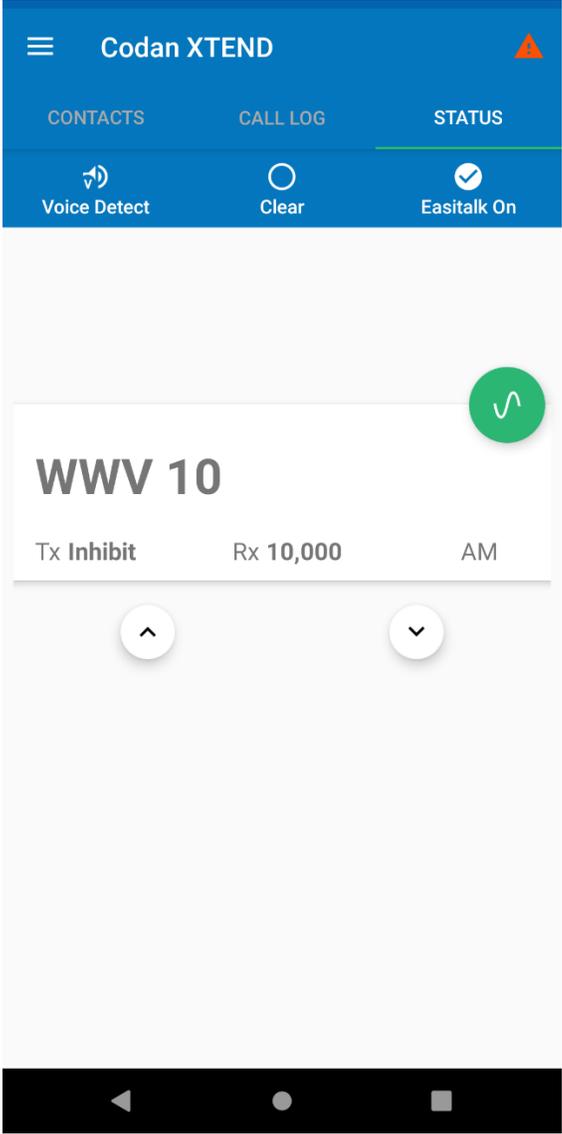


Figure 9



Figure 10



Example of the Cell Phone App.
Figure 11