

How to operate Packet using a SignalLink Integrated Sound Card

By Asa Jay Laughton – W7TSC - 2018 12 09

Packet operations using a terminal program like PuTTY, TeraTerm, HyperTerminal or similar programs is relatively easy, if you are using a hardware TNC that contains firmware already structured for Packet radio. In that instance, sending commands via a terminal program such as PuTTY to the TNC results in proper operation of the TNC to send data to a radio for transmitting your requests over-the-air. However, the SignalLink Integrated Sound Card doesn't have the same built-in features of hardware TNCs, like the Kantronics KPC3+ and other models.

To overcome this, an operator must use both an intermediate software sound card application, and a suitable terminal program built for doing packet communications using the intermediate software. This article will cover intermediate sound card software options, and terminal application options that will help an operator be successful using a SignalLink Integrated Sound Card. These configurations should also work for other integrated sound interfaces or when using the built-in sound system of a computer.

Intermediate sound card software

Most operators who have used the Winlink Global Radio Email system with applications such as Winlink Express, Paclink, AirMail, etc. may already be familiar with how to setup and operate a SignalLink with those applications. They would typically use one of two intermediate pieces of software: AGW Packet engine or UZ7HO SoundModem. Other options such as DireWolf are also available.

This article will focus on the use of UZ7HO SoundModem, which can be obtained by going to <http://uz7.ho.ua/packetradio.htm> and scrolling to the file downloads section. As of this writing, SoundModem v1.00b is the latest version.

SoundModem is a single executable file and can be installed anywhere on your computer. After putting the file where you want, it's recommended you create a desktop shortcut or menu link to the application so it's easy to start up. Note that Soundmodem will create a .ini configuration file in the same directory as the program after its first use.

If you have a SignalLink already and have used it for connecting to the Winlink system, you probably already have SoundModem installed and configured. If not, here is a quick setup guide. Please note a User Guide for SoundModem (in PDF) is available on the same web site as the software download.

1. Start the SoundModem application
2. Click on Settings > Devices
3. Set the Output device to the Speakers for the USB Audio CODEC of your SignalLink
4. Set the Input device to the Microphone for the USB Audio CODEC of your SignalLink
5. Set other options as needed; refer to the User Guide for SoundModem
6. Enable AGWPE Server Port on 8000
7. Enable KISS Server Port 8100
8. Click on [OK] when finished

Note: Both Server ports may be enabled at the same time, this will allow coverage of multiple setups. Also, the Color waterfall may consume a lot of resources and you may wish to uncheck that setting.

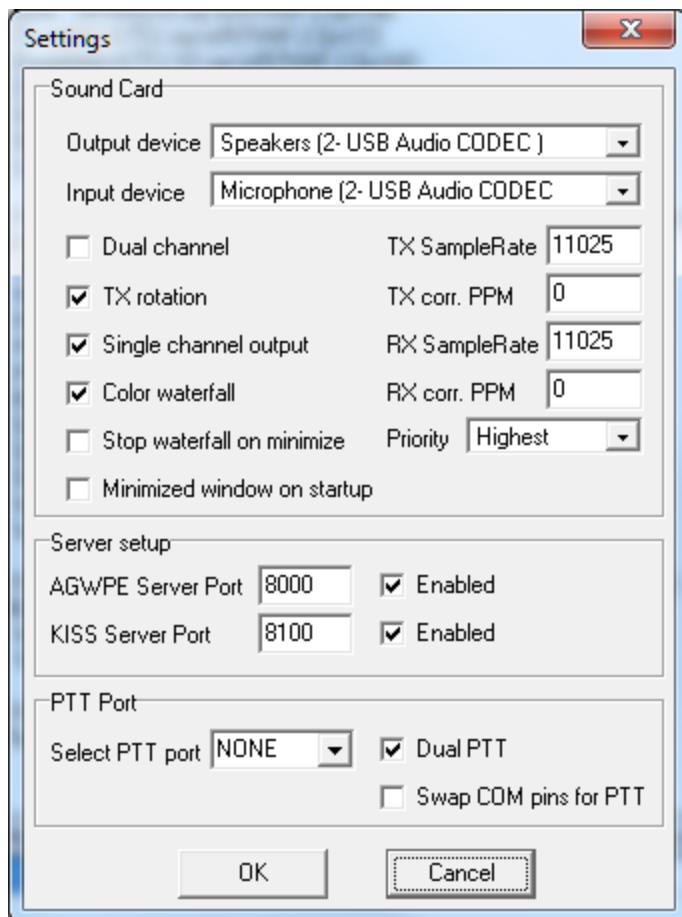


Figure 1 - SoundModem "Device" settings

Next, in the SoundModem application

1. Click on Settings > Modems
2. Set Modem type ch: A > Mode to AFSK AX.25 1200bd
3. Set all other options as needed; refer to the User Guide for SoundModem
4. Click on [Ok] when finished

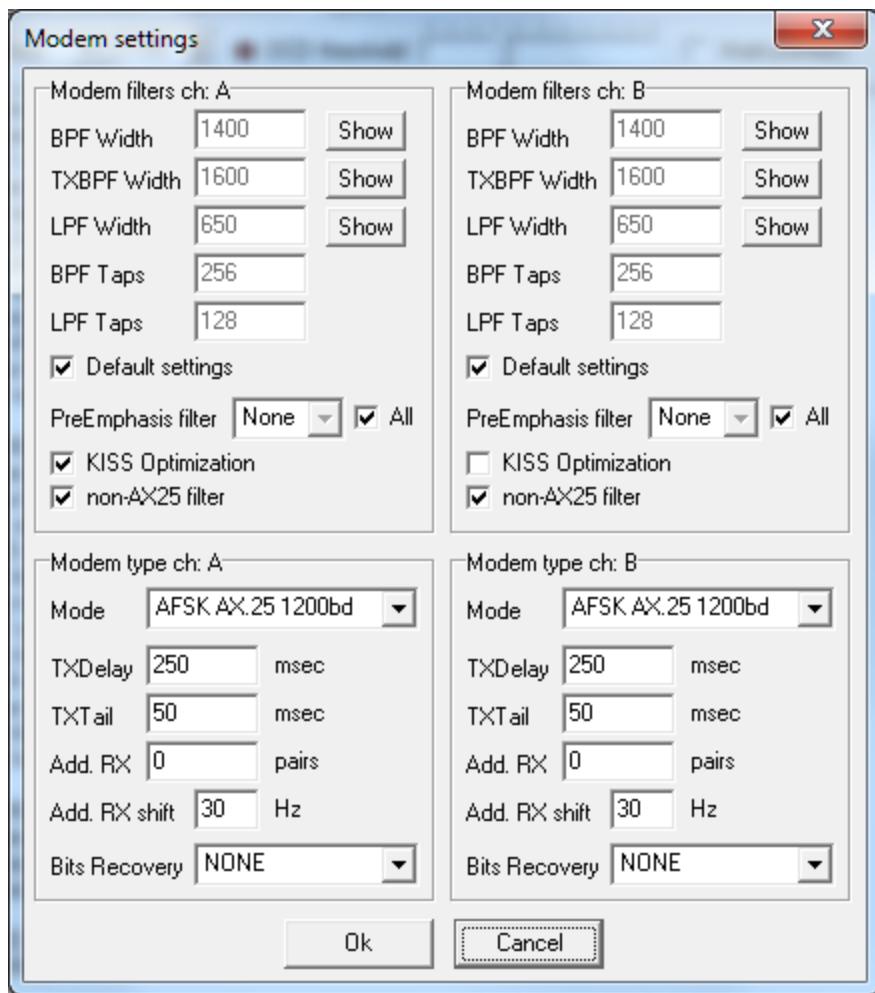


Figure 2 - SoundModem "Modems" settings

SoundModem should now be ready for operation with the SignaLink, but it needs a terminal program so the operator can send commands for packet.

Terminal Program

When using something like Winlink Express to operate the SignaLink for sending and receiving email on the Winlink message system, the Winlink Express application sends all necessary information through the SoundModem application to the SignaLink that allows it to properly operate with a radio. Using a terminal program like PuTTY does not include the extra "smarts" to properly operate packet, at least not that this author has found.

For example, if using a terminal program like PuTTY with a Kantronics KPC3+ hardware TNC, at the terminal command line an operator would send **C WR7VHF-3** and hit **[Enter]** (or Return). The KPC3+ would process the command, key the radio and send the data. When trying the same command in PuTTY to SoundModem, (e.g. directly to the SignaLink), nothing happens; SoundModem or the SignaLink doesn't know what to do other than to simply pass the text.

A suitable terminal program is needed. Two such programs are AGWTerminal by SV2AGW, or EasyTerm by UZ7HO. For this article, we will focus on EasyTerm. This author favors using tools by the same developer in a (perhaps mis-guided) belief they are made to work together.

UZ7HO's EasyTerm can be downloaded from <http://uz7.ho.ua/packetradio.htm> and scrolling to the file downloads section. As of this writing, EasyTerm v0.41b is the latest version.

EasyTerm is a group of files that can be extracted and placed anywhere on your computer. It doesn't run an installer. After putting the files where you want, it's recommended you create a desktop shortcut or menu link to the application's .exe file so it's easy to start up. Note that EasyTerm will create a .ini configuration file in the same directory as the program after its first use.

The following is a quick guide on setting up and using EasyTerm to conduct packet communications.

1. Start EasyTerm
2. Click on Settings > Station Setup
3. Change the Terminal Callsign to your call
4. Under TNC Setup, set Host to 127.0.0.1 (the localhost port for SoundModem)
5. Set Port to 8000 (the AGWPE Server port)
6. All other setting may be left default

Note: Documentation for EasyTerm is sparse and might be found written by others who have worked with it, and located on web sites not associated with the EasyTerm developer.

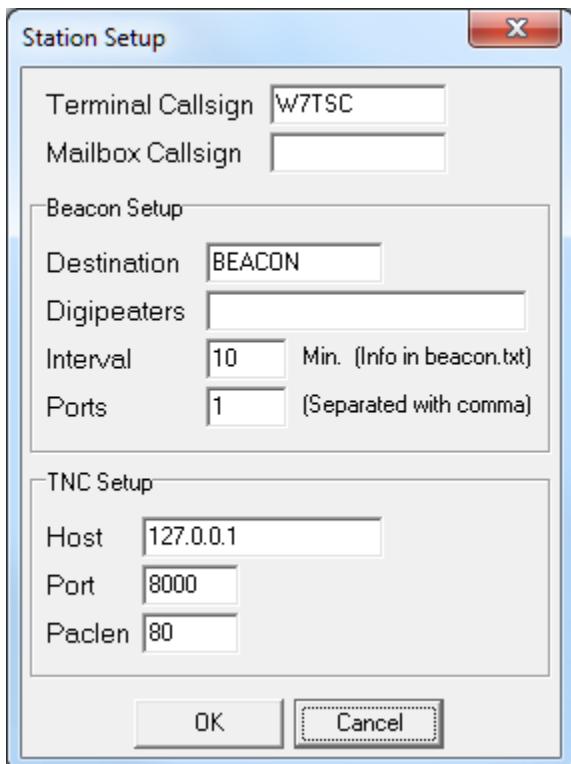


Figure 3 - EasyTerm "Station Setup" settings

With the SignaLink connected to both the operator computer and the operator radio, it's time to make a connection.

From EasyTerm

1. Select [Connect] from the icons across the top
2. Make sure your call sign is in the CallFrom: box (it should be if you did Station Setup properly)
3. In the CallTo: box, enter the call sign of the station you are calling
4. If you are going through a digipeater, enter that in the Digipeaters box (multiple digipeaters may be entered by using a comma separator)
5. In Radio Ports, you should see the SoundModem channel A port and it should already be selected
6. Once finished, click [Connect]

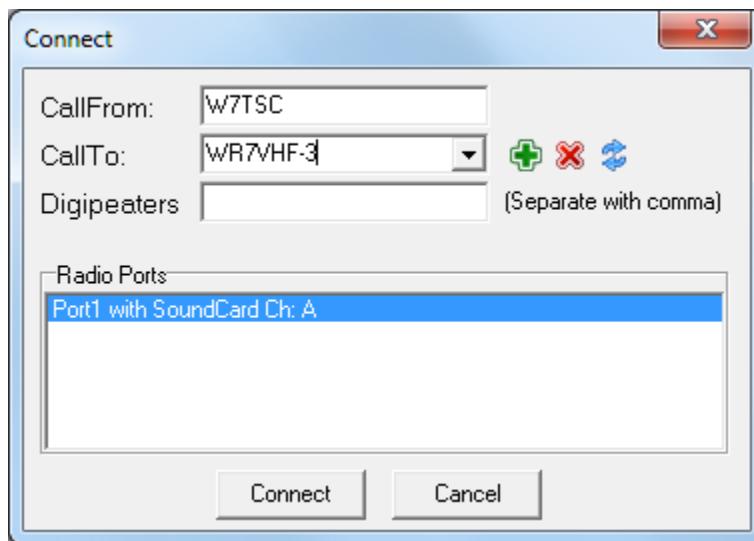


Figure 4 - EasyTerm "Connect" dialog

Below is an example of a quick session from W7TSC to WR7VHF-3. Once connected, "mheard" was typed in the command box (center of main display where it says "Type Commands here" in my example).

Note: Once connected, you can continue to connect to other stations using the standard Packet commands through the text-typing interface.

A quick overview of the main screen:

- The top part of the screen echoes the commands I've typed as well as showing the data back from the distant end, WR7VHF-3 in this case
- The center section is where you type commands
- The bottom window shows the communication stream to and from my radio. This is the same data you would see in the SoundModem window

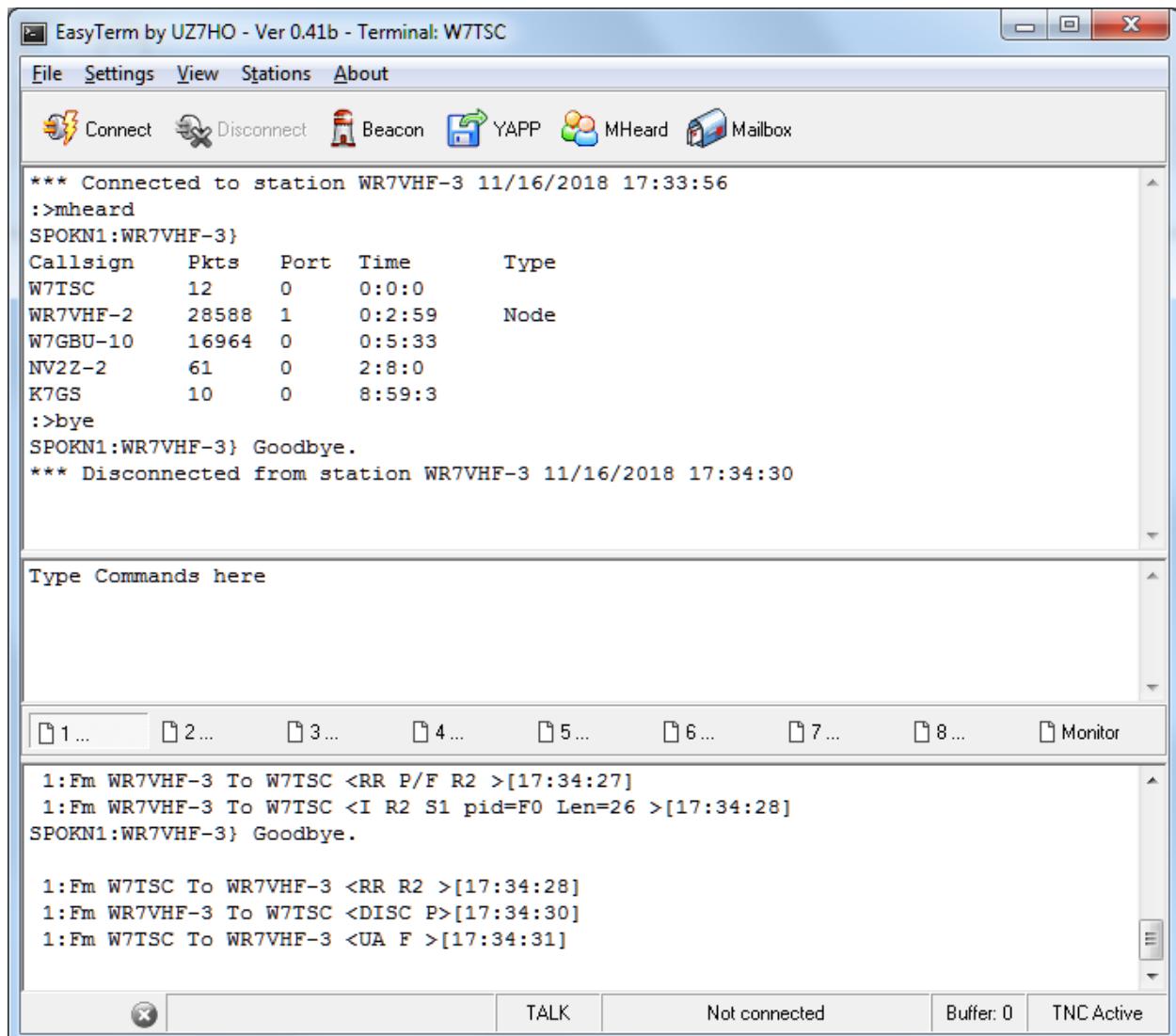


Figure 5 - EasyTerm main window with three parts

On the next page is the same session when viewed from the SoundModem window.

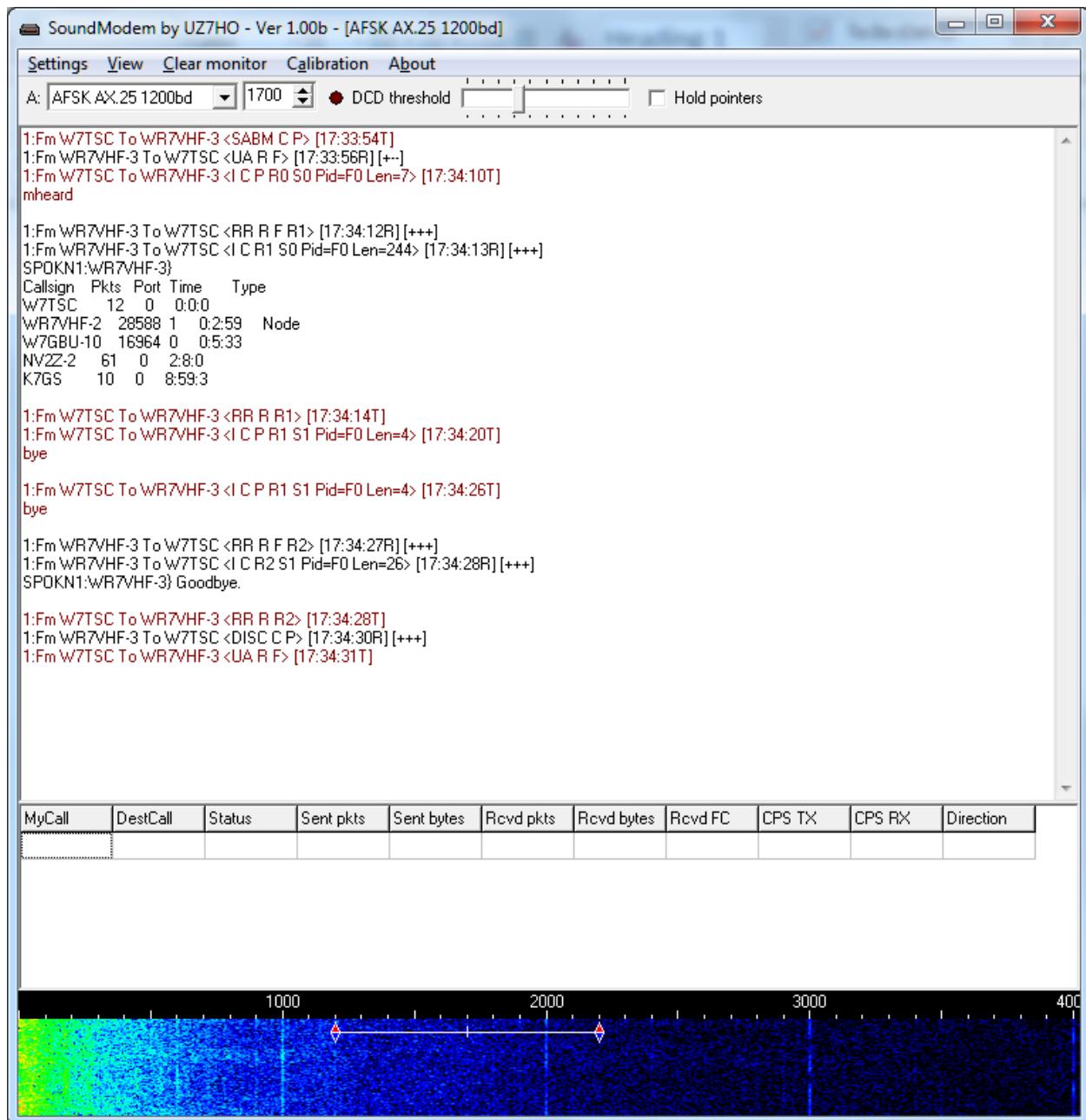


Figure 6 - SoundModem main window

This article has quickly illustrated how to setup UZ7HO SoundModem and EasyTerm in order to do AX.25 Packet with a SignaLink Integrated Sound Card. An operator might also setup AGWTerminal with SoundModem or install AGW Packet Engine and AGWTerminal. There may be other combinations available as well. The key appears to be using a terminal program that is specifically made for doing packet communications via a software soundmodem, when using a SignaLink.

Download References:

UZ7HO SoundModem web site: <http://uz7.ho.ua/packetradio.htm>

UZ7HO SoundModem v1.00b: http://uz7.ho.ua/modem_beta/soundmodem100.zip

UZ7HO EasyTerm v0.41b: <http://uz7.ho.ua/apps/easyterm41.zip>

UZ7HO SoundModem User Guide (English): http://uz7.ho.ua/modem_beta/user_guide_v045b_EN.pdf

AGW Packet software: <https://www.sv2agw.com/ham/packet.htm>

AGWTerminal: <https://www.sv2agw.com/ham/agwterm.htm>