Beginning Winlink2000 : TNC or Soundcard Interface - Which Should You Use?   By John KM4EJE   March 2016

When you set up your Winlink radio e-mail station, you must use either a TNC (Terminal Node Controller), or a "soundcard interface" to connect your computer to your radio. Both are small external boxes with cables. Their purpose is to convert the digital computer data into analog audio signals that your radio can transmit and receive. Which is better, and how much do they cost? A TNC costs $200 - $1200 or more, depending on the speed and capability. A good TNC can operate at much higher speeds than a soundcard interface, to send and receive messages faster, and many have advanced features. A soundcard interface costs about $100, and is "plenty fast enough" for beginners. I personally bought a popular soundcard interface, (the Tigertronics.com SignaLink USB), and I am very happy with it. Other soundcard interfaces, such as the Rigblaster are also available. I will now be talking about my soundcard interface experience.

What's the difference?

A TNC is more expensive than a soundcard interface because it contains internal microprocessor chips that do all the digital to analog converting that I mentioned earlier. This "heavy signal processing" program is permanently burned into these chips, allowing them to operate very fast and efficiently. By contrast, a soundcard interface does not do any of this "heavy signal processing", that work is done by a "sub-program" that you must run on your computer when using a soundcard interface. (Modern computers can do this well, 20 years ago you *had* to use a TNC). It should be noted that all computers have a soundcard inside them. However, an external soundcard interface is

used because its signal isolation circuits prevent the noisy RF interference in the computer from getting into the radio, it has level adjustment controls and indicator lights to display its status, and usually comes with all the cables needed.

Let's sidetrack here for a moment to be sure we understand what the RMS Express software is used for. When we use the Winlink2000 system to send e-mails, we use the free software called RMS Express. This is the "user interface", where we sit at our computers and compose, read, send and receive Winlink e-mails. We use RMS Express with both TNC's and soundcard interfaces. We use RMS Express whether communicating on UHF/VHF, HF, or internet only. (RMS Express has an older and now outdated version called Airmail, and some long time Winlink users still use this, but you should not).

So, you've purchased your soundcard interface and have connected it between your computer and radio. As I mentioned earlier, you will need a "sub-program" on your computer to do all the "heavy signal processing". (Remember, a TNC already contains this "sub-program" on its chips). What is this "sub-program" and how do you get it? I chose a very popular and free program called "AGW Express Interface", from http://w2ygsoftware.com/Home/AGWE. It was easy to download and install, and it is designed to interface with our RMS Express software. When I want to use my Winlink system, I just open my "AGW Express Interface" icon, it loads in the background and then asks me if I want to now open RMS Express, and I click yes and am ready to go. (The AGW Express Interface consists of a "packet processing engine" and "virtual port", which are the "sub-programs" that do the "heavy signal processing").

Is it really that easy? Yes and no. Yes, it is now very easy for me to use the Winlink system with my radios. I click an icon on my computer and the software starts. It works perfectly every time. (Unless I do something stupid.) My soundcard interface works perfectly every time. (Unless I do something else stupid). Setting up the software for the first time was a little tricky for me, as I am not a computer technician. This will likely be the hardest part for you too. You must first tell your computer that you will be using an external soundcard interface, called a "USB Codec". You do this by going into the Windows control panel and selecting sound card device configuration, USB Codec. I can't give exact steps here, it depends on your computer and Windows version, details and help are available online at the site I mentioned. Also, you must configure RMS Express to tell it you will be using a soundcard interface. You also have to tell the AGW Express Interface software that you will be using a soundcard interface. Lastly, you must tell all the software which computer ports you will be using and what the proper baud rates are. However, *don't be afraid or discouraged!* You will only have to do this once. Other hams will be happy to help you, and many online tutorials and videos are at the previously mentioned website. (More sites are linked out of Winlink2000.org, and also explore the Tigertronics.com pages). Be aware that many internet articles are old and obsolete! As I said, once setup, my Winlink station works easily and perfectly. Look at the pics at the end of this article to see some of my configuration settings.

FYI Tips and Must-Knows: You can start using the Winlink2000 system today by simply downloading RMS Express and sending e-mails using the internet; no radios, TNC, soundcard interface or other software needed. (In RMS Express click on the help menu, it's great).

You must register with the Winlink people and receive a password, this is to confirm that you are a licensed ham and not just some internet riff-raff who will be triggering radios all over the world without a license.

Generally speaking: when you connect your radio(s) with a *soundcard interface* you will operate on VHF/UHF using the " Packet Winlink" mode in RMS Express. You will operate on HF using the "Winmore Winlink" mode in RMS Express. When you connect your radio(s) using a *TNC*, you will operate on VHF/UHF using the "Packet Winlink" mode of RMS Express. You will operate on HF using the "Pactor Winlink" mode of RMS Express. For an internet only connection you use the Telenet Winlink mode. This is very easy to understand once you try it.

Good luck, I believe every ham should be familiar with Winlink2000.

P.S. A soundcard interface or TNC will allow you to use most of the digital modes available in amateur radio, and that software is free too!

73, John KM4EJE