

How Digital Modes Work

The Interface:

An interface has only one job to do: to allow the computer to toggle the radio between transmit and receive. At a very basic level, an interface can achieve this by using a signal from the computer to switch on a transistor, this transistor "conducts" and brings the transceiver's PTT(push to talk) line to ground potential or close to it. When the PTT line is grounded , the transceiver switches to transmit.

The interface can be built-in to the transceiver or part of an external device that combines the "interface" with a "soundcard" such as a Signalink, Digital Radio Adaptor (DRA) , Digirig and others.

The Sound Card:

The sound device is critical for digital operation because most of the modes we use depend on sound devices to function as radio modems-modulators/demodulators.

The audio from your radio enters your computer via the sound device where it is converted (demodulated)to digital data for processing by your software. (Fldigi, FT8, Winlink etc) The results are words or images on your computer monitor.

When you transmit, this same sound device takes the data from

your software , such as the words you are typing and converts it to shifting audio tones, this conversion is a form of modulation .

These tones are applied to your radio for transmisson

This article is from "Getting On the Air With HF Digital by Steve Ford published by the ARRL. The book title uses HF but the above info applies to UHF/VHF as well. I highly recommend this book available from ARRL or major suppliers of Ham Radio equipment.

73, Frank N3FLL n3fll@arrl.net