DATA INTERFACE NOTES

There has been a tiny bit of interest in my earlier comments on 'Data modes made easy'. I have therefore written these brief notes hopefully to assist those who may wish to start using data modes, both simply and cheaply. I am not going to expand on all the technical aspects of data modes as these are very adequately covered by numerous authors on the internet, what I hope to do is give a simple explanation of what I have put into practice over many years.

The simple method I describe here makes use of the radio microphone socket and not the radio accessories socket. Those who wish to use the accessories socket will find descriptions of how to set up this method of connection and will no doubt find full instructions in the manual. This equally simple method does, however, usually require some changes to the menus of modern radios.

I intend to look at two aspects - namely the software and the computer/radio interface.

Software

There are many freeware programs but the basics include setting up personal details, setting the soundcard as the default and writing the macros. This will be a voyage of discovery and I will not comment further because of the vast number of programs available. The initials RTM (Read The Manual) come to the fore.

I would suggest that as a start you may wish to look at a very well-supported soundcard program called Fldigi. It has at least 50 variants of data modes, a multi-channel display, easy to use macros and many other features too detailed to include in this brief document. As an example, I also interface it with my logbook, Logger32. Fldigi can be found at:

http://www.w1hkj.com/download.html

Be sure to download the version for your Operating System.

The interface

The interface between radio and computer soundcard requires audio in, audio out and a means of going to transmit.

Audio into the soundcard only requires a PC audio cable between audio out on the radio to the microphone socket or line in socket on the PC/Laptop soundcard. The soundcard audio in level can be varied by either the normal PC/Laptop sound setting or possibly the radio volume control depending on how the radio end of the connection is made.

Audio out of the soundcard to the microphone socket on the radio requires a simply modified PC audio cable and a microphone plug. The following sketch details the minor modification:
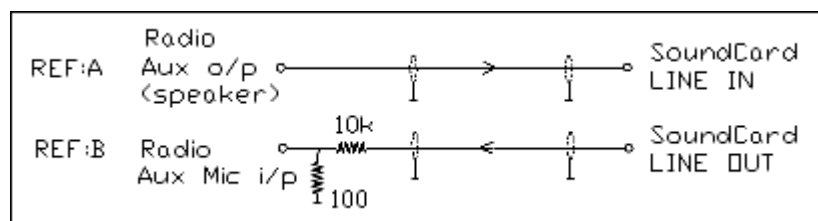
It is very easy to overdrive the transmitted audio levels and the small, two resistor attenuator is a must. The recommended audio out level is an IMD of better than -28db. In other words, keep the level of the transmitted signal below the point where the AGC kicks in for starters. Quite often requests are made during QSO's to check that the signal is clean. In my case these two resistors are fitted inside the microphone plug.

It is very important not to exceed about 30 watts output on the normal 100 watts radios.......!

The next important interface is a means of switching to transmit. As USB is the recognised mode for data transmissions, and as my connection uses the microphone socket on the radio, it is quite feasible to set the radio to VOX. I have never tried this but use a simple, hard-wired PTT method as is depicted in the following sketch:
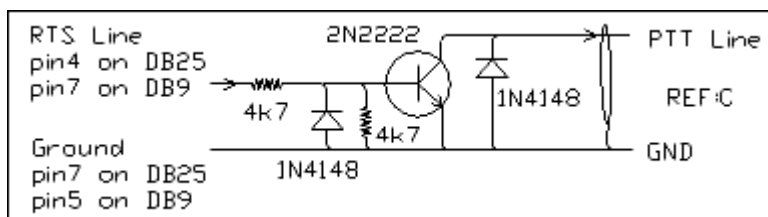
This has been built on a thin strip of Veroboard.

It has been necessary to use a USB-to-Serial adapter to interface with computers that do not have a serial socket.

As there are so many variants of programs, radios and PC/Laptops I do not intend to take this any further.

Sketches by courtesy of theWM2U website:

http://www.qsl.net/wm2u/psk31.html

I set my audio out levels by advancing the radio RF gain on the radio to maximum and slowly advancing the radio microphone gain to any level below where theAGC kicks in. This ensures full control of the transmitted level and also a clean signal without distortion.

Finally, for those of you who do not wish to go to such lengths, may I suggest that you look at the Tigertronic's USB SignaLink external soundcard. Everything in one box.

Thank you for your interest and please feel free to contact me by email if you have a specific question.

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