HF Digital Tips:  draft version 5/10/20  KC2WI SEC NNY

What is the correct frequency?

"Digital" frequencies may be specified either by the *Radio's Dial Frequency* or the *actual Signal Center Frequency*. If the specified frequency is the Dial Frequency, the audio offset may or may not also be specified.

If the only information you are given is a frequency, you really don't know for sure which it is.

Fldigi works by sending sending audio tones to modulate the radio. Exactly like SSB voice. By convention, ALL digital transmissions use USB, so if the frequency of the modulating signal is 1500 HZ, then the actual transmitted frequency is 1500 Hz (1.5KHz)  above the radio's dial frequency.

For example, a dial frequency of 3584 Khz (3.584 MHz) with the digital signal positioned at 1500 Hz on the waterfall results in the center frequency of the transmitted signal being 3585.5 KHz (3.585.5 MHz).

If you don't hear/see a signal where you think it should be, look up or down 1 or 2 KHz because you may be looking at a dial frequency when the specified frequency was a signal center frequency, or visa versa.

If you hear/see the signal but can not decode it:

- Check your radio for DSP NR, notch filters, etc. Turn all noise reduction OFF.
- Make sure you are on the right sideband. All HF digital is done on USB. Your radio will default to LSB on 80 and 40M.
- Check the SQL control on fldigi. Set it to minimum or just turn it off to start. Once you get an idea of signal levels you can turn it on and adjust the level using the slider at the right.

Receiving but not Transmitting;

If you are using a digital interface port in the back of the radio (typically a 6 pin mini-DIN connector), or a direct USB connection to radios with built in sound cards (i.e. Icom IC 7200, 7300, etc.) and not the old fashioned way using direct connections to mic and speaker jacks, your radio might need to be put in 'digital mode' in order for it to respond to PTT commands and modulating audio from that connector.

Signal Levels:

- Don't try to adjust the computer's sound card level controls if you don't have to during a QSO or net. It's too easy to screw up some setting on the computer.
- If the incoming signal is too strong, just click in your radio's RF attenuator or turn down your RF gain.
- The easy way to adjust drive/RF power is by using the fldigi TX power control at the bottom towards the right . Clicking the double arrows changes the audio output in 1dB steps. This is much easier than screwing around with the radio's RF power, mic gain, or other controls, which you then have to remember to reset later.
- Obviously if you have a Signalink or other slick interface with level controls you can use those.
- Try not to drive your transmitter to more than 50% power out. Most advice is to also turn the radio's TX compression off but I find it is not necessary if you keep the drive low enough.

Acoustic Coupling and VOX:

A hard-wired interface is highly recommended for HF digital. Acoustic coupling will work OK for getting audio in to and out of the radio but you may find actual operation difficult because you will have manually key the radio, then tell fldigi to transmit. To get around this you might get away with using VOX. If you are going to try this, adjust your audio levels and VOX controls before you get on the air and especially before you get in to any training or operational net. A foot switch might help because at least your hands will be free to operate fidigi.

RSID:

Turn your RSID (both TX and RX) on because stations/nets may change modes. If so it will probably be announced but if you miss it,  fldigi will automatically switch if it hears RSID. Note RSID will not work if you are not listening close to the center frequency.

Make your transmitted data stand out:

When you type something to transmit, start with a couple of carriage returns, especially on initial calls or check in. This will separate your transmitted text from the garbage characters that people might be receiving.

Keep transmissions short. Use common abbreviations and prosigns. Just like CW.

de= this is
k= over
kn= over, back to the calling station.
r= roger (means I copied your transmission. Does not mean I agree, etc.)
ar= out
sk= closing station

fb= "fine business" a general positive comment
ur= "your"
etc.

Just like voice, you do not need to send call signs on every transmission. With slow digital modes this can waste a lot of time. Use call signs for clarity if necessary or for legal ID.

There are Q-codes that are used during digital operation. This includes a special set of Q-codes originally used for CW net operation. These save time. For example, It is much faster to transmit QRU? than “do you have any traffic?” Beginning-level training nets won’t use them but they will be used in established nets with experienced operators such as the NY-NBEMS net, so you should have a table of the codes and their meanings.

Uppercase/Lowercase and Typos:

By convention call signs are usually typed uppercase. But especially when you are beginning, don’t sweat using uppercase or lower case when typing. Most experienced users do not use caps lock and type everything uppercase. It is not necessary. Some modes (RTTY and Contestia for example) will convert everything to uppercase because they use limited character set, some will not.

Also don’t worry about correcting typos in keyboard to keyboard exchanges unless they really change the meaning of what you intended to say. If the text has already been sent, just let it go. Obviously in formal messages you would compose the message off-line instead of while transmitting (preferrably using flmsg) and make sure it was perfect before sending.

Transmit while typing to save time:

In keyboard to keyboard chats, you do not have to type your entire message in the transmit window before starting to transmit. Fldigi will TX as you type. Generally you can start composing a reply while the other station is transmitting then start TX while you are finishing up. This can significantly reduce delays between transmissions and total time to complete an exchange, especially on slow modes.

Using Notepad to compose ahead of time, or to save text you want to re-use.

If you have a block of text you would are planning to send you can compose it off-line in Notepad or whatever editor you like instead of in the fldigi TX window, then copy and paste when you want to send.

This can be a real time saver and it can also avoid confusion. Sometimes you want to change what you transmit based on what you just received. If you are pre-typing in the Tx window, then you may have to erase and start over. But if the TX window is clear, you can just type and send, saving in Notepad what you originally planned to send until later.

Using Notepad also allows you to quickly copy, paste, and send the same thing (such as a net call) multiple times. There are other ways to do this, such as using Macros, but creating in Notepad and copying is quick and easy.

Cut , Copy, and Paste: Text editing works the same as in any other application. You can copy text from the RX to the TX window (or to Notepad, etc.) to edit and resend or to save.