

Getting Started with FL-Digi

By Chris Meagher VK2ACD

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FL-DIGI is a free program, available at [this web location](#).

With a suitable computer to transceiver interface, you can operate a wide variety of digital modes.

The things you need to do are:

1. Download and install the program. To begin with, you only need the basic fl-digi program. The extras, such as the very useful fl-msg, can be investigated later on.

2. Buy / build / borrow a suitable interface. I use a Tigertronics Signalink unit.

It can be ordered with a cable made specifically for your model of transceiver.

Very simple to set up, and since it has its own sound card, you can leave your computer's built-in sound card alone to do its usual job.. Some newer transceivers have the sound card interface built in. Otherwise, just Google 'digital interface ham radio' and you'll get a lot of ideas

To begin –

With fl-digi running, go to the top menu bar: Configure – Sound Card and check that you have selected the correct card.

With an external sound card, it should show as “USB Codec”.

With interface connected, tune and adjust your rig to clearly hear background noise.

If your interface has level controls, set them about mid-way.

On the computer, having selected the correct sound card, initially use maximum settings for both input and output.

The method for this will depend on your operating system.

With Windows, use the sound part of Control Panel. I found that the PTT function would not operate unless I put the sound output at maximum.

Important controls that you should check status of, on the main window:

Top-right – RSID buttons for TX and RX. On is **green**. RSID stands for 'Reed-Solomon Identifier'. It transmits a code which precedes the body of your transmission, which tells the receiving station what mode you are using and the frequency offset relative to you.

You don't have to use the ID, but it has the big advantage in that Fl-digi will automatically jump to the received mode if it decodes the ID.

And of course, it works for the person at the other end if you transmit your ID. However, sometimes the program will pick up spurious ID's, and once established on a mode it may be a good idea to turn off the RX ID.

Bottom right – Squelch - the button is **yellow** for on.

To start with, drop the squelch slider (far bottom right) to zero, until the waterfall has been set up.

Don't forget if using SSB to make sure you are on USB – this is the digi convention that most use on all bands. (though technically it doesn't matter as long as both stations are on the same sideband.)

The Waterfall - Refer to the second lowest control bar.

Set the first button to WF, showing the waterfall.

Moving to the right, you can adjust the upper signal level and the signal range.

Adjust these until the general background shows as a darkish blue, and good signals show as a bright yellow.

Very strong signals or overload should make it red. I mostly use settings around minus 8 and 60.

Having set this up, you can raise the squelch slider to stop random text being generated by the background

noise, but conversely, this may also squash a very weak signal at or below the noise that might still have been decoded.

The best setting will depend on who you want to contact and what mode you are using.

Choose x1 for waterfall magnification, until you need more accuracy, eg to tune in a PSK signal, where x4 is helpful. NORM is usually the best waterfall speed to set.

The cursor frequency sets your basic tone offset. I find that 1500 is good as it fits in the middle of the passband of an SSB transceiver.

The LK button will lock your TX frequency offset, but allows you to shift your RX. Very handy if other stations are tending to drag you off frequency.

At the bottom is the AFC button, which will track and lock onto the other stations offset. Next to the AFC is the TX level attenuator. You can use this to fine tune your TX output. I leave it on -3dB. If using VHF/UHF FM, turn the rig squelch up just enough to cut out the noise, and the waterfall should now go black.

You may wish to open the rig squelch in order to copy very weak stations that are at or below the noise.

An important note for TX - turn off any compression or audio filtering, as this may upset the relative levels of digital tones on your transmission.

Useful hint for RX - use width and shift controls on your rig, to narrow the bandwidth to accommodate the digi signal with some room to spare - this can greatly improve the RX signal to noise ration. The use of CW narrow filters is similarly effective, especially for modes like PSK31.

About some of the modes At first, there seems to be an overwhelming choice of modes to use. Depending on your needs, you will probably only need a few favourite modes.

The fl-digi manual gives a very good run down on how to set up each mode.

Olivia is a good mode for HF which has a lot of error-correction (signal path errors – not your keyboard errors!).

Olivia 8-500 is a good starting point (8 = the number of “modulation channels”, 500 is the offset bandwidth.in Hertz. This is a great mode for difficult propagation conditions, eg static.

However, it is slow, which is good for slow typists, however you must be patient, as there is a noticeable delay in encoding and decoding.

Thor 16 is an excellent mode for faster messages and is also robust through noise.

PSK (phase shift keying) is the mode of choice for serious digi DX.

Contacts can be made with low power where phone just can't do it.

It is narrow band and so requires accurate tuning and no TX/RX drift.

Go to the fl-digi VIEW menu and enable the signal browser.

An extra window appears in which the program can decode multiple PSK signals within your RX passband.

Via the menu, you can hide the modes that you don't use from the drop-down list.

For all the answers, download the complete fl-digi manual.