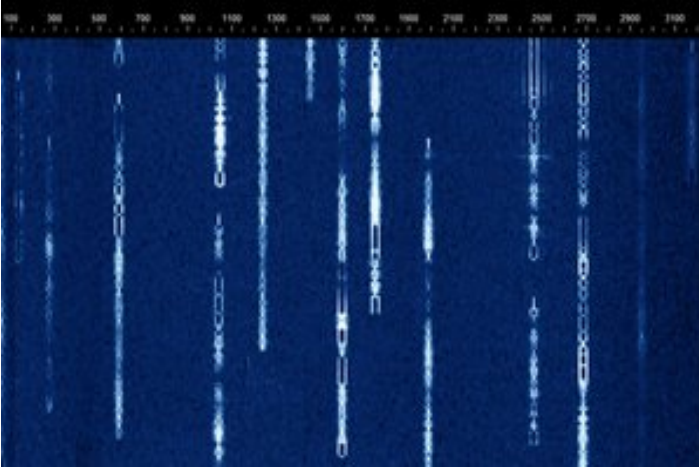


## 10 Tips for the PSK31 Digital Mode



*PSK31 is arguably the most popular amateur radio digital mode. It utilized phase-shift-keying to provide robust, narrow signal width communications, and requires very little power to QSO the world!*

- Use the center of your waterfall. Testing will show that your transmit (TX) and receive (RX) will be strongest there. Don't blindly use 1000Hz tone or strictly follow the VFO 'set it and forget it' concept. You can easily lose 20% or more of your power on each edge of your pass band. Pass band centering of the signal will give the best results of both RX and TX.
- There's no need to have the waterfall streaking bright red. Set your rig's volume to a low level (less than 25% of max) and adjust your waterfall and soundcard levels for a good contrast. Do not overdrive your soundcard! Get the background noise and the transmit trace well defined and separate. Keep in mind, how your waterfall looks does not impact decoding, but it is harder to work it if you can't see it.
- Use UPPER CASE characters sparingly. Lower case text in PSK31 varicode transmits fewer bits of data, thus you'll increase transmit speed and improve the likelihood of proper decoding on the other end. For example, the difference of a lowercase e and an uppercase E is five times more bits! (e=11 vs. E=1101101101)
- Enable your RF Attenuation and increase the volume. This helps keep a strong signal from wiping out the weaker ones. Attenuation will probably be around 20 dB, but by dropping the noise level, the signal readability improves. AGC (auto gain control) does nothing for a weak signal; it only levels the louder ones.
- Use your digital modes software, or a program like Spectrogram, to see what your noise level is with the radio off. This will give you an idea of how 'clean' your soundcard is. Typically, onboard (built-in) sound hardware (as found in most 'mainstream' computers like Dell or HP) does not have a signal-to-noise ratio as good as an inexpensive (less than \$50) separate soundcard. When purchasing a soundcard, look for something with over 100 signal-to-noise ratio in the specifications.
- Consider dual monitors (most modern video cards have two jacks). This allows you to have the waterfall or spectrum display on one screen, and your logger, text window, etc. on the other. It makes a huge difference in speed and ease-of-use when you don't have to swap between screens or use smaller windows for your QSO.
- Keep your ALC reading during transmit to as close to zero as possible. This will keep your signal clean and your IMD at a good level (-20s or better is ideal). Your power output will drop, but there's no need to 'smoke' the transmit level. PSK31 is about an 80% duty cycle. Even with a full duty cycle rig, it still needs to dissipate heat! Besides, 20 watts more makes little difference. Output of around 50W is enough to work the world, and your fellow CQs will appreciate the courtesy. Also be sure your voice processor is NOT enabling when using digital modes.
- Ask for an RSQ (readability, strength, quality) report! When in a QSO, send just a tone and ask for your IMD and a report on how your trace looks. This will give you a better idea of adjustments needed.

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