



**SoftRock**  
**SDR**

## How Do they work?

The Soft Rock family of receivers works as follows. RF from the antenna is sent through a band pass filter and then mixed with a local oscillator to shift the frequency into the audio spectrum. Using two local oscillator signals that are 90 degrees out of phase you can obtain the “I” and “Q” signals for the RF signals that made it through the band pass filter. These signals are basically stereo audio that gets sent to your computer’s sound card for conversion to digital so it can be processed by software. The software then can decode the desired signals digitally by looking at the audio data

The kits that allow TX operation provide a means of reversing the process and taking I and Q signals generated by the software as audio and generating an RF output that is again frequency shifted back to the desired frequency using the two local oscillator signals that are 90 degrees out of phase, a mixer and an appropriate band pass filter. Yea, it’s a bit more complex than that, but this is basically what is happening with all these kits

The key to the success of the Soft Rock is the I and Q signals interface in the audio spectrum. This means that relatively cheap hardware can be used to perform the analog to digital conversion needed to deal with signals using software. It also means that the performance of the receiver is largely driven by how good the audio hardware is and how much processing power is available in the computer that runs the software