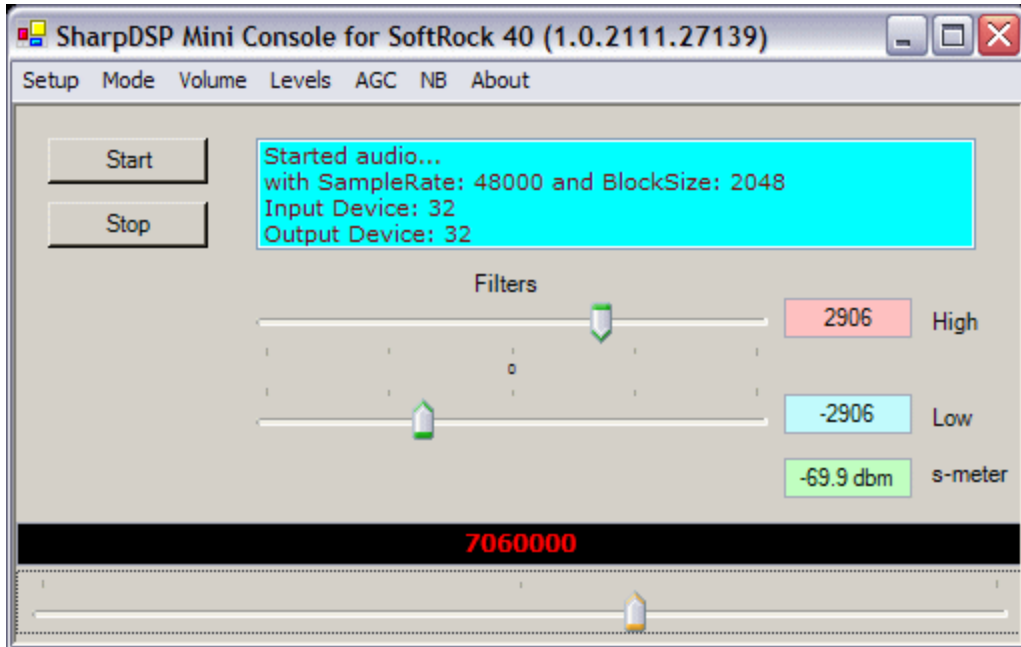


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## Some notes on the SharpDSP Mini Console...

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### SharpDSP Mini Console for the SoftRock:



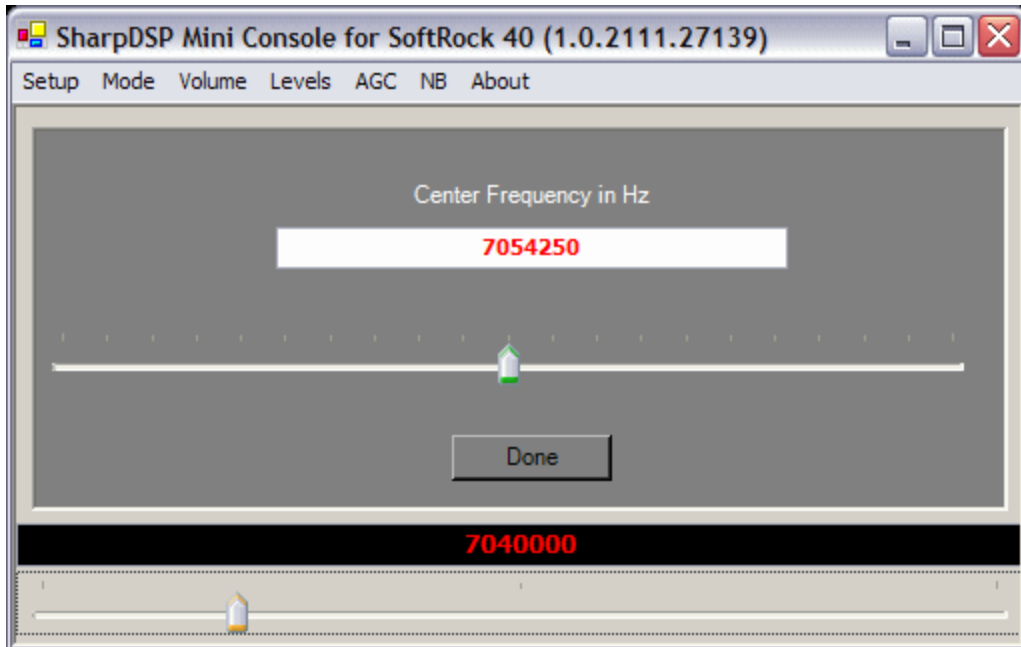
It is available on my website at <http://www.philcovington.com/SDR.html>

### Center Frequency Calibration Procedure:

The SharpDSP Mini Console allows you to set any desired center frequency. For the standard SoftRock 40 the center frequency is 7.056 Mhz. To get an accurate frequency display you will need to calibrate this setting. Here is how I did it:

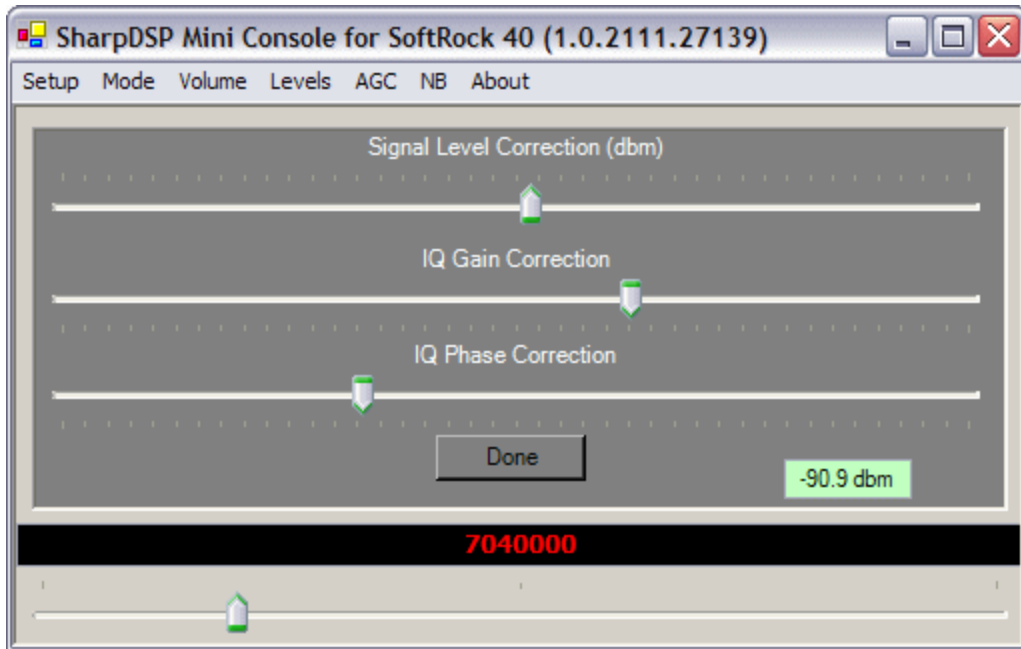
I set my HP8640B signal generator to 7040 kHz. I moved the low filter slider to -2000 Hz and the high filter slider to +2000 Hz. I then selected SSB/DSB/CW from the Mode menu. I then moved the frequency tuning slider until I got zero beat on the 7040 kHz signal. This occurred around 7046 kHz on my SoftRock 40. I then clicked on the Setup->Center Freq menu. The text box showed that the software was set for a center frequency of 7056 kHz (7056000). Using the fine tuning slider I adjusted the displayed frequency (at the bottom of the screen above the frequency tuning slider) until it read 7040000 - exactly what the HP8640B was set to. When you move the fine tuning adjustment slider you will also see that it is changing the displayed center frequency in the text box above it by the amount corrected to get the display to show 7040 kHz. I then clicked on the Done button to accept the new center frequency. The calibration is done.

Here is what that screen looks like. You can see my new calibrated center frequency setting.



### **IQ Balance procedure (Image Rejection):**

To calibrate the image rejection setting I left the HP8640B set to 7040 kHz. I then tuned up with the frequency slider until I could hear the image. This occurs at 7072 kHz if your center frequency is 7056 kHz ( $7056 - 7040 = 16$ , so  $7056 + 16 = 7072$ ). I then clicked on the Levels->Correction menu. I adjusted first the IQ Gain Correction slider for a decrease in the image signal. I then adjusted the IQ Phase Correction slider for a decrease. I went back and forth between the two sliders until I nulled the signal as low as possible. I then clicked Done to exit this screen:



### **Meter Level Calibration Procedure:**

To set the meter level I adjusted the HP8640B to -70 dbm on 7040 kHz. I then clicked on the Levels->Correction menu again. You will see that the s-meter is still visible on this form. This is to aide in calibration. To adjust the s-meter to read -70 dbm I just moved the Signal Level Correction slider until the s-meter read -70 dbm. I then clicked Done.

**Hint:** *You can move the sliders in very small steps by making sure the slider has the focus and then using the left and right arrows on the keyboard. You can also move in slightly larger steps by left clicking to the right or left of the slider.*