Shimming Super Quick Guide:

1. Set up a test EPI, position your slices and adjust your shim window (green box) as you wish. Go ahead and scan so you have a reference “pre-shim” image. Then open up another test EPI for shimming.
2. Do a frequency adjustment (by clicking “Go” in Frequency tab) until you get a “Y” up on top.
3. **Optional**: Click “Measure” in the Interactive shim tab to see where you are starting at. Look at FWHM and T2* values. Click “Stop” after a few measurements. These initial values will be very bad.
4. In the 3D shim tab, click the “Advanced” button, then “Measure” to shim. When it is done, click the top “Apply” button (upper right of screen), then “Calculate” and then click the bottom “Apply” button (bottom right of screen).
5. Do a frequency adjustment (by clicking “Go” in Frequency tab) until you get a “Y” up on top.
6. Repeat Steps 4 & 5 a few more times (3-4 times should be enough). Look at the shim values each time, usually they will change less once you reach a good shim.
7. **Optional**: Click “Measure” in the Interactive shim tab to see your improvement compared to Step 3. Look at FWHM and T2* values. Click “Stop” after a few measurements. While this is “optional”, it’s very important to do this to make sure the shim looks good, because there’s no way for you to know without looking at the curve. If there are two peaks, for example, then you want to go back and do more auto-shimming, or better yet, adjust the individual shim currents yourself (next step 8). (as an indication, T2* around 20ms is very good, might not be achievable in full brain shimming)
8. Save the shim values by pressing the print-screen button and pasting the result into a Microsoft Paint file and saving (or write them all down).
9. **Optional**: Adjust the individual shim currents while measuring in the Interactive shim tab to improve things even more (You can spend all day doing this). Only really necessary if you got a bad result from the autoshimming (e.g. double peaks or severe asymmetric single peak).
10. In the Transmitter tab, click “Go” repeatedly until the measured Angle on the top of the window reaches “180” deg. and says “Y”. Note the “Amplitude (temp) [V]” value in your logbook.
   a. Click “Apply” in the transmitter and frequency tabs
11. Use that “Amplitude (temp) [V]” value in your EPI protocol’s Transmitter/Receive tab if it’s not already in there automatically. It will usually copy the value down into the protocol for you.
12. **Remember to click the “Scan” button to copy down each new EPI run with the same shim and scan parameters. Clicking “Scan” will also copy down the “Amplitude (temp) [V]” value.**
   a. **It is important to actually run the scan you shim on – otherwise the shimming parameters will be lost.**
13. If you accidentally don't click “Scan” to copy down the next run, OR you wish to run a different type of scan (e.g. field map), make sure to:
   • Copy Parameters → **Slice & Sat regions**
   • Copy Parameters → **Measurement Parameters**
   • Copy Parameters → **Adjust Volumes** (this one copies the shim window and shim current values)
   • And remember to type in the “**Amplitude (temp) [V]**” value from Step 9 into the protocol’s Transmitter/Receive tab if it did not copy it for you. It’s important to keep that value constant between EPIs and field maps.
     i. This can be checked in the system tab on the lower right of the main MRI screen

14. The scanner will not do a Frequency Adjustment when you hit Scan now. Is this good or bad? I don’t know. I do know that the image will shift in the frequency encode direction unless you do a Frequency Adjustment between each scan:
   a. Do a frequency adjustment (by clicking “Go” in **Frequency** tab) until you get a “Y” up on top. Then click “Apply” and “Close”.