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I was inspired to build a new Direct Conversion receiver by the availability of three components:

1. Craig's DDS VFO
2. Rick Campbell's R2Pro down converter and preamp designs
3. Alberto's (I2PHD) excellent DSP receiver programs for PC's

I have just completed the first stage of construction, the DDS VFO assembly. The design uses a thick (.090") piece of PWB material for the front panel, and houses the VFO components in built-up enclosures on the back side of the panel. This will provide for good interference containment, with only the necessary signals crossing the shielding.

The Front panel is shown below. I have reduced the push-button count to only those I figured I would use enough to justify.



The compartments for the VFO components are shown below. Feed-through filers are used for all signal that cross barriers, except for the LO outputs. The encoder is mounted below the Controller board. The only mod to the controller board was to reverse the connector for the encoder from the top to the bottom of the board. The lids will be screwed to the aluminum 1/4 inch stock around the periphery. They can be tack-soldered once all is checked out, if necessary.

The last photo is a screen capture of I2PHD's WINRAD software processing the downconverter I/Q audio signals. The noise level was somewhat reduced from normal when this was taken – I expect some detriment to my antenna from recent heavy rains is the cause. I operate the VFO with a receive CW offset of 3 KHz to avoid any hum or noise around DC. When it receives the "transmit" logic signal, the VFO will revert to the

frequency shown on the display. The offset of the 600 Hz sidetone is established by the WINRAD software.

Plans are to have a complete transceiver done before next year's convention in Dayton.

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