Installation QRG for DDS-VFO Feb/2/23 Firmware 6.79

This supersedes any and all prior installation manuals

Hello, and thank you for your interest in DDS-VFO. DDS-WLG Firmware buy PU4WLG, a really fantastic coder and www.ddsvfo.com that makes the kits called DDS-VFO.

First lets explain what DDS-VFO is and how its implemented.

DDS-VFO is a microprocessor based Rf generator and display that replaces the existing crystals or PLL system in your radio and provides the needed mixer frequency. The advantage is you can generate the frequency needed for virtually any radio without signal degradation from the lowest to highest frequency.
The main generated frequency(s) can, as well, have any offset in Tx and or Rx and separate offsets for specific modes such as USB, LSB, AM-FM

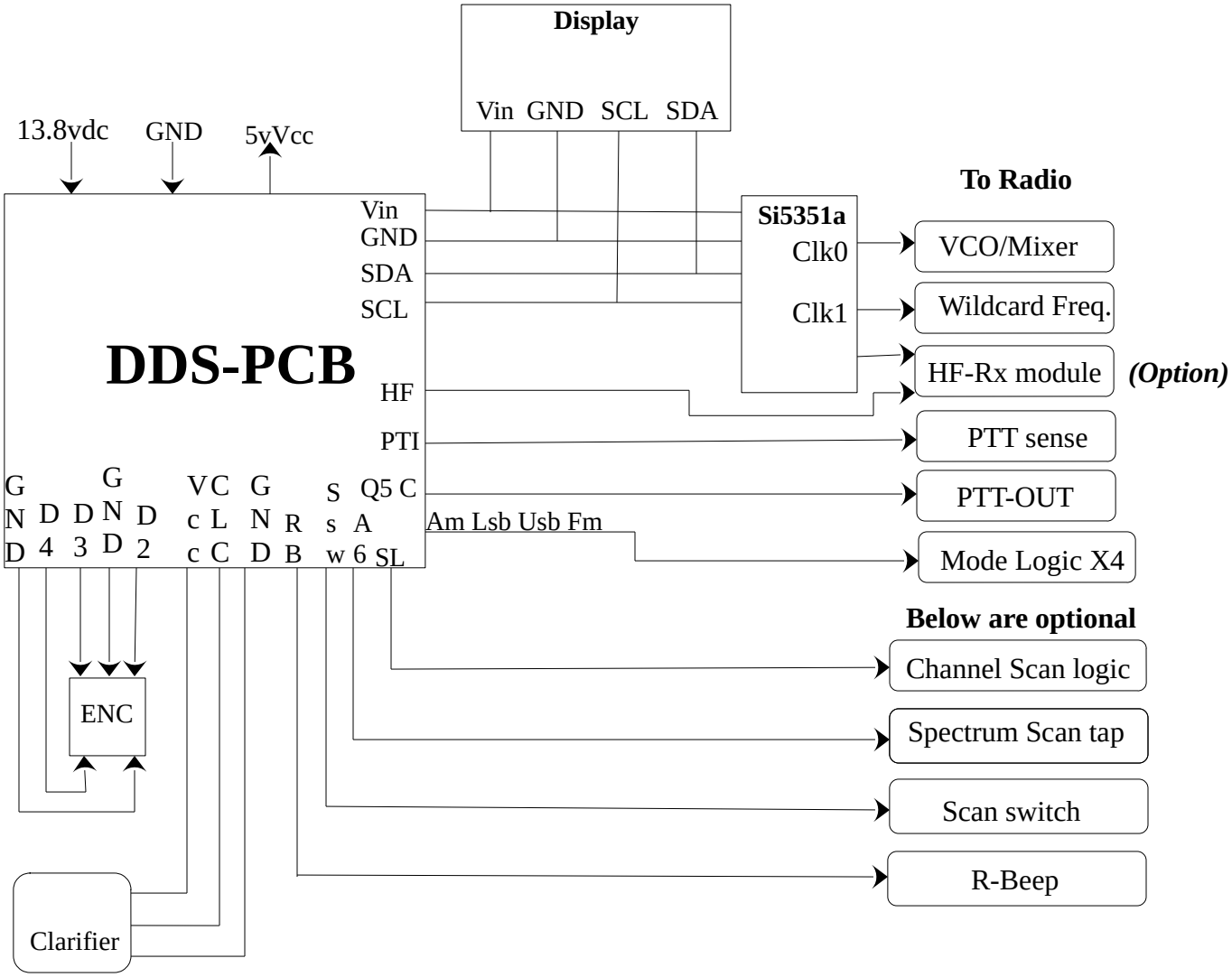
For example:
You have a radio needing 35.00500 Mhz for the mixer to generate 27.20500 Mhz Rx/Tx.
The DDS-VFO will generate this and as you move up or down to synthesize other frequencies, the output level remains constant. This is a great advantage as most of the crystal synthesizers would drop out at the high and low ends resulting in low or no Tx/Rx at those ends. The generator has very little jitter, typically <70 ps pp and it sports 0ppm error! This has a highly linear VCXO.

The rest of the system firmware has features such as spectrum scan, channel scan, vfo mode and more. This is all accomplished in the software so no need to do anything other place the wires in the correct points within the radio and set the menu items to make it work.

NOTE:
Out of the box, the DDS-VFO firmware is setup for the MB8719 Pll radios at 7.8 I.F! Just wire it and it works! Plus you can set any I.F from 2.5Khz to 200 Mhz.

Help files on www.ddsvfo.com have information on other radios and their settings as well as points to connect to.

The DDS-VFO is actually very simple to install, its just wiring! Below is a block diagram:



Here are the signal types and levels in the radio for each item:

VFO/Mixer	To pin 6 of VCO UHIC
PTT sense	Point on microphone jack that goes to ground when microphone Ptt.
PTT out	To the Ptt line of radio. Goes to ground to key radio.*
Mode logic	To each point for USB, AM etc when selected mode is at 9 to 12vdc
Ch Scan logic	To a point in the radio that goes low when squelch is closed and 5 to 12v open.
Spectrum logic	To a point in the radio that has 0 volts with no signal and 1.2 vdc at full scale. ***Do not connect to any higher voltage or you will damage the circuit.***
Scan Switch	Goes to a switch that will go to ground to activate auto scan mode.
Roger Beep	Tie this wire to the center of the microphone gain pot.

To calibrate the Si5351:

Connect your frequency counter to Clk-1 of the Si5351a.

1. Press encoder dial for 2 seconds and release, then dial to settings.
2. Press encoder for 2 seconds and release, dial to Frequency Clk 1 menu#10
3. Press encode for 1 second and release, then quick press encoder to move cursor to the first number.
4. Now dial in 20000000. Press encoder for 1 second and release. Cursor goes away and you see the 20000000 in the top.
5. Dial to Xtal si5351a menu#8. Press encode for 1 second and release, then quick press encoder to move cursor to the fifth number.
6. Check your frequency counter and simply dial / select this and the next numbers until you see 20000000 on your frequency counter. When complete, press for 2 seconds and dial back to menu#10 and set it at 00000000. Then press for 3 seconds and release, dial to CH mode and press for 1 second. Your done!

* Some radio PTT circuits need a hard ground, you can use the provided relay and simply remove the delay jumper.

Information on connection points to various radios we have verified: are on the help files section of www.ddsvfo.com

Thanks for reading!
73, N5SIM Toby