

# PowerSDR v2.8.0 for Pi SDR Software Setup

The PowerSDR v2.8.0 for Pi SDR installer is installing PowerSDR v2.8.0 application that provide support for Pi SDR IQ Plus in a single setup/install step.

The PowerSDR v2.8.0 Pi SDR is based on KE9NS extensions to Flexradio's application whereas it is additionally modified for supporting the Pi SDR IQ Plus device.

Supported rigs of the PowerSDR v2.8.0 Pi SDR when operated with the Pi SDR IQ Plus are: SDR1000, RS-HFIQ, G59, G11, Softrock/EnsembleRxTx

After the initial software installation, the first-time PowerSDR v2.8.0 application run is executing a one-time FFT calibration and then proceeds to the first rig configuration.

<**Warning**> The minimum Pi SDR IQ Plus firmware version that is required is v2.80 If you do not have this (v2.80) firmware flashed in your Pi SDR IQ Plus, please flash it now.

<**Warning**> The new PowerSDR v2.8.0 installation will use rig settings from any previous PowerSDR v2.5.3 Pi SDR installation.

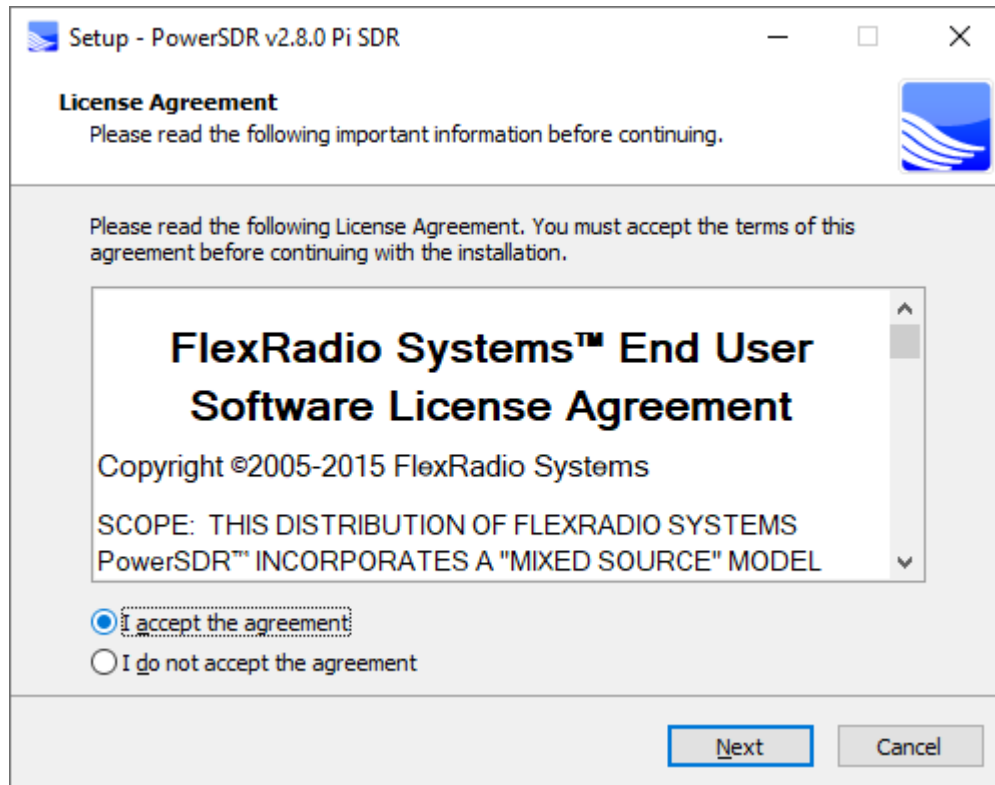
<**Warning**> PowerSDR v2.8.0 Pi SDR share the same rig list with PowerSDR v2.5.3 Pi SDR though it will have different/separate rig configuration .xml files within the Pi SDR application data folder. It will share the skins though with all other PowerSDR versions.

Thus, it can co-exist with a previous/other PowerSDR v2.8.0 installation (eg KE9NS), having different application executable files and rig configuration files but will share and have common skins folder.

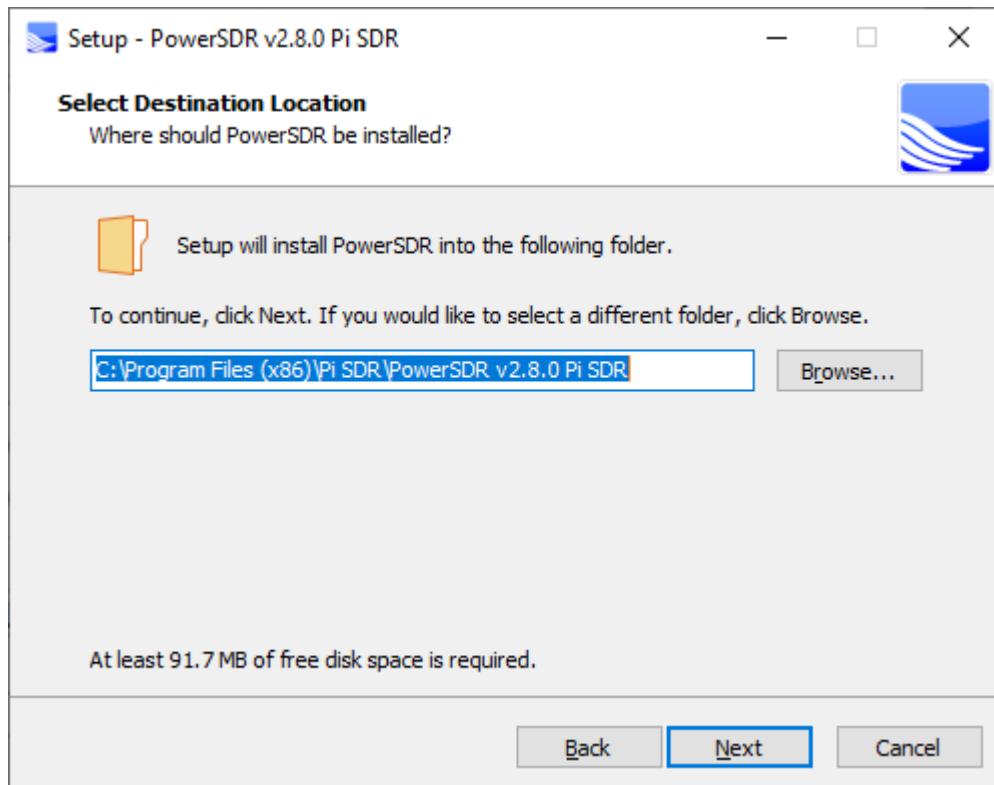
First, you should download and start the PowerSDR v2.8.0 for Pi SDR installer from here

→ [https://mega.nz/file/4KgHWaoK#foecychnK6A26sliF\\_V8gs9GCQMjHl1xkWEJRv14P9o](https://mega.nz/file/4KgHWaoK#foecychnK6A26sliF_V8gs9GCQMjHl1xkWEJRv14P9o)

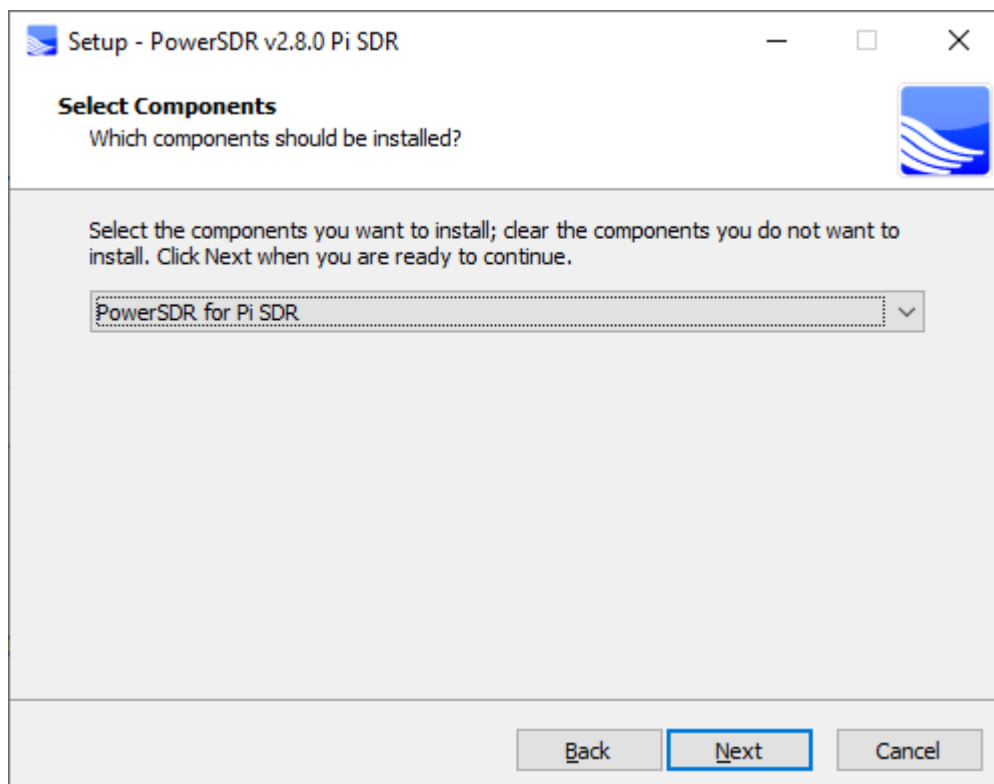
Upon start of the installer you are presented with the initial screen



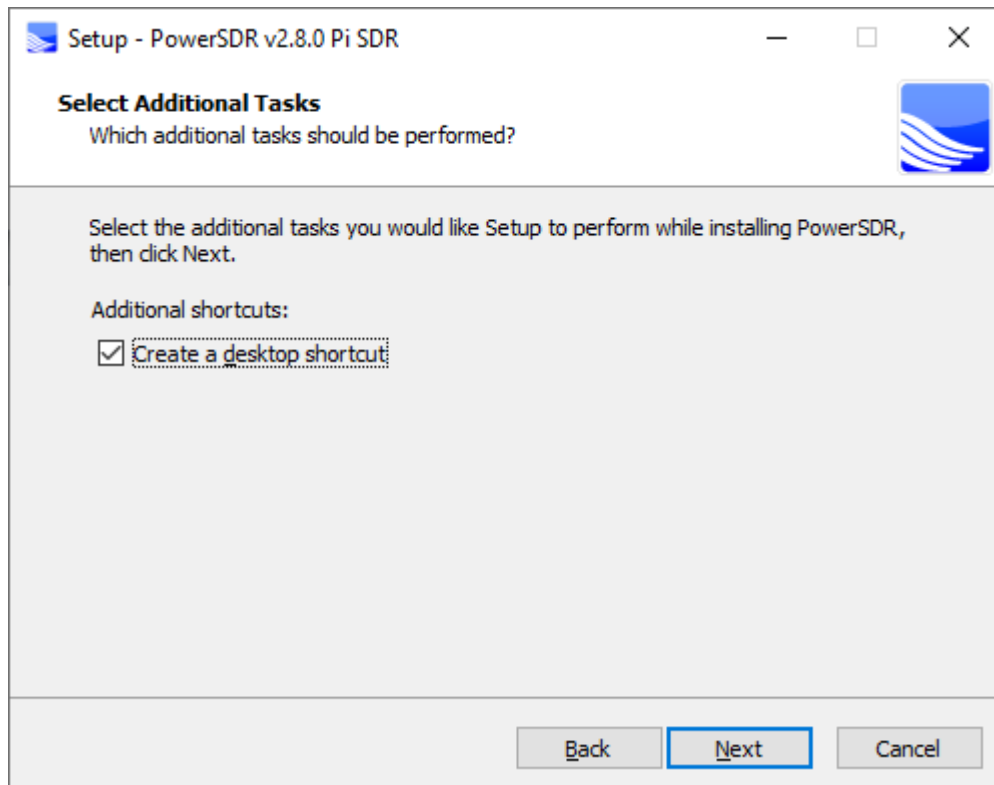
Here you have to accept and select "Next"



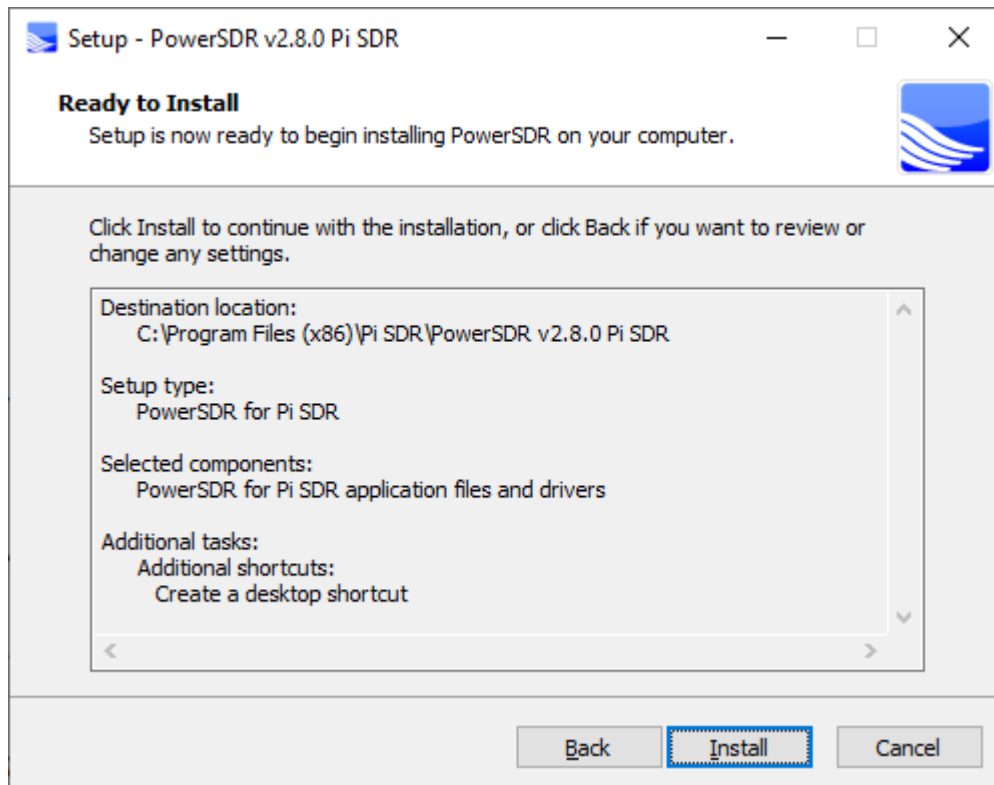
Use the default folder location and click “Next”



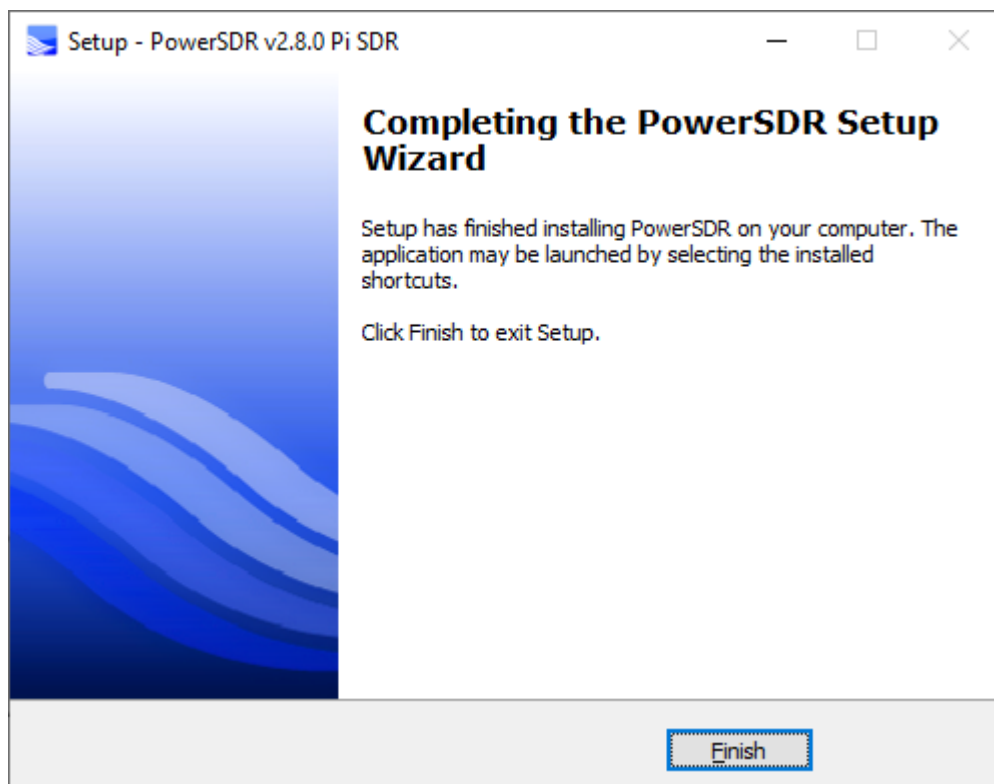
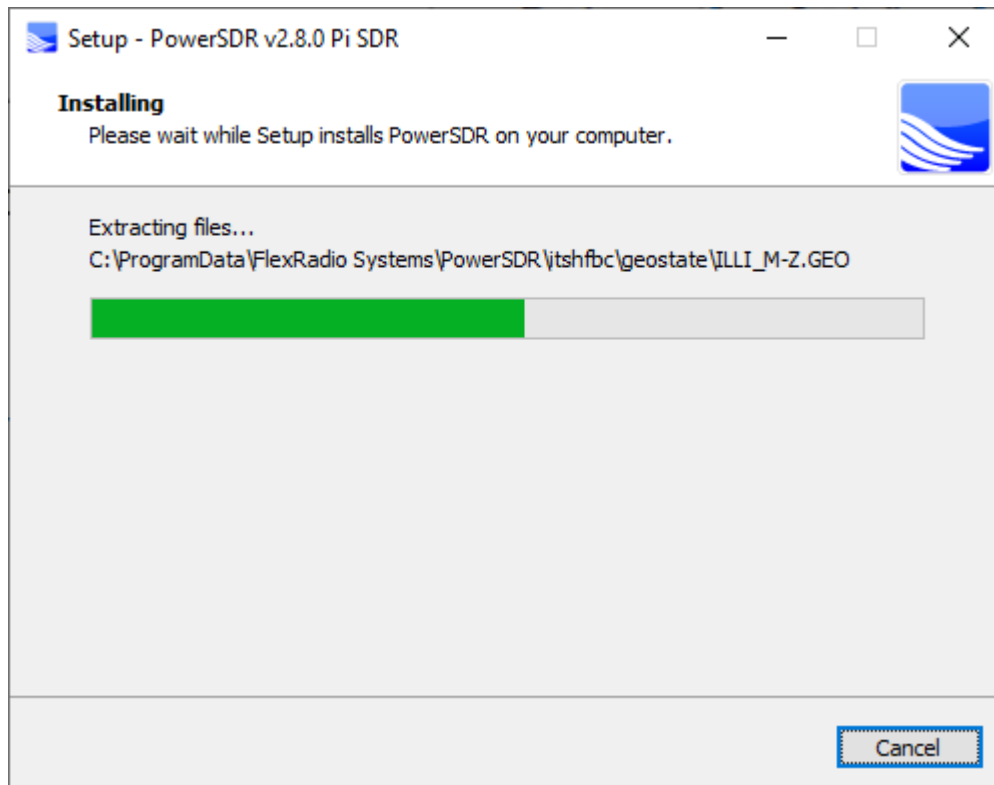
Click “Next”



Click "Next"



Click "Install", installation will be performed and will last a few minutes, please wait for completion and all tasks to be closed.



Installation has been completed and you can click "Finish", if any background installation task is still pending please let it finish on its own time.

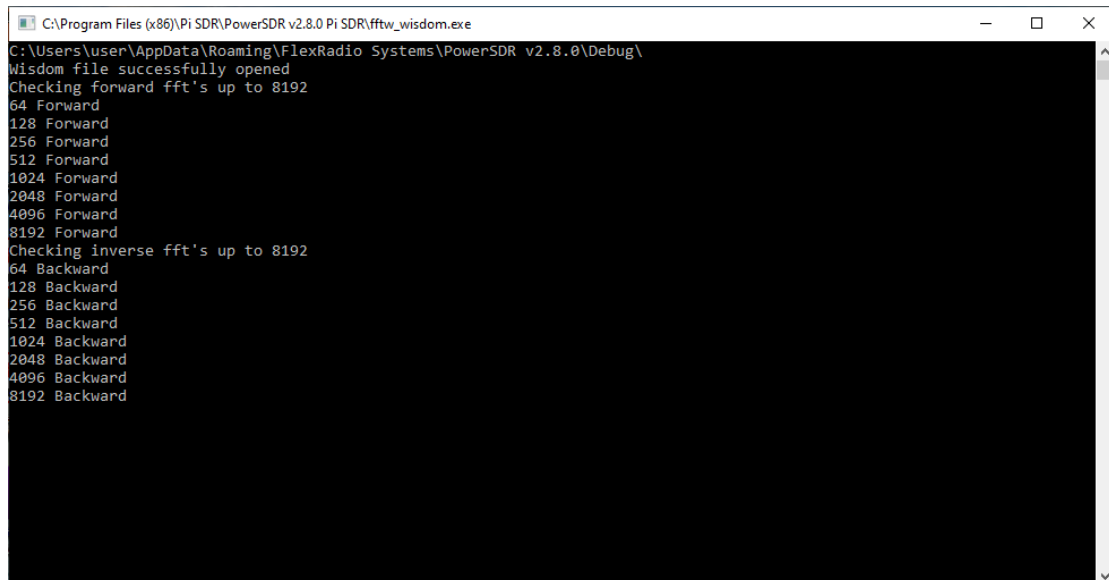
After that step, you will have in your Applications list the item 'PowerSDR v2.8.0 Pi SDR'.

Also a 'PowerSDR v2.8.0 Pi SDR' desktop link and a 'PiSDR' applications menu item will appear in your system.

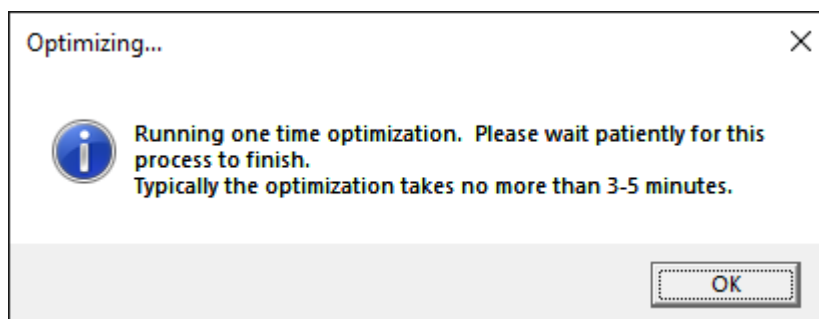
After the initial application installation, there is a first run of PowerSDR for Pi SDR where the setup wizard will be invoked regarding our rig.

Start the PowerSDR v2.8.0 Pi SDR application from the startup menu or from the desktop icon.

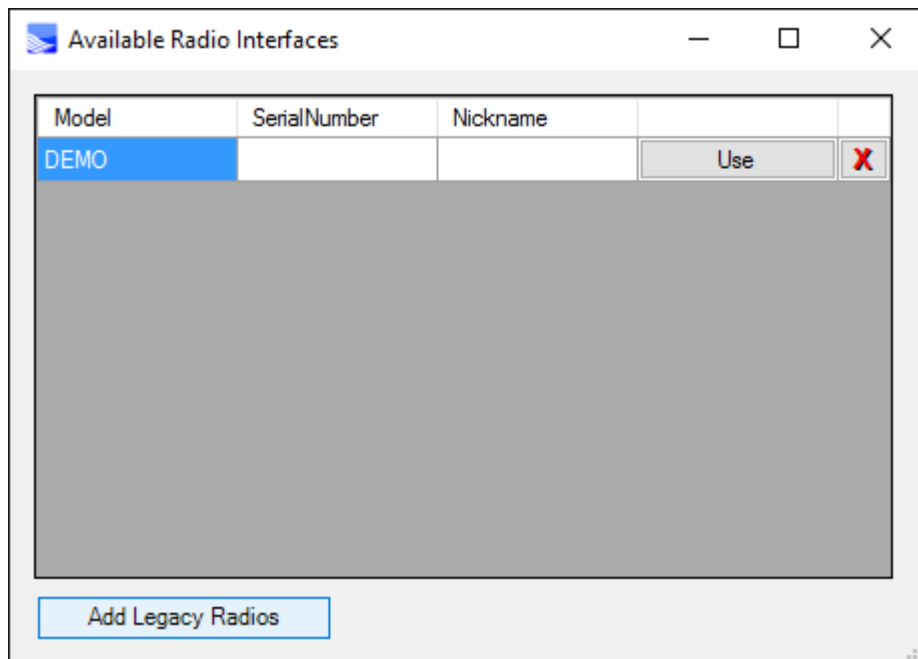
On the first-time run an optimization is performed



```
C:\Program Files (x86)\Pi SDR\PowerSDR v2.8.0 Pi SDR\fftw_wisdom.exe
C:\Users\user\AppData\Roaming\FlexRadio Systems\PowerSDR v2.8.0\Debug\
Wisdom file successfully opened
Checking forward fft's up to 8192
64 Forward
128 Forward
256 Forward
512 Forward
1024 Forward
2048 Forward
4096 Forward
8192 Forward
Checking inverse fft's up to 8192
64 Backward
128 Backward
256 Backward
512 Backward
1024 Backward
2048 Backward
4096 Backward
8192 Backward
```

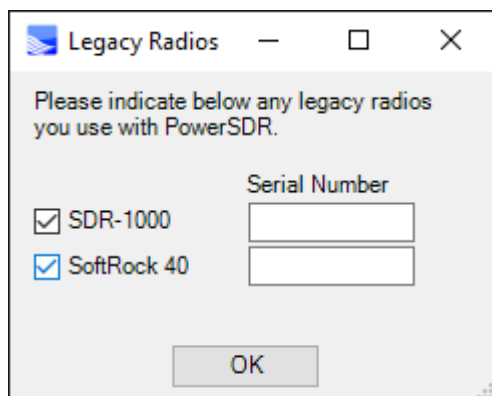


After the optimization, a window appears with the available radios, first time only DEMO radio exists and we need to add the SDR1000



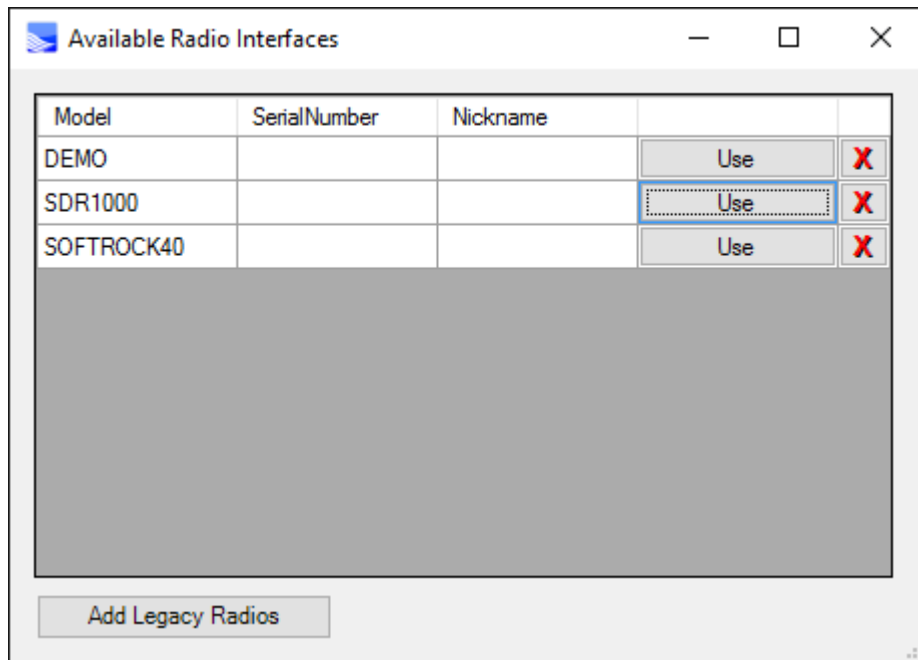
Click "Add Legacy Radios" and check the following checkboxes

"SDR-1000" and "Softrock-40"

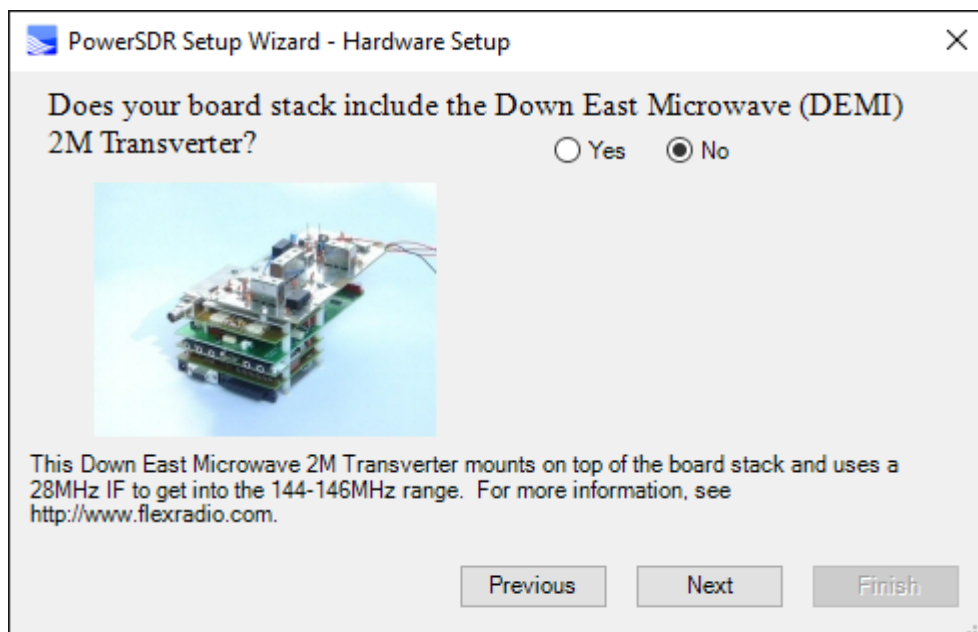


Click "Ok"





Upon finish adding the radios, click the “Use” button in the SDR1000 line and the initial rig setup wizard starts. Bear in mind that we always use the ‘SDR1000’ as radio even if we have a Softrock/Ensemble in order to have all the added functionality.




Click “Next”

PowerSDR Setup Wizard - Hardware Setup

Is the 100W Power Amplifier (PA) included in your hardware configuration?

☐ Yes ☒ No



The Power Amplifier bumps the output power of the SDR-1000 from 1W up to 100W. For more information, see <http://www.flexradio.com>.

Previous Next Finish


Select 'Yes' in Power Amplifier even if you do not have a PA. In effect this will enable the usage of per band output calibration, a very useful Tx feature.

Click "Next"

PowerSDR Setup Wizard - Hardware Setup

Is the LDG Z-100 Antenna Tuning Unit (ATU) included in your hardware configuration?

☐ Yes ☒ No



The integrated ATU allows the user to tune coax antennas with an SWR of up to 10:1. For more information, see <http://www.flexradio.com>.


Previous Next Finish

Click "Next"

PowerSDR Setup Wizard - Hardware Setup

Does your hardware configuration include the External Clock Reference Option?

☐ Yes ☒ No



The External Clock Reference Option allows the DDS to be synchronized with a more stable clock source. For more information, see <http://www.flexradio.com>.

Previous Next Finish

Click "Next"

PowerSDR Setup Wizard - Hardware Setup

Is the USB to Parallel adapter included in your hardware configuration?

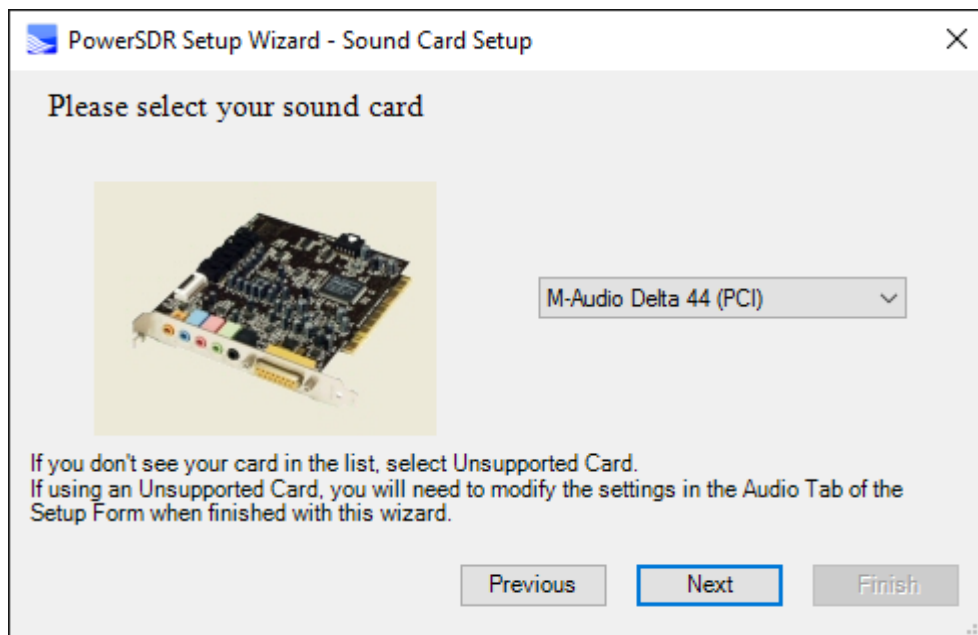
☐ Yes ☒ No



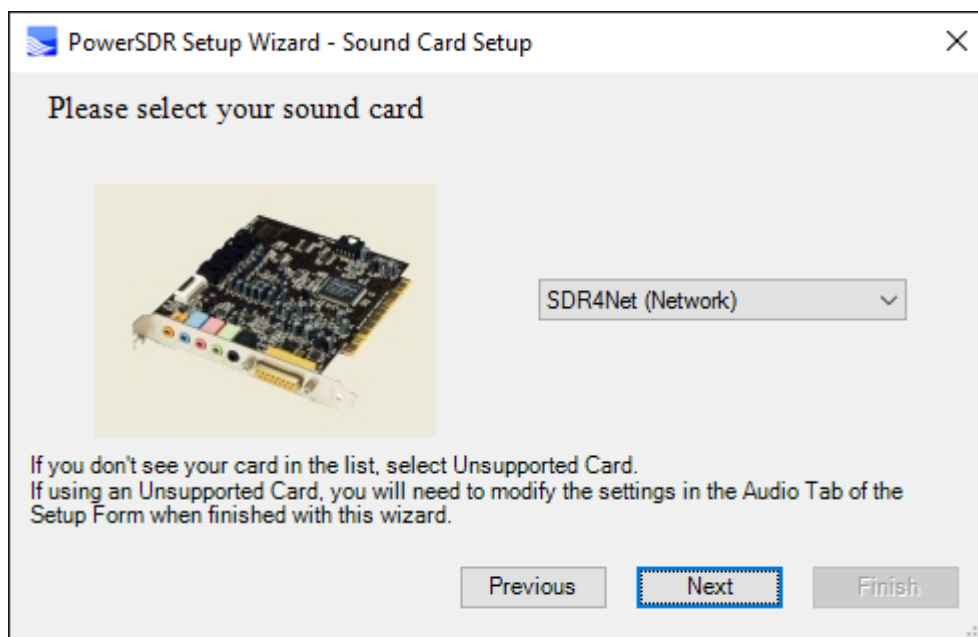
The USB to Parallel adapter eliminates the need for a parallel port interface on your computer. Unlike other off-the-shelf adapters, the FlexRadio Systems adapter implements all the data, status, and control lines for complete integration with existing parallel port hardware. For more information, see <http://www.flexradio.com>.

Previous Next Finish

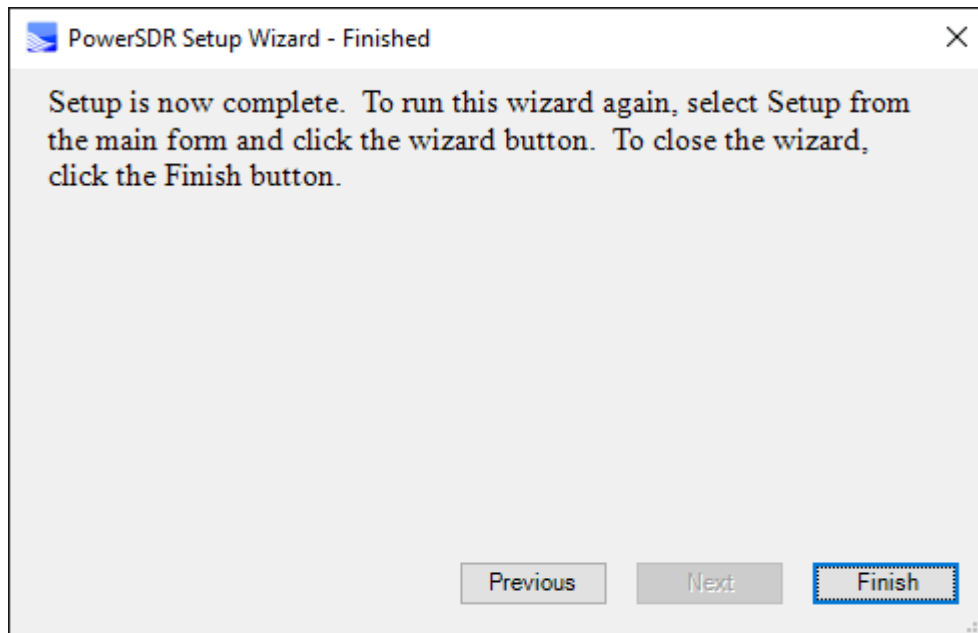
Click "Next"



Here we need to specify the new interface, thus we select it as follows



Click "Next"



Click "Finish" and this setup is concluded.



Congratulations, PowerSDR v2.8.0 for Pi SDR application is installed.

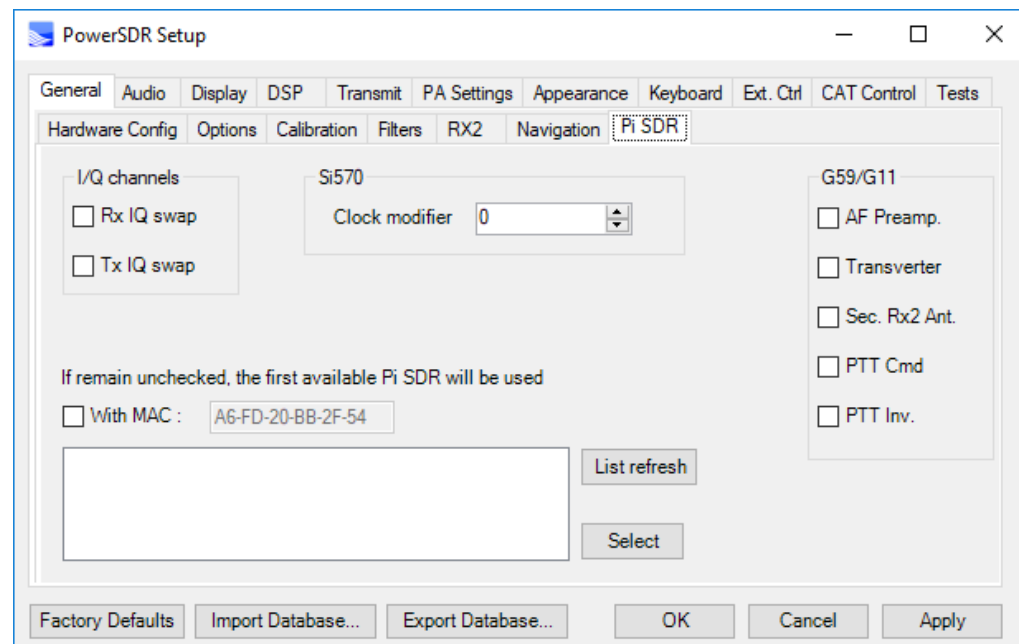
For Setup Audio settings, please click Setup and go to Audio->Primary on the Setup menu and set the “Audio” settings for Pi SDR IQ Plus according to this screen

The screenshot shows the 'PowerSDR Setup' window with the 'Audio' tab selected. The 'Primary' sub-tab is active. The 'Primary Sound Card Setup Details' section on the left lists: Driver: SDR4NET, Input: SDR4NET, Output: SDR4NET, Mixer: None, Receive: (empty), and Transmit: (empty). The 'Sound Card Selection' dropdown is set to 'SDR4Net (Network)', and the 'Expert' checkbox is checked. The 'Buffer Size' is set to 2048, 'Line In Gain' to 20, and 'Channels' to 4. The 'Sample Rate' is set to 192000, 'Mic In Gain' to 50, and 'Latency (ms)' is set to 200 with the 'Manual' checkbox checked. The 'Output Voltage' is set to 1.00, and the 'Mic Boost' checkbox is unchecked. At the bottom, there are buttons for 'Factory Defaults', 'Import Database...', 'Export Database...', 'OK', 'Cancel', and 'Apply'.

Here are the audio tab setup settings for Pi SDR IQ Plus, set Buffer Size to 2048 and Sample Rate to 192000. Also click on ‘Expert’ and set Output Voltage to 1.

Click ‘Ok’ and close the Setup form.

# Pi SDR Extensions



By starting the Setup form and going to Setup->General->Pi SDR you can have this setup screen.

The main white box area is used to show the Pi SDR's discovered in the network.

List refresh button : will scan and show the MAC and current IP address of each Pi SDR discovered.

Select button : will make the selected Pi SDR as the preferred one for use with this instance of PowerSDR. This function is useful for those users having more than one Pi SDR in their network. In order for this to be effective, the 'With MAC' checkbox has also to be checked.

With MAC : Specifies that a only a Pi SDR with the selected MAC address will be used, otherwise the first available will be used.

## I/Q Channels

Rx IQ swap : perform a swap between the I and Q channels in Rx

Tx IQ swap : perform a swap between the I and Q channels in Tx

## Si570

Clock Modifier: used only with Softrock/Ensemble or compatible transceivers to add an offset to Si570 local oscillator, by modifying this setting, frequency calibration can be performed. User can either use this dial to manually calibrate exact VFOA frequency, or by using this to get the Si570 LO at a distance of +/- 900Hz from VFOA, then can initiate the automatic frequency calibration (Setup->General->Calibration) for auto spot-on accuracy. An external signal generator is required for all calibrations.

## G59/G11

These checkboxes used only with a G59/G11 transceiver.

AF Preamp. : Enables/Disables the G59/G11 on-board AF preamp. Note that receiver level calibration for accurate S-Meter readings are affected by changing this.

Transverter : Enables/Disables the G59/G11 transverter function.

Sec Rx2 Ant. : Enables/Disables the G59/G11 secondary receive antenna.

PTT Cmd : Enables/Disables the G59/G11 sending PTT out function.

PTT Inv. : Enables/Disables the G59/G11 sending inverted PTT out function.

## SoftRock/EnsembleRxBx & Compatibles, UHFSDR with ATTiny(v15.5) and Si570

For Ensemble RxBx & compatibles, the Si570 LO multiplier selection can be performed from the Setup form here

Setup->General->Hardware Config->(DDS Expert)->PLL Multiplier

So Softrock/EnsembleRxBx users should place there the number '4' and UHFSDR users place the number '2'.

After changing the PLL multiplier a PowerSDR stop and exit application is required, settings are valid after application next start.





