**PowerSDR 2.7.2 ke9ns Feature Additions: (newest first)**

**DX Spot: Frequency hopping directly from Map:**Left Click on any Red Dot on the Map and hit the CTRL key to go directly to the DX spot Frequency, mode and split. **DX Spot: Country or Call sign directly to World Map:**A Red Dot appears directly on the map for every DX Spot on the DX list.   
Select either DX Country or DX call sign to appear directly on the Equirectangular map.  
 **Sun Tracking (with NOAA space weather):**High resolution algorithm tracks Sun across Equirectangular Projection map (embedded into PowerSDR) based on UTC time and Day of Year for Declination (Solstice’s and Equinox’s )  
Solar Flux Index and A-Index appear next to Sun on Panadapter.  
  
**Special Panafall mode:**When viewing the Sun or Gray Line TRACK, you can select a special Panafall mode which is 80% Panadapter and 20% Waterfall (as opposed to a standard 50-50%) just for RX1  
   
**Gray Line Tracking (with Sunset and Dusk areas):**  
High resolution algorithm updates in 1min intervals.  
Right Click on “Center” button on main screen to open Setup Panel to select the Color and Alpha (transparency) of the Gray Line.  
  
**Equirectangular Projection (embedded into PowerSDR):**  
When you open the Spotter Window and Click on the “Track” button (with Either Sun or Gray Line Tracking enabled), the current Background image changes to the Equirectangular map.  
  
**TNF (adjustable Width):**  
Right Click on the TNF buttons and you can select the Width of the next TNF created. Standard is 100hz, but can go as high as 600hz.  
  
**Reset buttons for NR, ANF, NB, NB2 buttons:**  
Right Click on any NR, ANF, or NB button and go directly to the adjustment panel for making changes to the noise filters. Factory default Reset buttons have now been added.  
  
**Record / Play ID CheckBox:**  
When Selected the “Rec” button Sets the Drive to 0, and keys the Flex to allow you to record your voice. When the “Play” button is pushed, the Flex will Transmit the last recording.

**Quick Audio Save Folder Option:**  
When QuickAudio Save Folder box is checked (under the Wave Menu Item), A new QuickAudio file is saved each time you Record. Right Click on the “Play” button to see the folder with all the recordings. You can Right Click on any File to rename. Highlight any file you want to play and Click “OPEN” button. When you Click on the “Play” button the selected Recording will play until you select another file or select another file, but click the “Cancel” button instead of “Open”, and the Flex will return to playing the Last recording made.  
  
**Right Click on Buttons:**  
Right Click on many button to go directly to the setup menu for their function, including Antenna descriptions found on left side of screen. Waterfall ID callsign box takes you to the database folder. Transmit profile takes you to the setup->transmit. NR,ANF,NB button take you to the setup->DSP->Options. RX/TXEQ takes you to the EQ settings menu. Right Click + CTRL on Band button creates a new bandstack memory. Play button takes you to the Quickaudio folder.

**DX Spotter screen:**  
Type the URL of a DX Telnet Cluster (or ReverseBeacon) along with the PORT# and your Call sign.  
Click on the “Spot DX” button to connect up and start spotting.  
When the “DX Parser” is checked, PowerSDR will attempt to determine the Mode and Split from the DX spot frequency and DX spotter comments, then set the Flex accordingly   
cw,ssb,rtty,psk,Olivia,msk,etc.  
You can also check to select only North American, or Exclude North American Spotters.  
You can also check to select only CW, Phone (AM,SSB,FM), or Digital (rtty,psk,packet,etc)  
You can also check to select the Mode(s) you want to see spots for: CW, Digital, Phone.  
DX Spotter Window: Click on any DX spot and go directly to that spot (if DX parse checked, then also set mode). Left click on any DX spot to open up QRZ web page of DX Spot  
Panadapter Window: Click on any DX spot in Panadapter, then Hit the CTRL keyboard button to open up QRZ page, or Hit the Shift Key (toggle) and view the Spotter in the Panadapter.  
Spotting works on both RX1 and RX2.  
  
**SWL Spotter:**  
Right Click on the “Callsign” waterID box (at the top menu line) and place the SWL.csv file into this folder to allow for spotting Shortwave signals.  
Click on any Shortwave station viewed in the Panadapter, then Hit the CTRL keyboard button, to open your Web Browser and Google the Shortwave station. Works only on RX1.

**Band Scanner:**  
Work in Progress band scanner  
Automatically adjusts to current band limits your on.  
Select Step (khz) and Step Rate (mSec).   
Push “Scan Band” button to start scanner. Stops then reach end or “Scan Band” pushed again or Squelch level exceeded.

**Memory (Hyperlinking):**  
Drag and Drop any URL (from your Web Browser [excluding Edge browser] URL address line) directly onto any highlighted Memory. Now Right Click on that particular highlighted memory at any time to directly open your Web Browser to that stored Hyperlink.   
Drag and Drop any File (from your Desktop or File Explorer) directly onto any highlighted Memory. Now Right Click on that particular highlighted memory to open up that File directly using the default opening program associated with that file type.  
Also Drag & Drop (File or URL) to the “Add” button to create memory and Hyperlink at the same time.

**Shortwave Bands (SWL):**  
All the standard Shortwave bands are now a set of Band buttons. Click the “SWL” button to display all the shortwave bands, complete with Band Stacking.

**Band Stacking (all Bands):**  
Right Click + CTRL button on top of and Band Button to add a Band Stack memory.  
You can view the current Band Stack your on and the Total Stack# for the current Band Selected at the Top of the screen (just under the Tune Step readout).  
  
**Monitor Feature (Pre and Post processed Audio):**AM and FM modes now have Pre-Processed audio available to the Monitor “MON“. The Flex-1500 can only do this via the VAC function, not the built in headphone jack.  
“MON“ button now has “MONpr” for Pre processed audio and “MONps” for Post processed audio (which is only available for SSB on all radio models).   
Reduced the TUNE audio level (temporarily) in the monitor  
Properly change the AF slider to say MON during Transmit or TUNE, since that is its function (except if you have RX2 set to stay on when transmitting).  
  
**Continuum Mode (RX1 only):**  
Waterfall is used to display Peak band power vs time (5 second intervals), for both Receive and Transmit.  
  
**Waterfall History Moves with Frequency change (in Panafall mode):**The waterfall history (in Panafall mode) now always moves with a change in frequency. At some point, if you keep scrolling (changing frequency) in one direction, you will hit the edge of this feature and the Waterfall will clear and restart over. There is also a checkbox setting in Setup->Display to allow for a wider waterfall to avoid this (but uses more cpu time). Dark areas in the waterfall (that appear as you move) are areas with no valid history. In this way, the waterfall you see is always valid history for the current Panadapter display your viewing.  
 **Auto Waterfall and Panadapter Display Level:**  
Left Click on the “Auto Wtr/Pan Lvl” button on the main screen to automatically set the current waterfall display Low level. Work in both Receive and Transmit. Setup->Display now have separate low level for RX2 and for Transmit levels. The Transmit High level is now 0db  
Right Click on the “Auto Wtr/Pan Lvl” button on the main screen to automatically set the current Panadapter Grid Min value (base line of the Panadapter signal on the screen).  
  
**Average Button:**  
Click on the “Avg” button (when viewing in Panafall mode) and you can select “AvgB” which selects averaging on both Panadapter and Waterfall, or “AvgP” which selects averaging on just the Panadapter and sets the Waterfall to normal (which allows for better viewing). Works for both RX1 and RX2

**Transmit Bandwidth:**  
Now both Flex-1500 and Flex-3000 can transmit up to 10khz wide. The Flex-3000 can also select 192khz SampleRate.  
  
**Gray Waterfall:**Click on the “GrayWtr” button at the top menu line to set the Waterfall to Gray Scale Mode. This mode shows more detail and allows for viewing of Waterfall text and images.

**Panafall Modes:**RX1 and RX2 can have Panafall mode on together, or RX1 in Panafall and RX2 in Panadapter mode.  
The screen is divided either in ½, 1/3, or ¼ sections. Now a special Panafall mode just for RX1 allows for 80% Pan and 20% water.

**TX Waterfall ID:**  
Type your Call sign or some text into the Callsign box (at top menu line of PowerSDR) and move mouse away and wait for box to turn GREEN. Click on the “TX WaterID” button to key Flex and transmit that text into the Waterfall of the Flex.  
It does not matter what Sample Rate your Radio is set for (Setup->General->Audio->Primary), but Lower Sample rates (48k or 96k show up better than 192k. This is because the resolution of the display is always 4096 data points for the entire display, no matter what the Sample Rate. So a Lower Sample Rate means higher resolution. But it always transmits at 48k SR no matter what the radio is set at.  
  
If you want more gain output on the image go to Wave->TX Gain and increase it. And you can also increase the Drive. Just don’t exceed the ALC.  
  
To see what your transmitting better, hit the auto water level button as its transmitting. Also hit the GrayWtr button at the top, and it will show up better transmitting and receiving Waterfall ID’s. Easypal uses Waterfall ID’s as well.  
  
The Speed of your waterfall (Setup->Display->FPS) will affect how it looks (stretched out or scrunched) when receiving. When you transmit your FPS does not affect what others will see, just how it looks in the waterfall on your radio.

WaterID Images:  
Right Click on the Callsign window at the top. A folder will open where you can place small 24bit grayscale or color bitmap images. (i.e. test.bmp)  
  
To transmit the bitmap image, type in the name of the file with a . at the end (ie. test. )  
Wait for the window to turn Green, Now hit the “TX WaterID” button

Same conditions apply to image as a Text Call sign as far as output level, SR, graywtr, etc..

**KHZ and MHZ Frequency entry (for below 50mhz):**  
Now you can enter in KHZ directly into the VFOA or VFOB. 3800 sets to 3.8 Mhz  
720 set to 0.720 Mhz. 28300 sets to 28.3 Mhz

**Incorporate DJ Console code into PowerSDR:  
  
New Analog Meters:**Add TR7 and Curved Analog Meters as well as a larger Edge meter. Click on the Meter box to toggle between meters. Added new color codes meter types: SWL, Power, ALC  
  
**Meter Peak Hold Feature:**  
Added a Peak / Hold feature with a 2nd Red needle to hold the Peak value for an extra second.  
  
**PA Temp and Volt Readings on main screen (Flex 3000 and 5000 only)**  
Click on the Temp or Volt text on left side of screen to activate. Update rate is tied to CPU% update rate in Setup->Display.  
  
**Proper S9 reading for both HF and VHF/UHF bands:**  
Added -93dbm S9 reading for Frequencies above 30mhz