

# Thetis v2.6.8 Change Log

- **Thetis projects updated to use vs2019, .NET Framework 4.8, and MS Visual C++ Redistributable for VS 2015, 2017, and 2019**
- **added BPF menu to control place BPFs into bypass.**
- **BPF for RX1 is automatically bypassed when WB display is active.**
- **Fixed the "-autostart" command line switch.**
- **changed behavior of the power settings when 'Use Drive Power' is unchecked. No longer allows the Drive slider to adjust the power when in tune.**
- **added a new display for the Andromedia controller to the Collapsed display.**
- **using the Multimedia Class Scheduler Service (MMCSS) to give priority to audio threads.**
- **two panafalls now can be used RX1 and RX2**
- **filter overlay draw order change so that filter is shown over waterfall**
- **grid draw code for Panadaptor + Waterfall now one and the same**
- **F/G/H drag code changed/reworked to handle 2 panafalls**
- **scale dragging now copes with panafall(s)**
- **scroll left/right when in CTUN can be configured to use 'old' jump method, or smooth scroll at edges using 'clicktune drag' setting in options**
- **re-worked scale bar and frequency code, removed duplicate code for bandedges, fixed UK edges**
- **setup saving options bug fixed, where you would click OK on save options, then quickly close console down before save thread had completed. This would cause crash and possible settings corruption. The save thread was still running when an additional save was called during shutdown**
- **extended RX1 meter that fills space to right of VFOB box**

- original meter reworked to be able to resize, instead of fixed width strings padded with spaces
- RX2 no longer increase window size unless necessary
- progress bar flicker fixed
- double click on stereo sliders recentres them
- some improvements to control repaint during a window resize. It is now delayed until all controls are moved
- RX1 + RX2 code unified when using original meter
- CTUN button now shown when returning from collapsed view
- thick line drawing code now uses pen width instead of additional line of code with X offset
- band edge text now colours correctly in both rx and tx modes
- mute button added in temp location on collapsed view, works for rx1 + rx2
- vertical scale fixed/reintroduced when in tx
- options for colour/alpha for data fill in panorama (appearance->rx display)
- option to hide picDisplay background image from skin. This improves redraw speed (appearance->general)
- option to disable mouse wheel tune when outside spectral display (general->options)
- option to hide/show filter on waterfall (appearance->rx/tx display)
- option to hide/show zero line on waterfall (appearance->rx/tx display)
- fix to VFOB+RX2 when using mouse wheel to tune inside the VFOB box when using collapsed view
- tick options now correct on app start for collapsed display additional control
- initial pass of RawInput under the navigation tab (work in progress)
  - if you have another mouse, or converted/hacked mouse into a VFO then you can use this

**to 'tell' Thetis to use the mouse wheel events from that secondary mouse in a special way.**

**NOTE: only RX1 will be tuned in this way, no support for RX2 yet**

- moved block code out of for loop DrawPanadapter**
- moved block code out of for loop DrawWaterfall**
- remove waterfall count (old pointless code)**
- removed all existing gui notch code**
- TX Filter has waterfall show/hide option**
- SHIFT modifier to zoom slider to ignore re-centre when zooming (can reverse action)**
- fix to zoom centre on rx2**
- drag of filter widths now works on given RX if that RX has CTUN disabled**
- fix 60m grid on rx2 panafall. Channel markers were too long**
- fixed use of shift modifier throughout console.cs**
  - added: shutdown splash screen**
- added: link spectrum grid min/max to waterfall low/high, so dragging scale of spectrum will change waterfall range**
- change: sync only updates RX2 mode/filter if different to RX1 (no more crazy flicker of the buttons)**
- change: setting of RX2 band via CAT handled differently to fix issue with rx2 band drop down not having all possible bands**
- change: move extended from region to new check box. Fixes issues with 60m channels and other problems**
- fix: RX2mode panel now shown in correct place when coming out of collapsed view**
- fix: white popup windows that were showing during shutdown, now not shown**
- fix: flicker of bands panel fixed for RX1 when in extended region**

- temp fix: spectrum scale drag issues when fully in. min/max kept at 24db separation when using slider to resize further work needed as erroneous ranges can be defined in setup form
- change: meter skin scaled instead of tiled. Fixes grey line in meter (edge). Potential issues with skin that requires specific size of the meter background.
- fix: click tune filter removed, lines remain, if options->show ct filter
- change: andromeda cat check in AndromedaIndicatorCheck to prevent unnecessary try/catch
- fix: removed unnecessary calls to CollapsedView from various places that were potentially causing lag when RX/TX transition in CollapsedView
- fix: att drop down now hidden when in collapsed topcontrols hidden mode
- fix: duplex mode does not now use shift offset when in tune
- fix: off on both rx1 and rx2 hides both
- fix: vac1+vac2 issues saving profile with VAC1\_Latency\_On and VAC2\_Latency\_On fixed. They were being defaulted to true in SaveTXProfileData()
- change: frame rate delay in RunDisplay now considers duration of update to better provide 60fps experience. Note: this may impact users struggling to obtain 60fps. Reduce FPS in these cases
- fix: rx1 + rx2 filters aligned when dragging to edge of spectrum in CTUN drag mode
- change: can now clicktune drag filter on waterfall only display
- fix: try/catch around Spot left click. Doing so on an empty line (one that doesn't contain spot) would cause an exception
- change: whole app is now en-US to fix issues with commas in decimal numbers. Issues mostly caused by spot and memory threads forcing en-US

- **fix: show ct filter now remembers state on app start**
- **change: Spain band edges change**
- **add: initial pass of GUI implementation for multi tracking manual notch filter**
- **add: indicator top left of pana/spectrum to show fps target is failing. Red box if fps**
  - **change: moved over to array pool system to reduce GC work**
- **fix: dragging with top frequency strip when in CTUN mode**
- **tempfix: -autostart flag on the command line will power radio on 2 seconds after Thetis window visible**
- **add: manual notch tracking gui implemented, first iteration**
  - **add: directX prototype**
  - **add: directX integration, all views implemented. display.cs will need a rework eventually**
- **fix: issue fixed with map2 embedded resource (Spots)**
- **change: picDisable code changed**
- **change: change to config initialisation order (setup), should fix issues with spot system**
- **add: notch popup toolwindow on right click**
- **fix: scopes now resize arrays correctly so that drawlines knows correct limit and does not draw 'old data'**
- **fix: Panascope & Spectrascope views now use min/max data to display lower scope, the same as Scope view**
- **tempfix: CWX window now shows correctly when cat connection exists (see known issues)**
- **fix: autosave profile on close now obeys check box in setup form**
- **fix: console controls - tx profile initialised from tx profile data instead of saved control data**
- **change: added min to scope2 in audio.cs**

- change: moved high SWR warning display to common point for both gdi + directx renders instead of 'everywhere'
- fix: variable sized gap no longer appears on top of waterfall, related to step/top of grid
- change: tx profile changes with mode (direct code port from powersdr)
- fix: initialisation state of Display Use Spec Min/Max check boxes
- fix: size difference in compressed view of rx1/rx2 meters, all now aligned
- fix: small lsb/mode labels not shown in rx2 in some cases when in collapsed view
- add: option in CAT to always re centre vfo on ZZFx command. Unchecked it will obey CTUN.
- fix: issue with directx2d rendered string width calculation, was noticeable on right aligned grid values
- fix: notches can not be dragged or resized below 0Hz and above max\_frequency (implications with transverters?)
- fix: fix possible crash/exception in band stack/lock selection
- fix: can now resize grids in spectrumscope and panascope views
- fix: skin background now retained when using track map from spot system, 3rd refactor of this code
- fix: waterfall->use spec min/max will now use correct values when band changed
- change: RX1 settings 'bands for max/min' and 'band for low/high' now include bands other than ham (rx2 yet to do)
  - change: rx passband prevented from going outside IF sample area
- fix: initialisation delayed until setup/xvtr forms restored. Fixes crash issues for bypass/lina/etc filters
- fix: spots correctly offset by cw pitch/sidetone when in cw mode

- fix: cw tx and rx zero lines fixes, also split cw fixes
- change: spots now appear on rx2, note: clicking on a spot in spot window will only change rx1 vfo
  - fix: holding shift does not toggle spotter/spot repeatedly, now only shows spotter when shift held
- change: notches do not highlight if dragging a filter/rx/tx
- add: AM/SAM tx profile now change with mode (direct code port from powersdr)
- add: option to enable/disable small labels mode/filter in vfo boxes
- add: option to show/hide fps
- add: option to increase particle size in phase
- change: clicking on date/time will cycle utc/loc and then hide. Clicking in the area/cpu/volts will cycle again
- fix: small mode/filter labels in vfo boxes now reflect state of multirx correctly
- fix: band stack issue with Region3/Japan would prevent Thetis from restarting
- change: 60m slices will highlight if vfo is over them, and in acceptable mode (no check to see if filter is outside permitted area in this highlight)
- fix: if zoom is so large and a filter is unable to fit within available display, dragging it in CTUN mode will perform a reversed spectrum drag
- change: added Region 1/2/3, Germany, to region list. This will effect the band edges shown in red on panadapter and text shown under vfo
- change: selecting a tx profile no longer changes power, power is stored per band and doing both caused inconsistencies
- change: vfoa/b/suba now all use property get/set with single point of text conversion, and member variables to hold frequencies instead of direct access to text boxes

- add: thread priority setting for display thread in setup->Display->General->Driver Engine
- fix: reading certain UI controls from display child thread would block the child thread if main UI thread was suspended due to a Thread.Sleep. Text boxes were the main issue it seems. This caused the red warning indicator to flick when entering TX(mox) due to Thread.Sleep(rf\_delay). It really is a bad idea to sleep the main UI thread, but leaving as is for now
- add: first pass of combined ALC and ALC\_COMP transmit meter, called ALC\_GROUP, a good name required? Initial implementation on EDGE meter appearance only
  - fix: control + band button right click now adds band stack, accidentally removed functionality in shift key press tidy up in initial beyond 2.6.7 update
  - change: all pixel based code for original meter removed, now using edge common function
  - fix: current band # can not be greater than the number of stacks in the band. This would happen if last stack in list was deleted and it was the current stack
- add: 12m band edges for Aus/VK (thanks vk1hx)
- add: alc\_comp supported in original meter
- fix: cw side tone shift for for display, was using incorrect rx dsp mode
- add: re-added some diag info to seq msg
- fix: vertical text padding on spectrum grid now spaces correctly in DX mode
- fix: null audio phase buffer would cause crash for phase2 (not that phase2 does anything atm)
- change: ok/cancel/apply buttons on setup form become disabled if a save/load is in progress. Crossing of the setup window does nothing but hide it. Cancel will reload DB and close form, OK will update



**internal settings only and not save out xml file. Apply does the same but also updates xml file. Xml file written out when Theits shuts down. All of this behaviour is existing, except for the enable/disable of buttons and a small label to show activity. Even changing Region will cause an update to the DB + xml file. Saving the state of over 1800 controls is a slow process, upwards of 7 seconds. (now a non issue due to change to SaveVars below)**

- fix: PS form does not set attenuate tx setting unless it needs to. Previously it was setting it even if attenuation changes were not being made, 10 times a second**
- add: spectrum scale numbers now highlight when hovering over with mouse (DirectX only)**
- fix: crash issue reported by vk1hk when disable\_ui\_mox\_changes was unchecked and mox pressed**
- change: on exit we join any existing save thread and wait for it to happen, then perform final save**
- fix: changing setup max/min spectrum will update the waterfall range if sync waterfall is selected**
- change: Database.SaveVars now uses Table.Rows.Find and associated primary key instead of Table.Select. Speed of saving database settings is vastly improved**
  - fix: issue with psform accessing setup form before it had been instanced. This will need further work at some point (auto attenuate check box)**
- fix: bandstackupdate initialisation issue where array would be out of bounds. A fudged solution was in place previously that would always use vhf13 during initialisation state. Depending on end user band stack setup of vhf13 this could cause start up crash.**
- change: restored plot order for panadapter, grid before data, undoes d4 change**

- fix: vertical inbetween (minor) lines now drawn if lower major line is off left edge of spectrum
  - fix: US 60m channelised bandstack now works as intended. Changes will only be saved if on an expected slot frequency unless using 'extended' mode. If you click 60m when not on a channelised frequency, the closest one will be selected
  - add: band stack add to 60m for regions other than US
  - fix: VFOBfreq and CTUN state now recovered, not previously read back in
  - fix: on app start and CTUN enabled rx passband will be on correct frequency and display will be in previous position
  - fix: wideband minimize and resize issues fixed
  - add: first pass of SEQ logging, access through Setup->Tests->Show SEQ log button. Just plain text at the moment. Numbers are delta from expected sequence number expected. 40 slot ring buffer per DCC0-7. When SEQ error occurs (ie not expected next in sequence) a snapshot of that buffer is taken. 20 snapshots in total, s0 being most recent.
  - add: uV (rms) option for meter text. Changed through setup, or by clicking the text area of the meter. It will cycle smeter, dbm, uv.
- Feature requested by wa1oxt**
- change: tune meter type and tune power now not restored with tx profile
  - fix: issue found with band stack frequency assignment, did not fix shift issue (see d6\_2)
  - fix: sync vfo's was not setting dspmode before changing frequency. Consequently cwshifts were applied when they shouldn't have been if leaving a CW bandstack entry
  - add: anti alias option in Setup->Display. If you want sub pixel line widths and no jaggies enable this, but there will be some GPU overhead, really noticeable on GDI+, no discernible impact when in

## **DirectX**

- **fix: fix to band stack issue when cw is on a given slot**
- **add: swr\_pwr now stored if selected during tune step. Also now available from setup form Transmit tab**
- **add: added pwr\_swr split meter in original meter view**
- **fix: mouse wheel over vfo when vfo highlighted in blue(selected) deselects and enables mouse wheel vfo changing. This issue was caused by tidying up the multiple calls to vfo updates when pressing enter in a vfo box**
- **fix: z-order on vfoahover panel moved to topmost, the underline now shows on mouse hover**
- **change: leds updates in Setup->H/W stop when not visible, and the timer doing the checking drops from 100 times a second to twice a second**