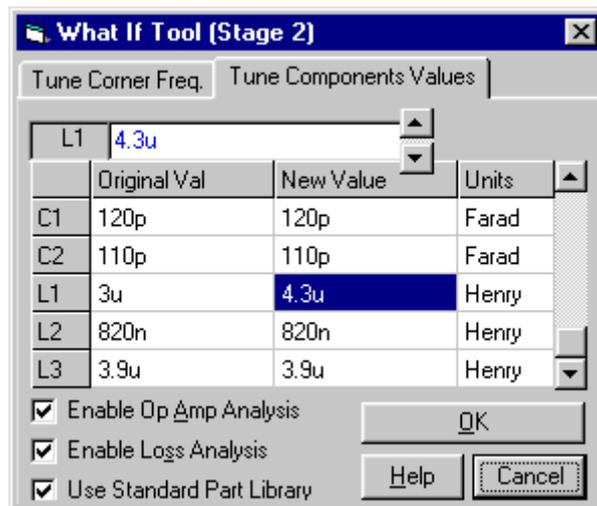


# *Super* FILTER Professional Ver 4.0 news release

The new Super FILTER Professional ver 4.0 continues the success of the worldwide leading software for the design of DIGITAL, ACTIVE, and PASSIVE filters. The program combines mixed analog and digital fast synthesis or analysis of a desired filter featuring in addition a new What-If tool, Return Loss analysis with improved impedance matching, Signal Generator with Manchester Encoding and Advanced triggering mode for the Oscilloscope tool.

## **New additional Optimizations and Automated tools:**

**What If Tool** – This new tool allows you to change the values of any component in your design and get response when you type the new value. With the What If tool you may vary the value of any resistor, capacitor, inductor or operational amplifier and evaluate the result in frequency or time domain and on any of the impedance graphs.



**Return Loss Analysis** – Graphic Input and Output Return Loss analysis now available under the View menu.

**Improved Impedance Matching Analysis** - Return Loss and Smith charts can now analyze the reflection coefficient with 4 simulation options:

1. 50 Ohm
2. 600 Ohm
3. Using R1 or R2 within the stage
4. Using previous stage Zout or next stage Zin

**Digital Group Delay Equalizer** - for the digital domain. (Previous versions offered an analog Group Delay Equalizer only.)

**Signal Generator tool** for analog, digital or binary data sources as well as FSK and PSK sources, with Manchester Encoding (new). The signals include: Sine, Square and Triangle waves, White noise generator, Binary Data and Random Data, FSK and PSK signals.

**User Defined Signal** - The Signal Generator includes an option to load a user's defined signal. This allows you to capture real data sequence using a logic analyzer, and to use it as a signal source to further simulate a filter design. Another new feature is the LOOP option that allows you to repeat the given sequence in permanent loop.

**Oscilloscope analysis tool** for time domain tests measurements, with new advanced triggering options.

One Shot – this option allows you to simulate the response of the filter running once.  
Trigger Every [Sec] – this option allows you to repeat and store the response of the filter to an ongoing signal. This option can be useful to capture an eye pattern of a modem filter, with the response to a binary or multilevel digital input signal.

**Spectrum analysis tool** for frequency domain tests measurements. Includes a Fast Fourier Transform (FFT) with increased window size of up to 2097152 points. Allows a smaller bin size and higher frequency resolution.

**Larger Network Library:** There are 31 new networks: 14 Active, 4 Passive, and 13 Switched Capacitor Filters:

**Active Filter:** 14 new networks (Net-539 through Net-568) that provide BPF and APF with a support for higher Q requirements, as well as higher Gain-Bandwidth product. The new addition supports biquad filters with both finite and infinite zeros Q as well as imaginary only and or complex zeros.

**Passive Filters:** 4 new networks are now available (Net-271 through Net-274) to simulate complex impedance, and for impedance matching.

**Switched Capacitors Filters:** 13 new networks: (875, 876, 877, 882, 883, 885, 886, 889, 890, 891, 892, 894 and 898).

**Digital Register Optimization:** Quantization errors are critical in some designs. The optimizer rounds or truncates the polynomial coefficients of either IIR or FIR filters to best fit the ideal response. You specify the register type you use Fix or Floating Point and the length of each field and the optimizer will round or truncate the coefficients to minimize the quantization error. It is possible to export the coefficients of the digital filter for programming the DSP in a binary/hexadecimal code.

**Update for standard components values library** files Parts.Lib and OP-AMP.AMP includes commercial up to date values of resistors, capacitors, inductors and operational amplifiers (Op. Amps).

### **Summary of the new features:**

- The What If tool allows you to change the value of resistor, capacitor, inductor or op-amp, and view the immediate response for the change.
- Graphic Return Loss analysis allows you to measure the impedance matching at the input and the output of each stage.
- Advanced Reference impedance options allow you to match a stage to the next stage or to any arbitrary impedance.
- Improves the Smith Chart and the Return Loss analysis
- Digital Group Delay Equalizer - for the digital and for the analog domain
- Manchester Encoding for the signal generator tool
- Loop option for repeating signal patterns forever for the signal generator tool
- One Shot and Trigger Every option for the oscilloscope analysis tool
- Larger window size with up to 2097152 points for the Spectrum Analyzer tool, with higher frequency resolution
- 31 new networks: 14 Active, 4 Passive, and 13 Switched Capacitor Filters
- Supports more than 260 analog network topologies including GIC's and FDNR's.
- Update for standard components values library files Parts.Lib and OP-AMP.AMP for commercial up to date parts values.
- Faster and more powerful Digital Register Optimization for IIR and FIR filters
- The program runs with WINDOWS NT, XP, Vista, Win 7, Win 8.1, Windows 10.