



“Automated Parameter Synthesis” featured in FilterSolutions® from Nuhertz Technologies

Automated Parameter Synthesis (APS) includes the well-known FilterSolutions delay equalization technique, employing Quadruplet Zeros. In achieving delay equalization, the stopband is shaped around off-axis stopband zeros to alter group delay, while maintaining equiripple or other shape responses. FilterSolutions’ constricted equiripple function automatically constricts ripple to a percentage of the stopbands and/or passbands by direct synthesis. The technique saves significant time compared to manual placement of stopband zeros and reflection zeros.

In both cases, Quadruplet Zero and APS, the L and C values are calculated directly from the filter’s transfer function*. The resultant recalculations will restore the maximally flat, equiripple, or constricted equiripple characteristics of the passband for both frequency symmetrical and asymmetrical functions.

The technique represents a major increase in efficiency of the filter design itself: the circuit will be realized with a reduced number of physical components. As embodied, the APS interface uses manual sliding tuners to move stopband zeros.

For further information, please visit: www.nuhertz.com.

* The transfer function describes the filter’s response characteristics (input and output dynamics), as a ratio of two polynomials. The poles and zeros refer to the real coefficients of the numerator and denominator of the function.

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