ANADIGMASSISTANT™ TOOLS OVERVIEW

AnadigmAssistant™ tools automate the construction of complex analog functions involving multiple Configurable Analog Modules (CAMs) in AnadigmDesigner®2 EDA software. Abstracting the design process up to the application level, these intelligent synthesis tools embody design knowledge of high-level functions and automate the design process using CAMs as building blocks.

AnadigmFilter® Filter Synthesis Tool

Interactive Filter Synthesis with Automatic Circuit Implementation

- Design complex, high order filters in minutes
- Repeatable filter designs
- Available filter types include low pass, high pass, band pass, band stop
- Available filter approximations include Bessel, Butterworth, Chebyshev, Inverse Chebyshev, Elliptic

Building filters used to be a tedious manual process. Now it's easy and automatic with our AnadigmFilter® filter synthesis tool.

The AnadigmFilter® tool lets you design and implement high-performance filters in a fraction of the time required by "cut and try" methods. With AnadigmFilter®, you merely select the type of filter you need, adjust the parameters in an automatically generated bode plot, then press a button to send your design to the AnadigmDesigner®2 software. Your filter is built automatically using the Configurable Analog Modules (CAMs) in AnadigmDesigner®2 – and ready to send to the FPAA hardware for simulation and testing. Even complex filter types – such as Inverse Chebyshev – are easily designed with AnadigmFilter®.

Unlike any other automated system, AnadigmFilter® designs are correct by construction. The tool automatically tests the realized CAM parameters and alerts you if any parameters vary more than 1% from the requested value. This allows you to change the design to get a better fit. Or you can easily download the design to the FPAA and test the actual hardware to see if the parameter variations can be ignored in your application.

With AnadigmFilter®, you obtain an integrated design with drift-free, complex filter implementations that can be reconfigured statically or dynamically to adjust to changing requirements, environments, or equipment aging.

The One-Minute Filter Design

- Select the filter type
- Select the filter approximation
- Enter filter specs as numbers or drag the parameter lines to the desired values
- Transfer the filter to the AnadigmDesigner®2 tool
- Download the filter to the Anadigm® FPAA

AnadigmPID PID Controller Synthesis Tool

- Fully automates the development of analog “proportional, integral, derivative” (PID) controller circuits
- Reduces to minutes the time required to design and implement one of the most common types of control circuits in industrial, medical, and communication systems
- Simplifies PID control loop design for motor control, tunable lasers, level and flow control in chemical processes, temperature control, and many other applications

Building a “proportional, integral, derivative” control loop used to require considerable expertise in analog design techniques as well as an intimate knowledge of the process being controlled. Now Anadigm® has automated the analog design portion with the AnadigmPID tool. Simply specify the top-level control coefficients, and AnadigmPID builds your controller circuit using Configurable Analog Modules (CAMs). Simulate the results in AnadigmDesigner®2, then download to a field-programmable analog array for testing and validation. AnadigmPID makes control loop design and implementation that simple.

PID control loops are used for a wide variety of applications, including motor control, tunable lasers, level and flow control in chemical processes, and temperature control. With AnadigmPID, you specify control system objectives using a familiar form and language, so you can focus on the process rather than the nuances of analog circuit construction.

Use AnadigmPID to construct your controller circuit in the analog domain, and you can replace a multitude of discrete components with a drift-free FPAA. And best of all, your implemented control subsystem can be controlled in real time by the embedded system processor – allowing you to build control loops whose coefficients adjust as the system moves from start-up to quiescent. You’ll see a major improvement in system performance compared with discrete implementations, as well as new opportunities to differentiate your products with innovative control circuits.

The One-Minute PID Control Loop Design

- Choose the controller type
  - P, PI, PD, or PID
- Choose the controller constants
  - Proportional (K_0)
  - Integral (Ki)
  - Derivative (Kd)
- The software builds the controller circuit automatically using CAMs from the AnadigmDesigner®2 library.