SmartCtrl

Control Design Software for Power Electronics
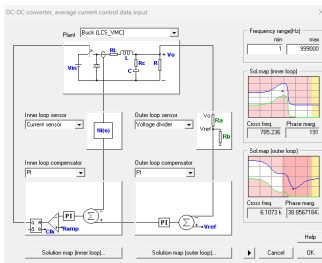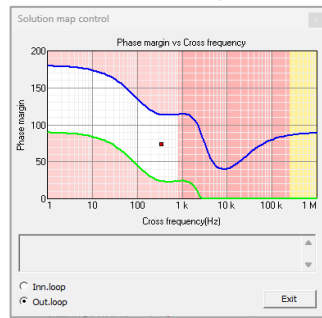

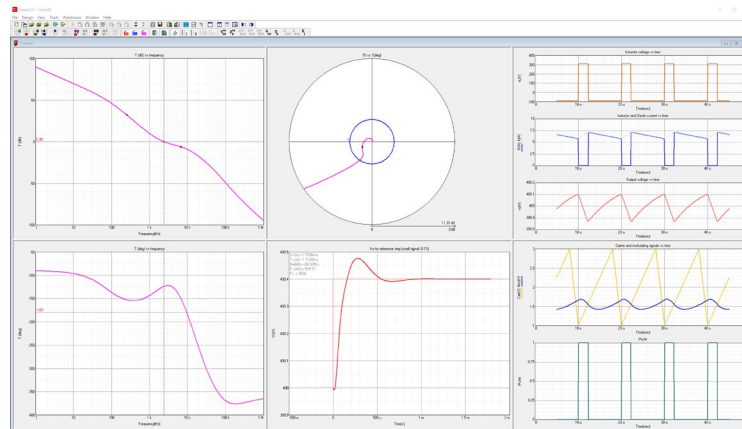**Power Smart Control SL**

Analog and Digital **Control Design** for Power Electronics

Predefined topologies, imported transfer function and frequency response
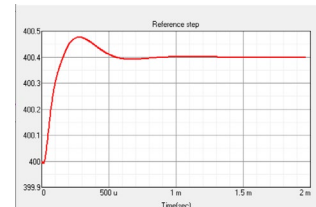

Solutions map

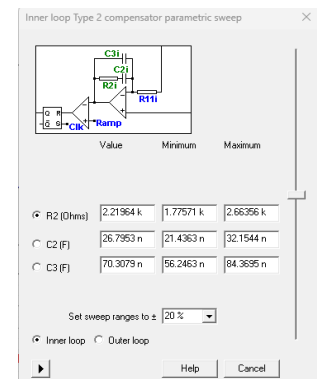**Real time updated plot and design results**

SmartCtrl allows you to easily perform a complete stability analysis of your power converter in order to perform a complete adjustment of the regulators.
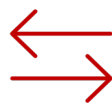
Transient response

Sensitivity Analysis

Simple

- Friendly user interface
- Steady-state waveforms
- Solutions Map for easy controller design
- Interactive plots
- Seamless integration with any simulation software

Versatile

- DC-DC, DC-AC, AC-AC and AC-DC Converters
- Power Factor Correction Converters
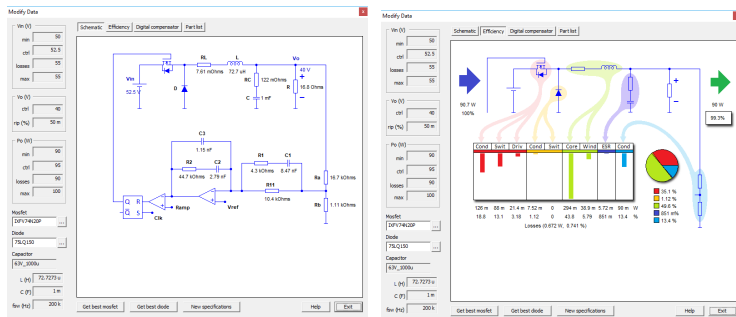- Equation Editor to define the transfer function
- Different Control Modes

In-depth knowledge

- Multiloop control structures
- Capability to design digital controllers
- Sensitivity analysis
- Audio-susceptibility

SmartCtrl provides a perfect combination of predefined topologies and compensators, and custom designs with a powerful Equation Editor to create your own transfer functions for all elements of the power converter: plant, sensor and compensator. Import the frequency response of a system and export your control design to any simulation software.
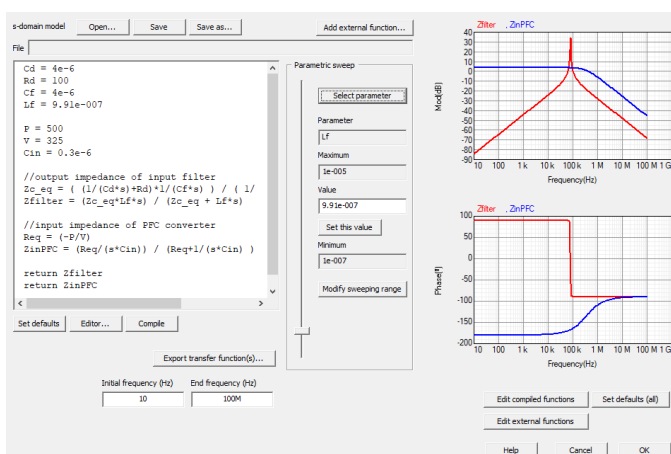
Control designs from Specifications

Starting from a specification, design quickly and visually the best control for your converter and get the results for an analog or digital control. SmartCtrl includes the complete part list with magnetics design specifications.
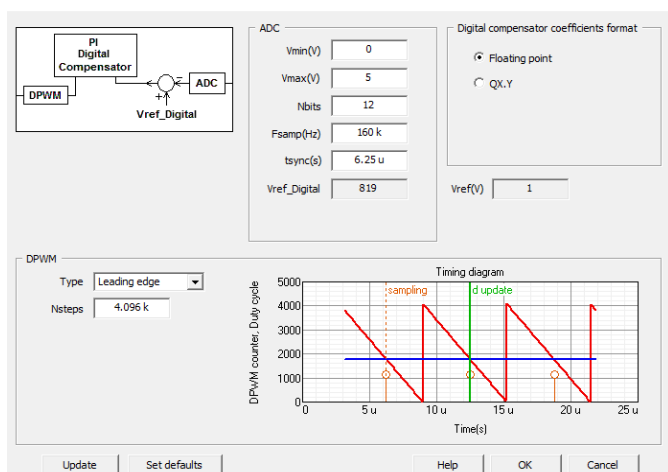

Import the frequency response

SmartCtrl has a wide set of predefined topologies for control design. It is also possible to import the frequency response of any converter, regardless of its topology.

Make and Edit your own Analytical Model

Using the Equation Editor, it is possible to edit your own analytical model of any specific converter with parameter sweep capability, defining the plant, sensor or compensator.

Solutions Map

Optimize your design using the solutions map. Navigate the cursor within a stable solutions space, which will aid you with the selection of the optimal design.
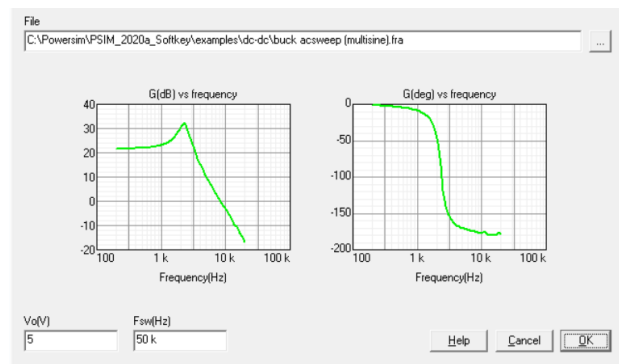

Analog and Digital Control

Just select the checkbox to define which solution you need: Analog predefined compensators (Type I, II & III PI & PID) or Digital predefined compensators (PI & PID with ADC and SPWM Effects).
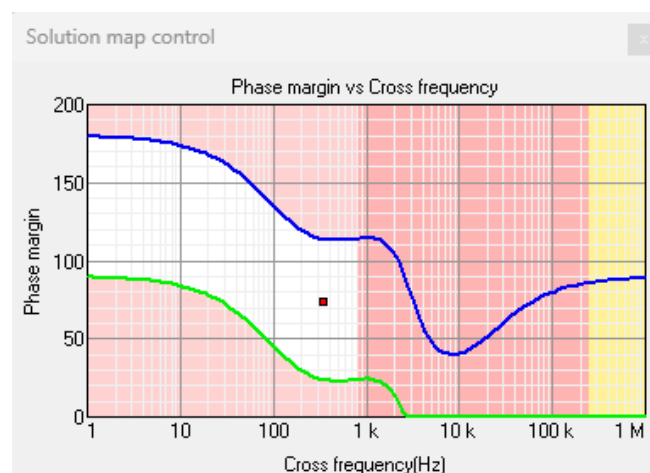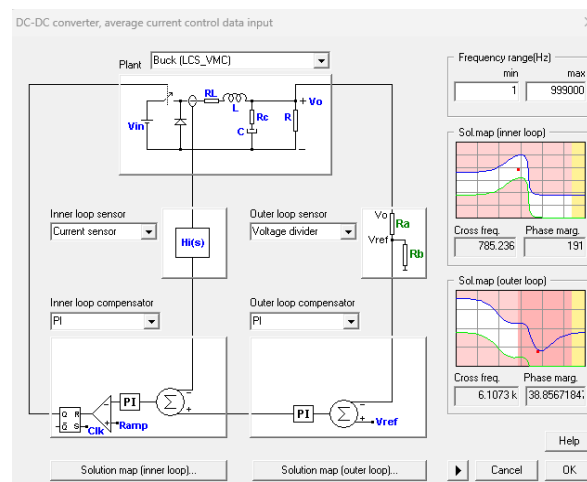

Multi-loop Control Structures

Average-Current Mode Control and Peak-Current Mode Control are supported in SmartCtrl. Analyze how robust is your control.

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