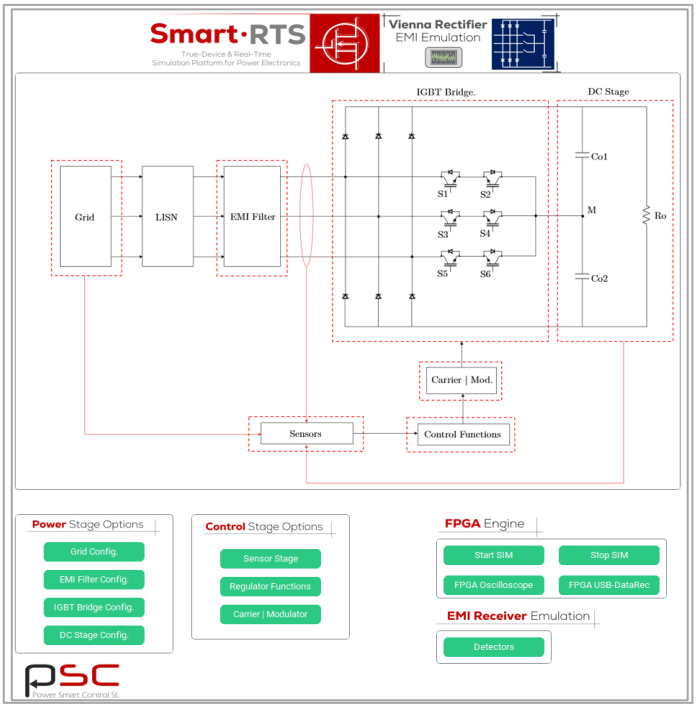
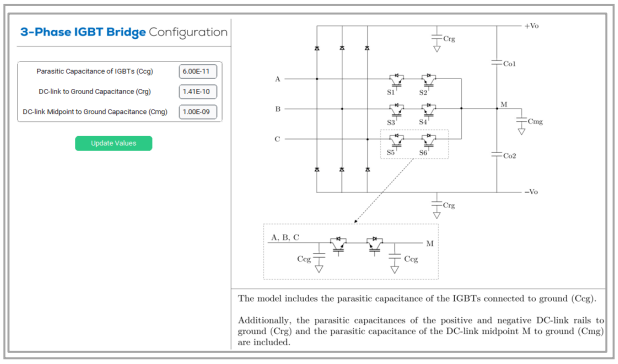
Smart·RTS

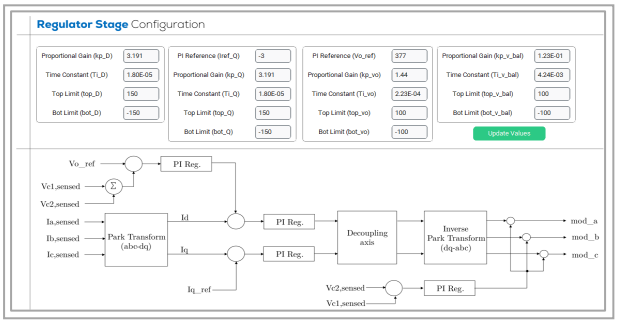
True-Device & Real-Time
Simulation Platform for Power Electronics

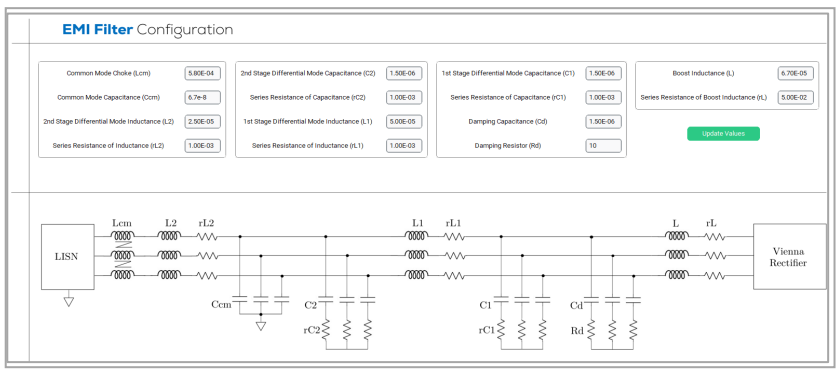
Vienna Rectifier
EMI Emulation

Real-Time Emulation for Three-Phase Vienna Rectifier and EMI Detectors







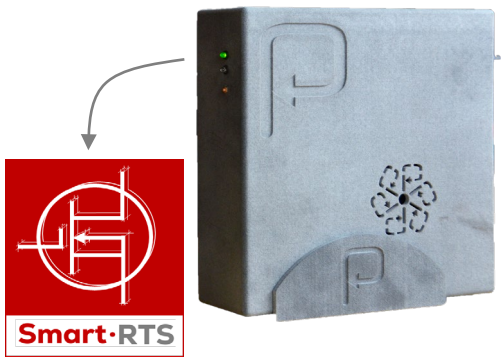


User-Friendly User Interface

Modify the parameters of the electrical models and control functions and observe the simulation result online and in real time.

Proprietary simulation engine and models running in an advanced hardware device

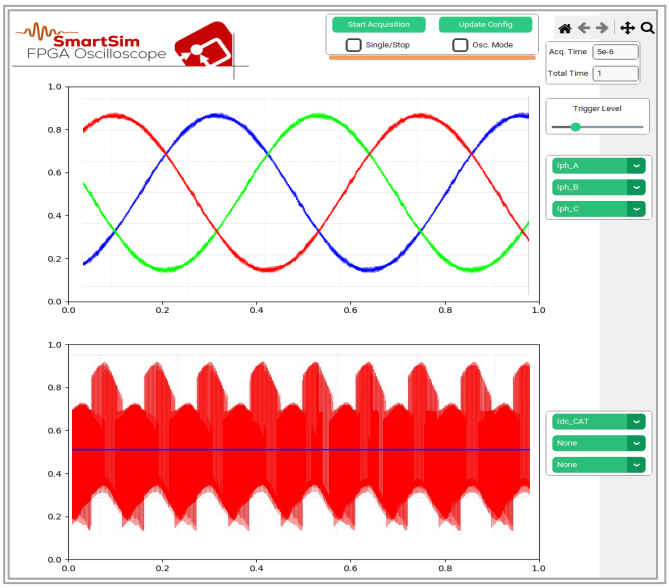
- Long simulation times (seconds) with very small time step (tens of nanoseconds) to increase frequency resolution
- Real time simulation of differential and common-mode currents
- EMI receiver emulation: Peak, Quasi-peak and Average measurements
- EMI filter design
- Control design



PSC
Power Smart Control SL

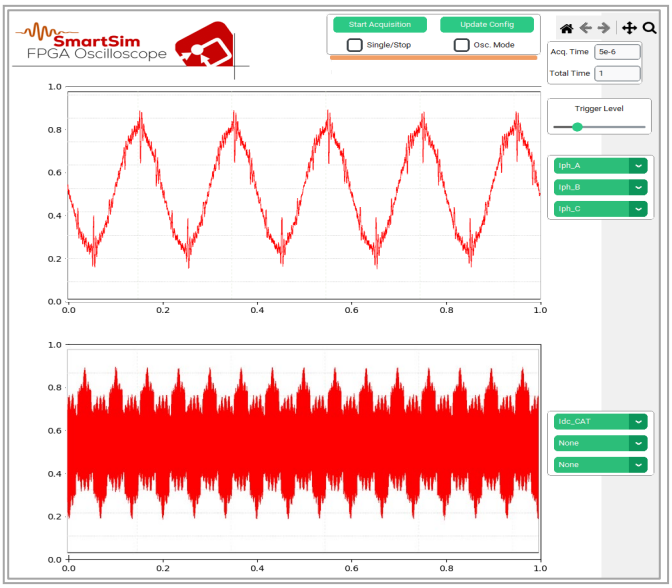
Real-time simulation allows to verify if the control loop is stable

The interaction between EMI filter and the regulated converter can cause the control loop to become unstable. The real-time simulator helps to design stable control loops.



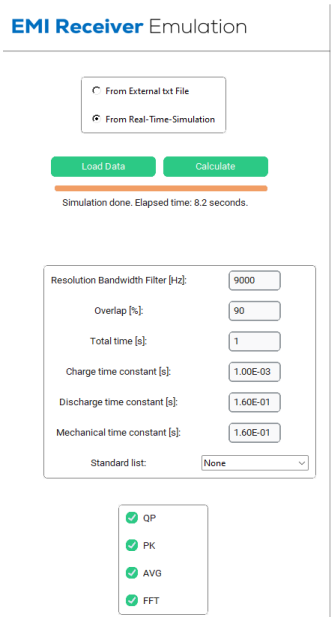
Common Mode and Differential Mode current are obtained separately

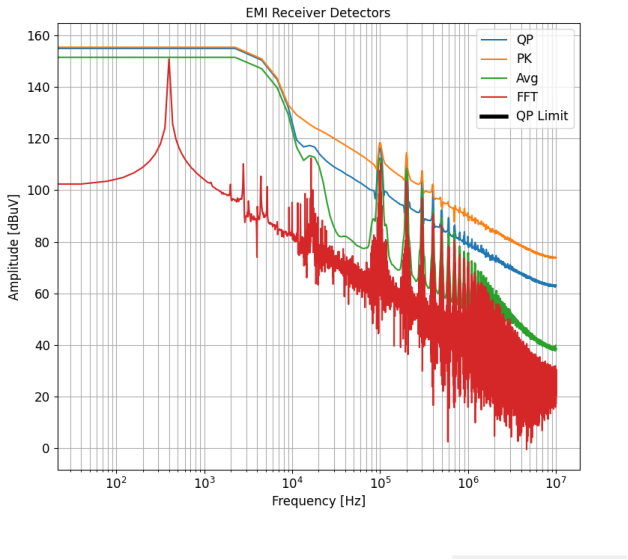
DM and CM filter can be designed independently in order to use some optimization algorithm. The harmonic content of each current is exported directly to the EMI receiver emulator.



EMI Receiver Mode

The parameters of the Quasi-peak detector are fully parameterizable to obtain an accurate result for different EMC standards.





Features

- Full parameterization of switches model, layout model, EMI filter model, grid model
- Lay-out parasitic fully supported
- Real-time visualization of switching waveforms
- Real-time visualization of internal variables: dq currents

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