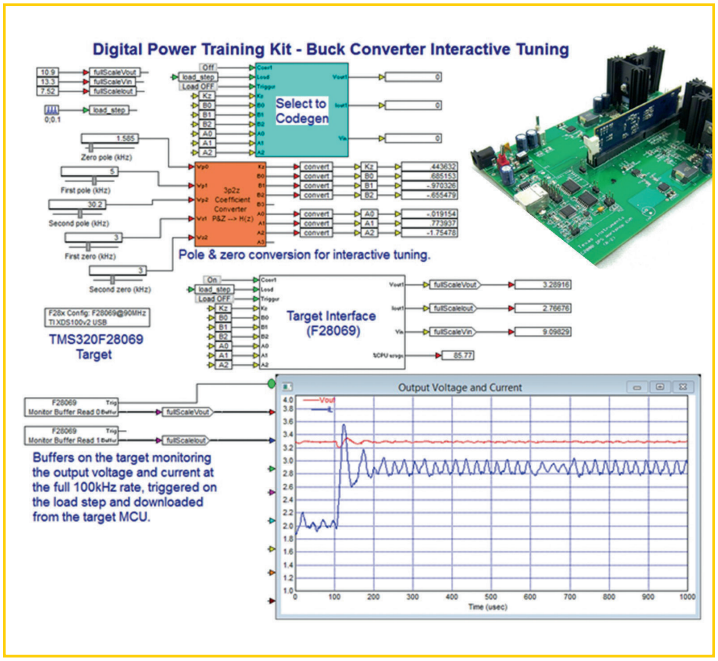
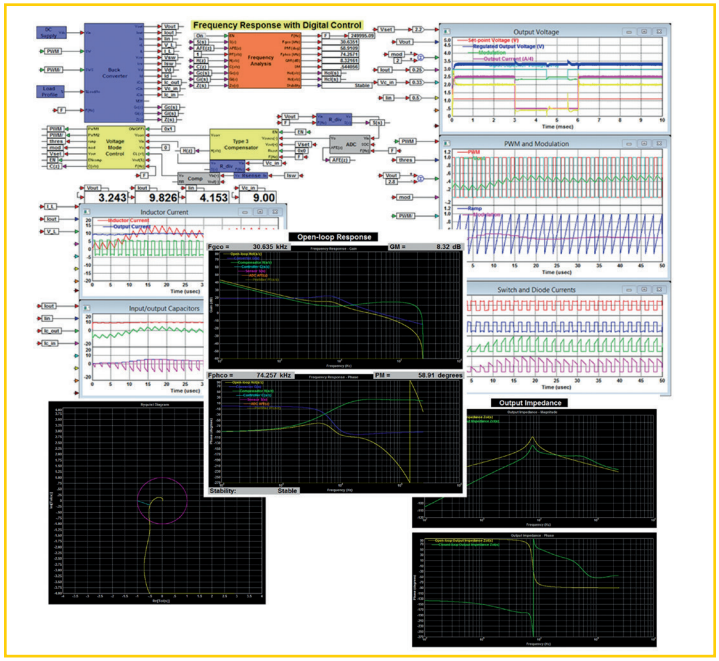
DATASHEET

Digital Power Designer™

ALTAIR Embed



Interactive tuning of the compensator poles and zeros while connected with the target hardware running as a hardware-in-loop simulation.



Model-based frequency response analysis of a digital control loop performed concurrently with the time-based simulation using the same pre-built, high-level simulation blocks

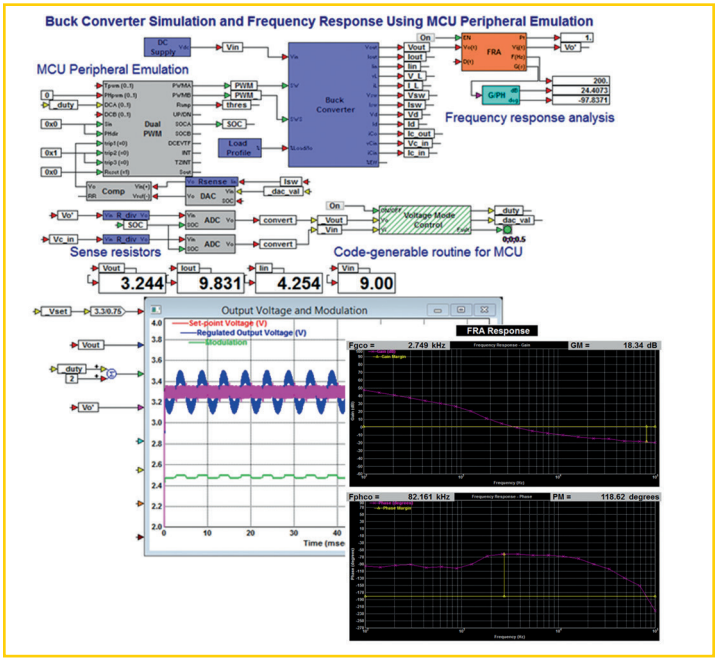
The **Digital Power Designer** is an add-on to Embed. Together with **Altair Embed**, it is aimed to be a complete tool for the design and development of digital power supplies and power conversion equipment.

"We have been successfully developing power conversion equipment with VisSim and the Digital Power Designer, now expanded in Embed, for more than 15 years and have been extremely satisfied with the performance and the ability to rapidly produce productionready designs directly from the Embed IDE, without the need to use a single line of C code."

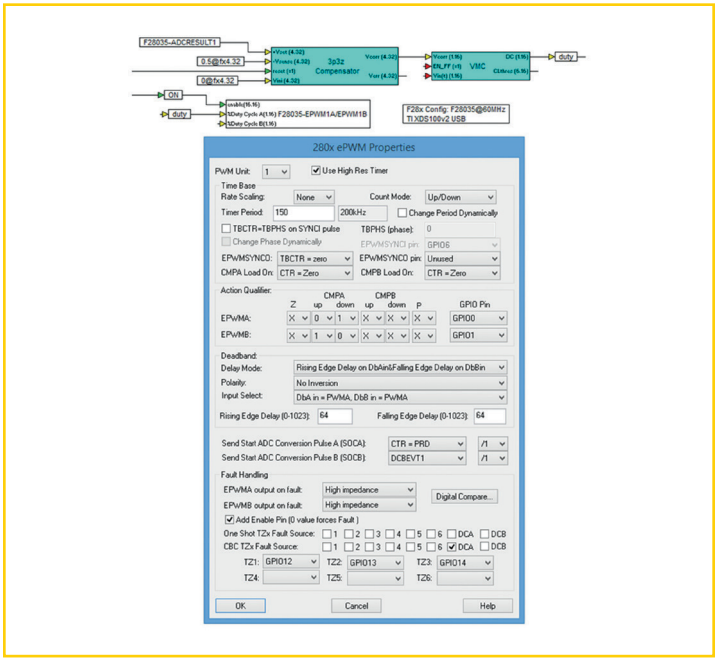
Marco Donvito,
R&D Department,
CEG Elettronica Industriale S.p.A.

FEATURES

- Ready-made simulation blocks for complete simulation and verification of power converters within minutes.
- Set of code-generable blocks for use in simulations and for the creation of algorithms for automatic C code generation and downloading to the microcontroller hardware.
- Convert analog designs to digital designs.
- Perform model-based frequency response analysis and AC sweeps.
- Tools for compensator design.
- Debugging tools for TI C2000 microcontrollers.
- Easily create diagrams for the interactive verification and debugging of algorithms directly on the control hardware (processor-in-loop and hardware-in-loop).
- Rapid and simplified experimentation of control scenarios to assist in the optimal selection of digital and analog control techniques and configurations.
- Hundreds of worked examples demonstrating converter performance and for rapid development of power conversion systems including simulation, code generation and interactive hardware-in-Loop diagrams



AC sweep analysis of a digitally controlled converter performed directly on the simulation diagram using emulated microcontroller internal peripherals and the actual code-generable routine.



Ease of control loop creation using the digital power designer together with the Embed blocks. The diagram can be interactively run in the microcontroller RAM or flashed for final production.

CONTENT

Numerous high-level and completely configurable blocks including power converters (including buck, boost and buck-boost converters, multi-phase converters, Sepic, Cuk and Zeta converters, push-pull, half-bridge and full-bridge converters, forward and flyback converters, AC-DC converters, DC-AC Inverters and PFC converters), analog and digital compensators, power converter controller blocks (including voltage mode controllers, peak and average current mode controllers, PFC and hysteretic controllers), configurable PWM generators and controllers, analog and digital filters, sensor models and fully-configurable sources and loads. A set of simulation blocks for digital control simulations emulating TI C2000 MCU peripherals including ePWM, ADC, DAC, eCAP, comparators and GPIO, numerous code-generable blocks for digital control algorithm development, compensator design tools and tools for the conversion of analog to digital designs. Frequency response analysis tools.

"A key benefit to using Embed is its code generation capability and how quickly and fast it works.
The speed of how its drivers work and being able to interface directly with our ROM code was really the most important benefit."

Dave Wilson,
Senior Motor Systems Engineer,
Texas Instruments

APPLICATION AREAS

- Analog and digital power supplies.
- DC/DC converters.
- LED lighting.
- Electric vehicles.
- Uninterruptible power supplies
- Power conversion equipment.
- Power factor correction converters.
- Inverter design.
- Rectifiers and battery chargers.

ALTAIR Embed

For more information

Authorized Distributors
EMBEDDED SYSTEMS SOLUTIONS
www.embeddedindia.com
#S 606, World Trade Center, Bangalore
altairsales@embeddedindia.com
080-6764 8888/36, +91 98450 83528
www.embeddedindia.com/contact.html