

Spanish software optimizes design of new mobile device chargers

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Credit: Carlos III University of Madrid

An electronic power converter is a system that adapts electric energy from a source to a specific load need. "For example, it's the system that obtains energy from the electricity grid through a socket and adapts it to charge the battery of a mobile telephone or other devices," said Andrés Barrado, one of the UC3M professors who created this company.



This type of system is used in sectors such as the aerospace industry, healthcare, communications and transportation. "Power electronics is going to enable the technological development of other disciplines such as electric transport, renewable energies, communications and even electromedicine," said Antonio Lázaro, another UC3M professor who created the program and company co-founder.

Starting with a few specifications, such as <u>electric power</u> or entry and exit tension, the program provides the designer of a new electronic power converter a map of solutions from which to choose. This facilitates and accelerates the designer's work, as it is not necessary to resort to mathematical calculations that can often be quite complicated. "The designer is provided with automatic code generation, which will give them a solution that is directly embeddable in their system," Lázaro noted.

Three versions of this software, called SmartCtrl, have been developed to date. It has been marketed in more than 35 countries through nearly a thousand licenses to research centers, companies and universities, with clients like Fuji, General Motors, Google, LG, Mitsubishi, NASA, Panasonic, Renault, Samsung and Toshiba, among others.

The practicality of the software derives from the design of power converters, which convert energy from an alternating current to a direct current. However, this use is now extended to the control of power inverters, rectifiers and the digital implementation of controls in SoC platforms. "These new lines of development open possibilities for generation of software-hardware control platforms, thereby creating an integrated, innovative and widely applicable product in the <u>power</u> <u>electronics</u> sector," said company sources.



Provided by Carlos III University of Madrid

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