Integrated Digital Control

Press Release

Systel announces the availability of the IDC2000 ICs family Lighting Evaluation Kit at the Light and Building Fair 2006 in Frankfurt

Nes Tziona, Israel, April 23, 2006 - Systel Development and Industries Ltd., a mixed-signal semiconductor company that provides digital System on Chip/SoC power control and management controller solutions for the power conversion industry, will unveil and demonstrate at their stand in Frankfurt Fair an **Evaluation Kit** of Systel's IDC2000 ICs family for lighting applications which Systel is premiering at this event.

This Lighting Evaluation Kit contains two hardware evaluation boards. A dimming ballast board with ballast passive terminations (detachable tank circuits) for each channel and a wall control board. In addition, this kit includes two PC package S/W one is the PDK-3-L design tool, the second the PLC- Link™ Tester.

The PDK-3-L is the design tool developed by the company to upload the desired ballast power circuit configuration and the chosen control functions from a library into the controller.

In addition, this design tool allows the power engineer, by adjusting the parameters of the control functions,. to "match" the controller to the power components and achieve the desired characteristics of the ballast during the development process of the end product. The designer will be able to modify the parameters on-the-fly in a protected environment and monitor on real time their influences in the power circuit signals and in the lamp parameters during the warm up, ignition and dimming stages.

The **PLC-Link™ Tester** is a PC S/W package for BER test of the Systel's powerline communication method and protocol which its modem is embedded in the IDC2000 ICs family. The communication is being tested in the laboratory or in the field by sending repetitive commands packages from the wall control to the ballast over the power line. The PC S/W verifies the correctness of the received message by comparing the transmitted and received messages, log in the results and provides the BER calculation obtained in the test.

The **Multi-Channel Dimming Ballast Board** with a 150W maximum power has 8 output driver channels with a max power of 56W each. These channels are arranged in two different power configurations. 4 channels connected in a common high side power switch topology, the other 4 channels based on separate half bridge power switches topology. These particular topologies, described in Systel's USA patent *7,009,348*, are enabled by the IDC2000 architecture, and allow the implementation of dimmable or non-dimmable multi-lamp system of single or central ballasts.

In these configurations each lamp or group of lamps associated with a specific channel within either a fixture or residing in a different fixture can be controlled and protected separately. However single half bridge ballast configurations can also be implemented with this evaluation board.

This ballast board is equipped with the IDC2003E. This is an engineering version of the largest IC model of the Systel's IDC2000 ICs family that comprises all the functions available from this family. This IC is installed in a daughter board, to facilitate simple connection of the test instrumentation to each of the IC legs and accessibility to all the available functions of the silicon. This daughter board can be replaced with another one comprising the IDC2040/1 model. This is a version of the IDC2040 IC in a QFN-64L 9x9 package aimed to applications of up to 5 lighting channels

To exercise a central ballast (multi-fixture ballast) according to the reference design offered by Systel, the detachable termination can be located in fixtures remotely located from the ballast board and interconnected to it by 4 twisted wire cable for driving and feedback the lamp signals.

The **Wall Control Board** integrated with IDC2003E has two way power line communication (PLC) interface using the embedded PLC modem in the IDC2000 ICs. This board has all the typical man-interface command functions to fully exercise them operating the ballast evaluation board using the PLC communication. In addition, this board has 2 x RS-232 UARTs - serial communication interface. ports used to program the wall control by means of a PC or handheld with the desired functionality, and map it with the corresponding addresses of the control system components inter operating with it. In addition, it serves to set the addressable components which are accessible from the wall control. The RS232 interface also is used to test the PLC communication by means of the PLC-Link Tester in conjunction with the ballast board.

Lighting Evaluation Kit that allows the exercise with the PDK design tool a plethora of ballast configurations and the PLC is now available. “These design tools will allow ballast designers to optimize their ballast performance in a matter of days” said Arie Lev, Senior Power Electronics Engineer. “No matter what, the lamp or fixture configuration, the combination of digital control and design tools allows designers to optimize their application quickly and easily. The novel configurability of these Systel's ICs will allow the designer to customize with these IC's their most sophisticated control algorithms in an unsurpassed period of time, making real solutions which were impossible to achieve with analog-based controllers."

Systel experts invite you to visit our stand located at Hall 4.0 D92 to experience live demonstrations of the revolutionary ballast approach and controls powered by the IDC2000.

About Systel

SYSTEL is a pioneer in mixed-signal power and management developing propriety comprehensive digital based solutions. Its first application in power electronics was in 1993 when it unveiled a true on-line high performance UPS system implementing unique control functions in logic engines. The first generation of its digital power management solution for lighting was unveiled in 1998. Systel holds 7 key patents and has more than 17 patent applications pending that range from core technology and power control functions and communication methods to power topologies and systems supported by digital control.

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