Power Solutions for XILINX FPGAs & SoCs

ARTIX 7A15 to 7A200

Wide Selection of DC/DC power products for FPGAs

Infineon has a wide range of DC/DC power products for Xilinx FPGA/SoC families: Artix, Zynq, Spartan, Kintex, Virtex.

Shown below is a design for Artix Family using Dual & Single Analog SupIRBucks.

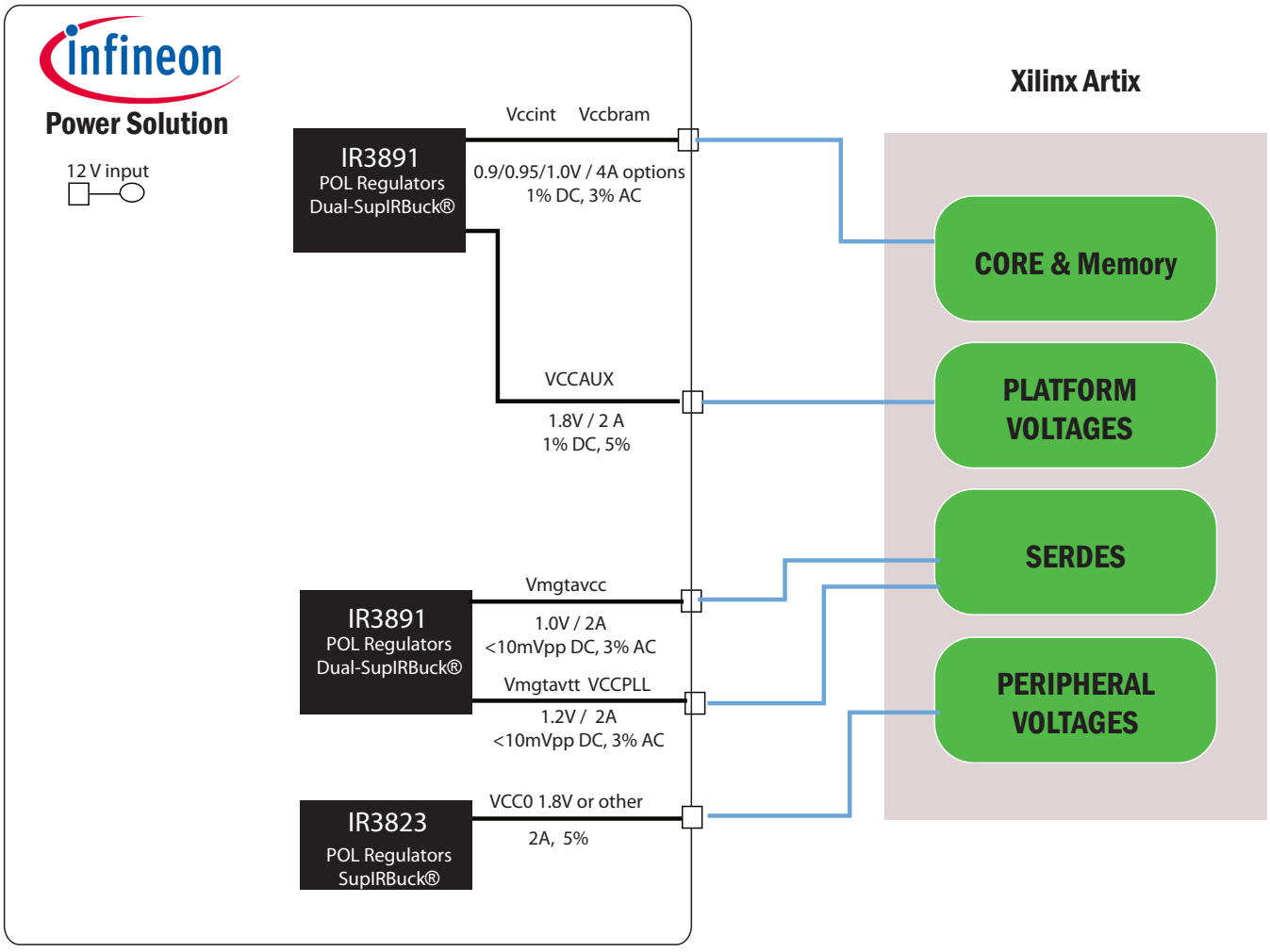
HIGHLIGHTS

Using Dual DC/DC Output Regulators for Tight Board Space Designs

Only 3 devices needed for 5 outputs, includes all FETs:

IR3891 Dual DC/DC POL Regulator
- Space saving package for two full regulators with integrated FETs
- Device 1: Core voltage and VCCAUX, Single resistor changes Vcore from 0.9V/0.95A/1V
- Device 2: Low ripple Regulator for SERDES voltages

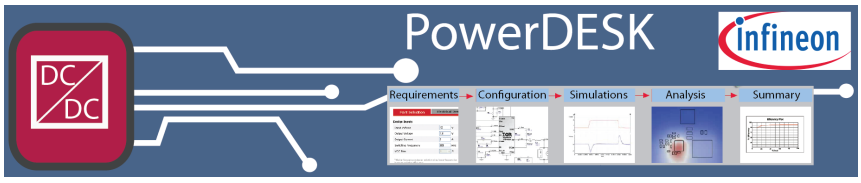
IR3823 3A Single POL for peripheral voltages: 3.3V, 1.2V, 1.8V, 2.5V from 1A to 3A. IR3883 alternative.



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PowerDESK DESIGN TOOL

The table below list the PowerDESK Design Tool files for each of the regulators.
Click the Device and URL in the table below to view the datasheets & design: schematics, components optimization.



https://infineon.transim.com/powerdesk

FPGA Power Section	Description	Device	URL
Core Voltage	VCCINT/VCCBRAM 1.0, 0.95, 0.9V – 4A	Analog: *IR3891 Dual 1.0V / 1.8V IR3891 Dual 0.95V / 1.8V IR3891 Dual 0.9V / 1.8V IR3823 1.8V / 2A Digital ** IR38060 1.0 / 0.95 / 0.9V	IR3891 1V and 1.8V http://go.transim.com/SCe
Platform Voltage	VCCAUX 1.8V – 2A		
SERDES Voltage	VMGTAVCC 1.0V – 2A	***IR3891	IR3891 - 1.0V and 1.2V http://go.transim.com/tbc
SERDES Voltage	VMGTAVTT 1.2V – 2A		
Platform / Peripheral Voltages	VCCO 3.3V, 1.2V, 1.8V, 2.5V / 1.5A	IR3823 IR3883	IR3823 - 1.8V http://go.transim.com/iaz

Design Notes:

1) Xilinx Artix core voltage varies from 0.9V, 0.95V and 1.0V depending on the Artix part numbers. Consult Xilinx datasheet for correct core voltage.

2) **IR38060 are PMBus SupIRBucks, Vcore voltage of 1.0V, 0.95V, 0.9V can be selected via I2C/PMBus without external changes.

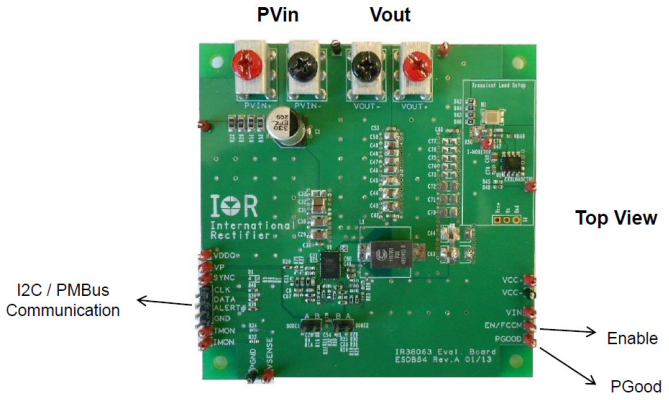
3) *Core voltage IR3891 (dual) with one resistor change, Rf2, get voltages: 1.0V, 0.95V, 0.9V paired with 1.8V VCCAUX. Space saving design.

4) IR3891 is a Dual Output DC/DC, ideal for space savings. Good for low noise SERDES. Space saving design.

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EVALUATION BOARDS AVAILABLE

Part	Evaluation Board	
IR3891	IRDC3891	view
IR3823	IRDC3823	view
IR38060	IRDC38060	view
IR3883	IRDC3883	coming soon



DC/DC Products - All Xilinx FPGAs

	Zynq	Artix	Kintex	Virtex
Core Voltage	Analog: IR3447/48 IR3895 IR3899 IR3898 IR3897 IR3891 IR3823 Digital: IR38060 IR38063 IR38064 IRPS5401	Analog: IR3897 IR3891 Digital: IR38060	Analog: IR3899 IR3898 IR3897 IR3823 Digital: IR38060 IR38062 IR38063	Digital: IR36021, IR3820x IR3550 , IR3742 Analog: IR3847 IR3848 Digital: IR38063 IR38064
Platform Voltages	Analog: IR3891 IR3897 IR3823 IR3883	Analog: IR3891	Analog: IR3892 IR3891	Analog: IR3892 IR3891 IR3899 IR3894
SERDES Voltages	Analog: IR3897 IR3892 IR3891 IR3823 Digital: IR38060	IR3891 IR3823	Analog: IR3897 IR3892 IR3891 IR3823	Analog: IR3847 IR3846 Digital: IR38062 IR38063
Peripheral Voltages	Analog IR3883	Analog IR3883	Analog IR3883	Analog IR3883 IR3899 IR3894