Power Solutions for XILINX FPGAs & SoCs

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 are designs options for Zynq UltraScale+, 16nm MPSoC Family.

HIGHLIGHTS

Scalable Design Options for Zynq UltraScale+ from ZU02 to ZU19

There are 11 variants of the Zynq UltraScale+ where the core rail can vary from 4A to 30A+. Combinations of Analog and Digital POL DC/DC with Integrated FETs can be combined to design a flexible solutions.

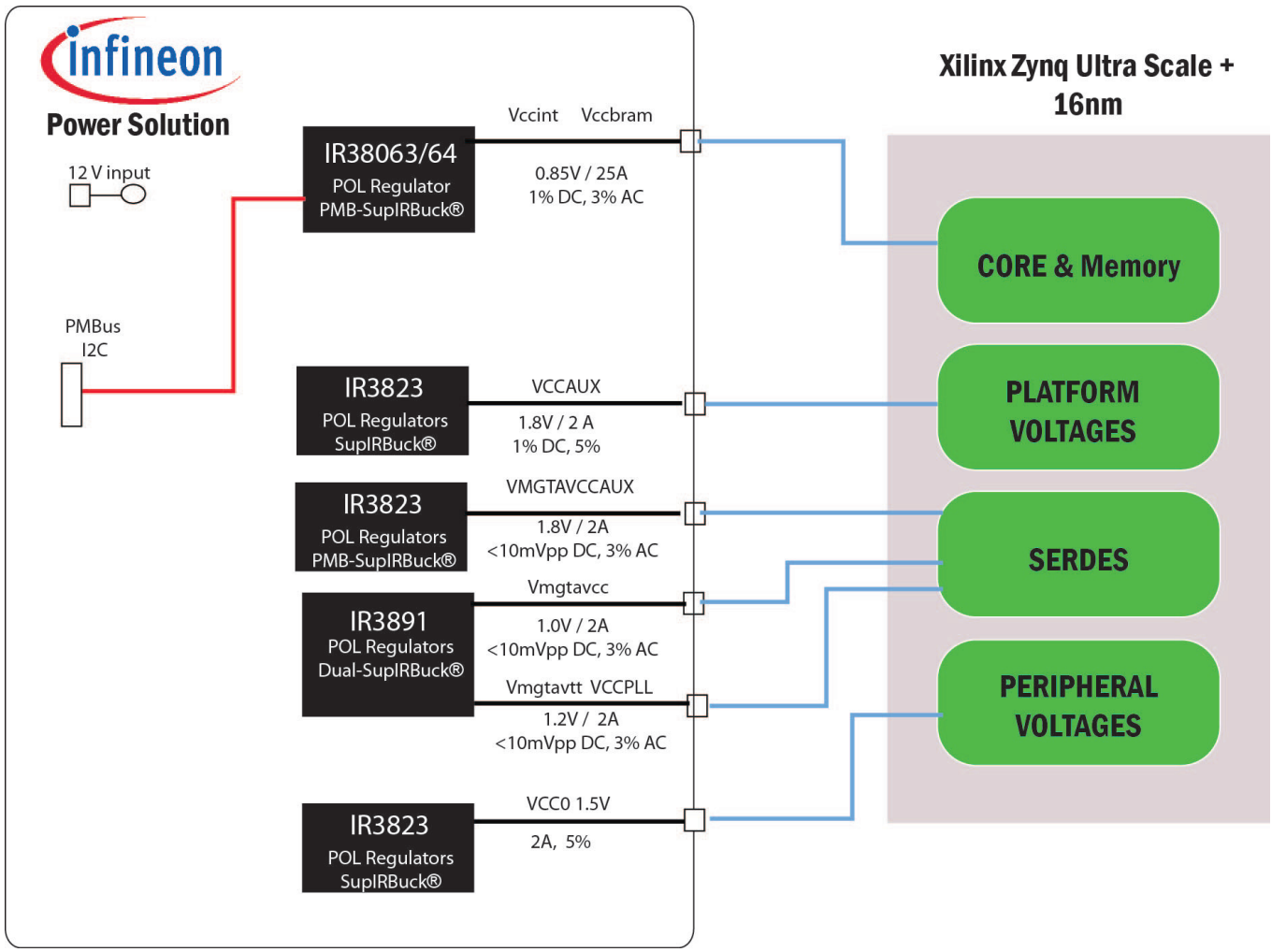
Zynq UltraScale+ 16nm MPSoC

IR38063 / 64 at 25A / 35A Integrated FET PMBus POL
- Delivers excellent efficient at best thermal ratings
- High DC accuracy <1%
- PMBus capability

IR3891 Dual 3A + 3A POL
- Low ripple Regulator for SERDES voltages
- Space saving package for two full regulators with integrated FETs

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

Higher current Zynq Ultra Scale+ Series examples: ZUEG15, ZEUG11 and higher



Zynq UltraScale+ 16nm MPSoC

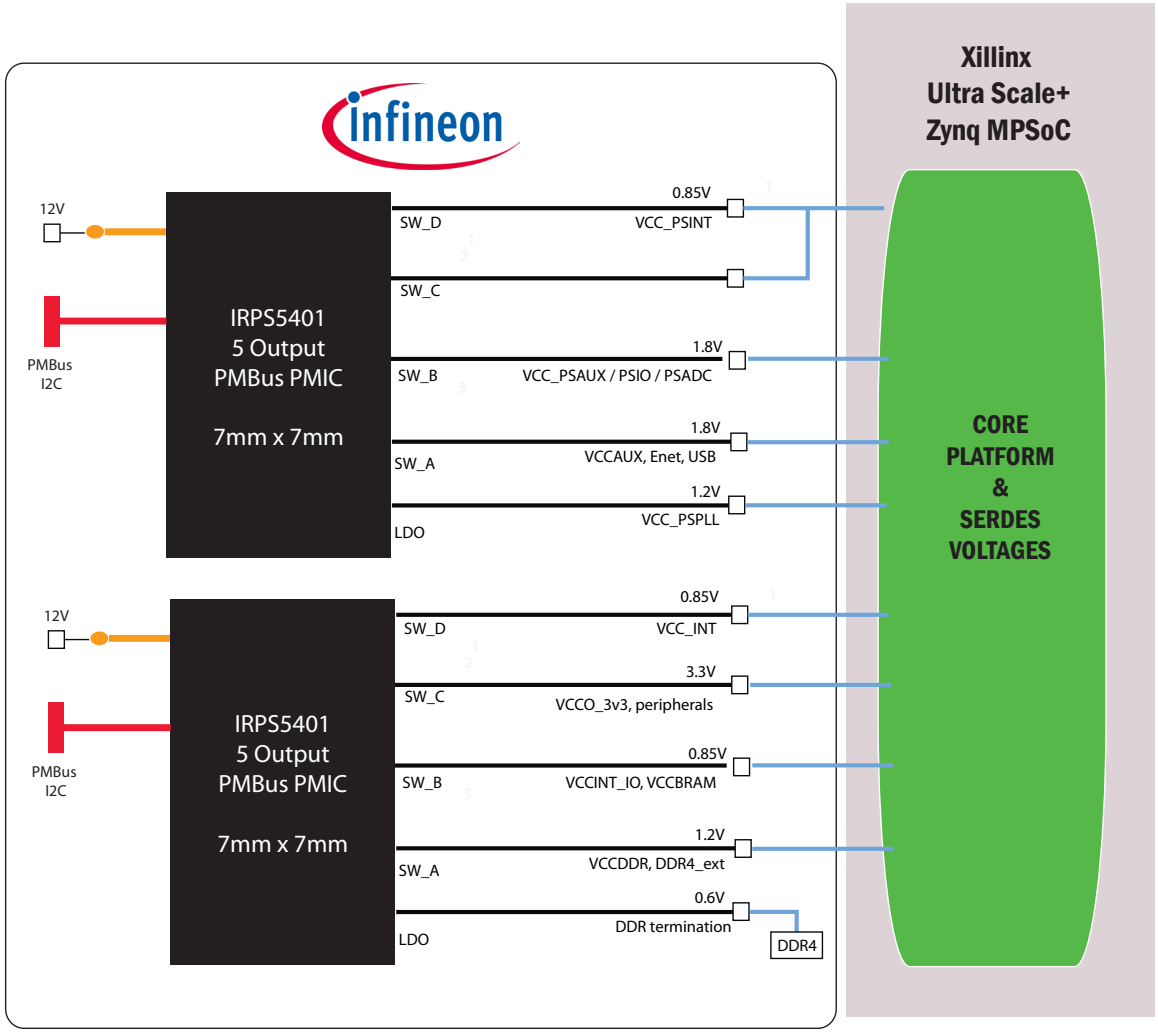
Compact Power Design Options for Zynq UltraScale+ from ZU02 to ZU4

Infineon preview of DC/DC Multi-output Regulators, IRPS5401 below offers highly integrated solution

DESIGN NOTES

The IRPS5401 is a complete power management unit delivering up to 5 output voltages to processors, FPGA's and other multi-rail power systems. Four high efficiency configurable switching regulators and a Source/Sink Linear regulator provide the typical rails required such as core voltage, memory voltage and I/O voltages.

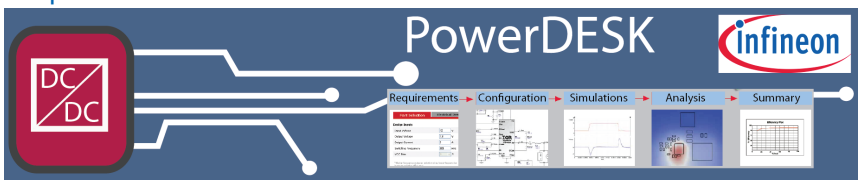
ADVANCED INFORMATION



Zynq UltraScale+ 16nm MPSoC

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	Vcore 0.85V 35A 25A 15A	Digital: IR38064 – 35A IR38063 – 25A IR38062 – 15A	IR38064 http://go.transim.com/8MW IR38063 http://go.transim.com/TzC
Core Voltage	Vcore 0.85V 25A 15A	Analog: IR3447 – 25A IR3895 – 16A	Analog: IR3447 coming soon IR3895 coming soon
SERDES Voltage	VMGTAVCC 0.9V / 2A	Analog: IR3891 – 2x -4A*	IR3891 http://go.transim.com/SCe
SERDES Voltage	VMGTAVCCAVTT, VCCPLL 1.2V / 2A		
SERDES Voltage	VMGTAVCCAUX 1.8V / <1A	Analog: IR3823 – 3A	
Platform Voltage	VCCO 1.5V / 1A	Analog: IR3823 – 3A IR3883 – 3A	IR3823 http://go.transim.com/iaz IR3883 coming soon
Platform Voltage	VCCAUX / VCCPAUX 1.8V / 2A	Analog: IR3823 – 3A IR3883 – 3A	IR3823 http://go.transim.com/iaz IR3883 coming soon

Design Notes:

1) IR38064/38063 are PMBus SupIRBucks. Excellent thermal rating capability at 25A-35A.

2) IR3447 / IR3848 / IR3895 are good analog alternatives also with excellent thermal capability at 25A-35A.

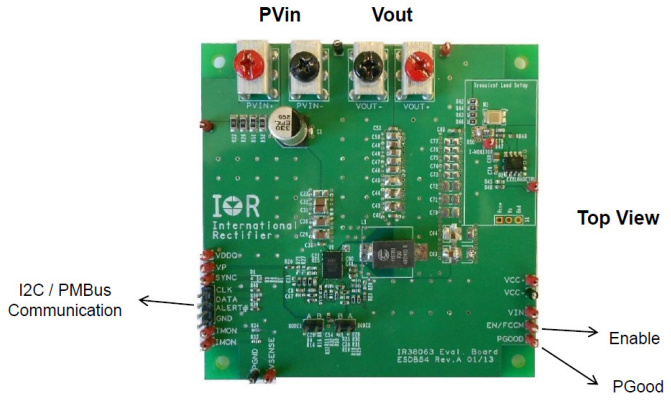
3) * IR3891 is a Dual Output DC/DC, ideal for space savings. Good for low noise SERDES. IR3891 (dual) with one resistor change, Rf2, get voltages: 1.0V, 0.95V, 0.9V paired with 1.8V VCCAUX. Same as Artix Design.

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Zynq UltraScale+ 16nm MPSoC

EVALUATION BOARDS AVAILABLE

Part	Evaluation Board	
IR38064	IRDC38064	coming soon
IR38063	IRDC38063	view
IR3847	IRDC3847	view
IR3895	IRDC3895	view
IR3891	IRDC3891	view
IR3823	IRDC3823	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