

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

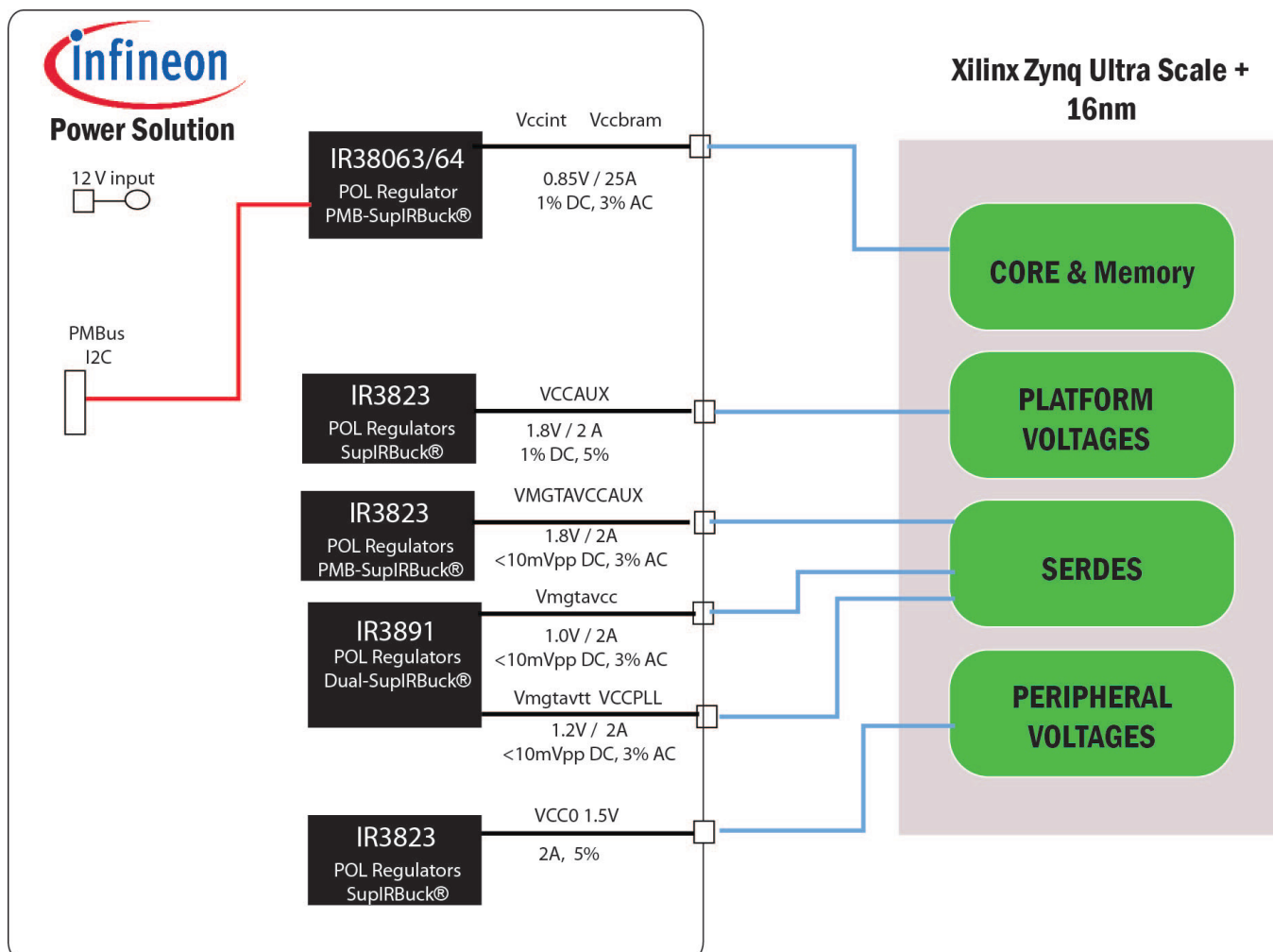
- Delivers excellent efficient at best thermal ratings
- High DC accuracy <1%
- PMBus capability

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



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

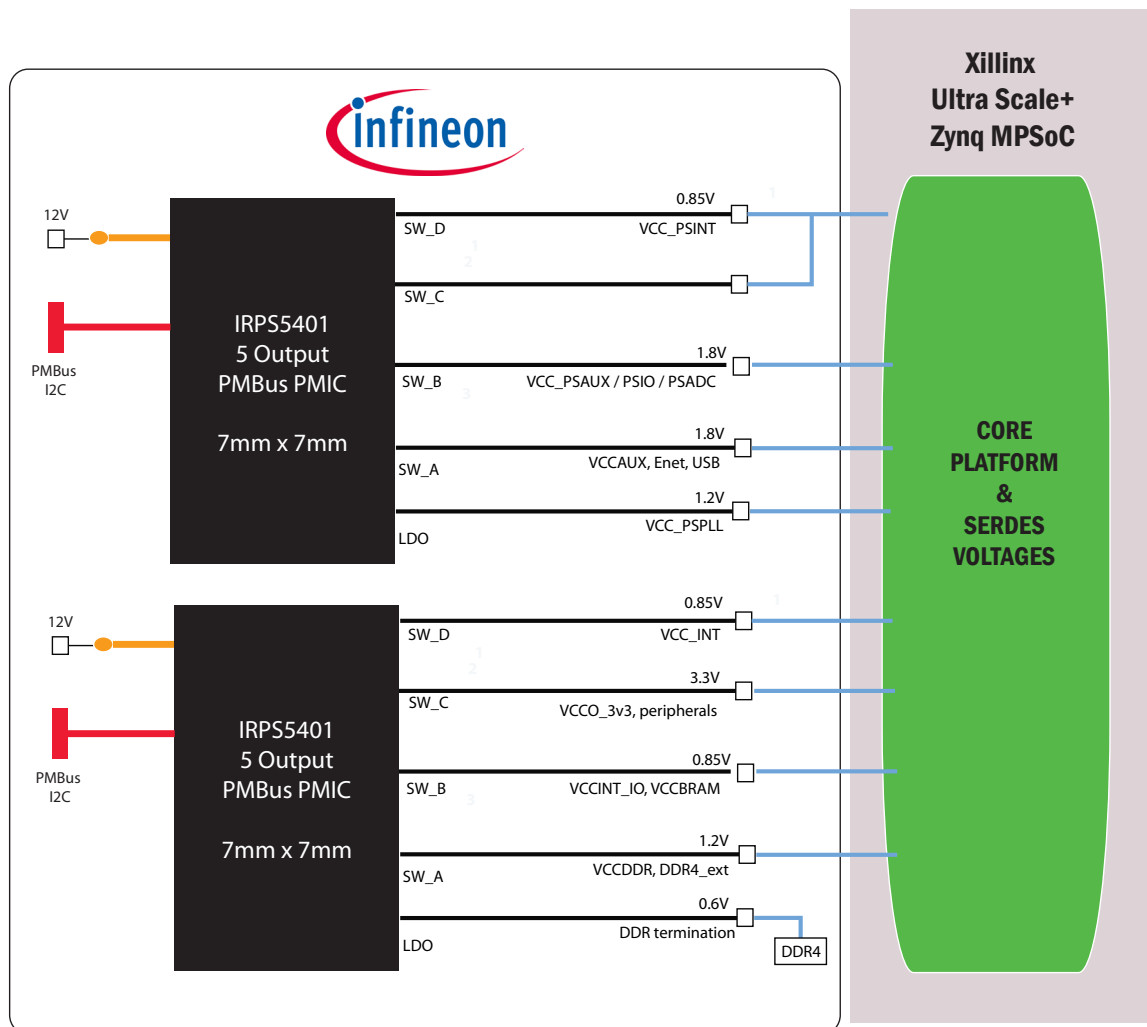
Infineon preview of DC/DC Multi-output Regulators, IRPS5401 below offers highly integrated solution

Zynq UltraScale+ 16nm MPSoC

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

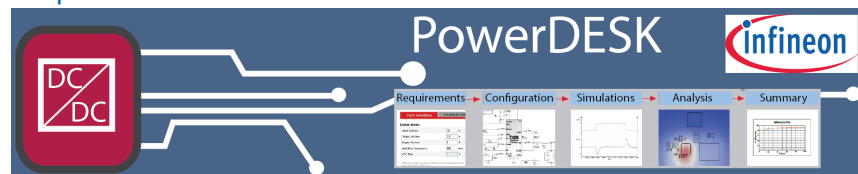


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Zynq UltraScale+ 16nm MPSoC

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.

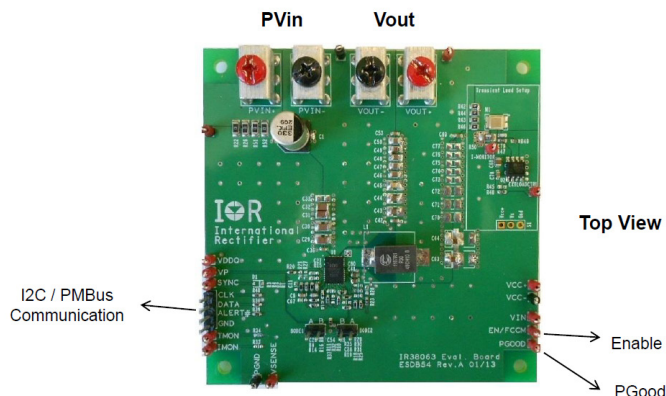
3) * IR3891 is a Dual Output DC/DC, ideal for space savings. Good for low noise SERDES. IR3891 (dual) with one resistor change, Rf2, get voltages: 1.0V, 0.95V, 0.9V paired with 1.8V VCCAUX. Same as Artix Design.

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EVALUATION BOARDS AVAILABLE

Zynq UltraScale+ 16nm MPSoC

| 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 |