

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 a design for Zynq 7 Series SoC-FPGA Family. Various solutions are shown to scale the core, platform and SERDES voltage and current requirements.

HIGHLIGHTS

Design options for Analog or Digital SupIRBucks

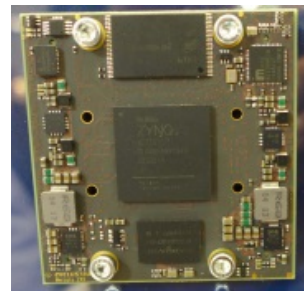
Only two components types required: IR3899 and IR3823.

IR3899 9A; IR3823 3A Single POL for core, platform and SERDES voltages:
1V for up to 9A; 1.8V, 1.0V, 1.2V, 1.5V from 1A to 3A

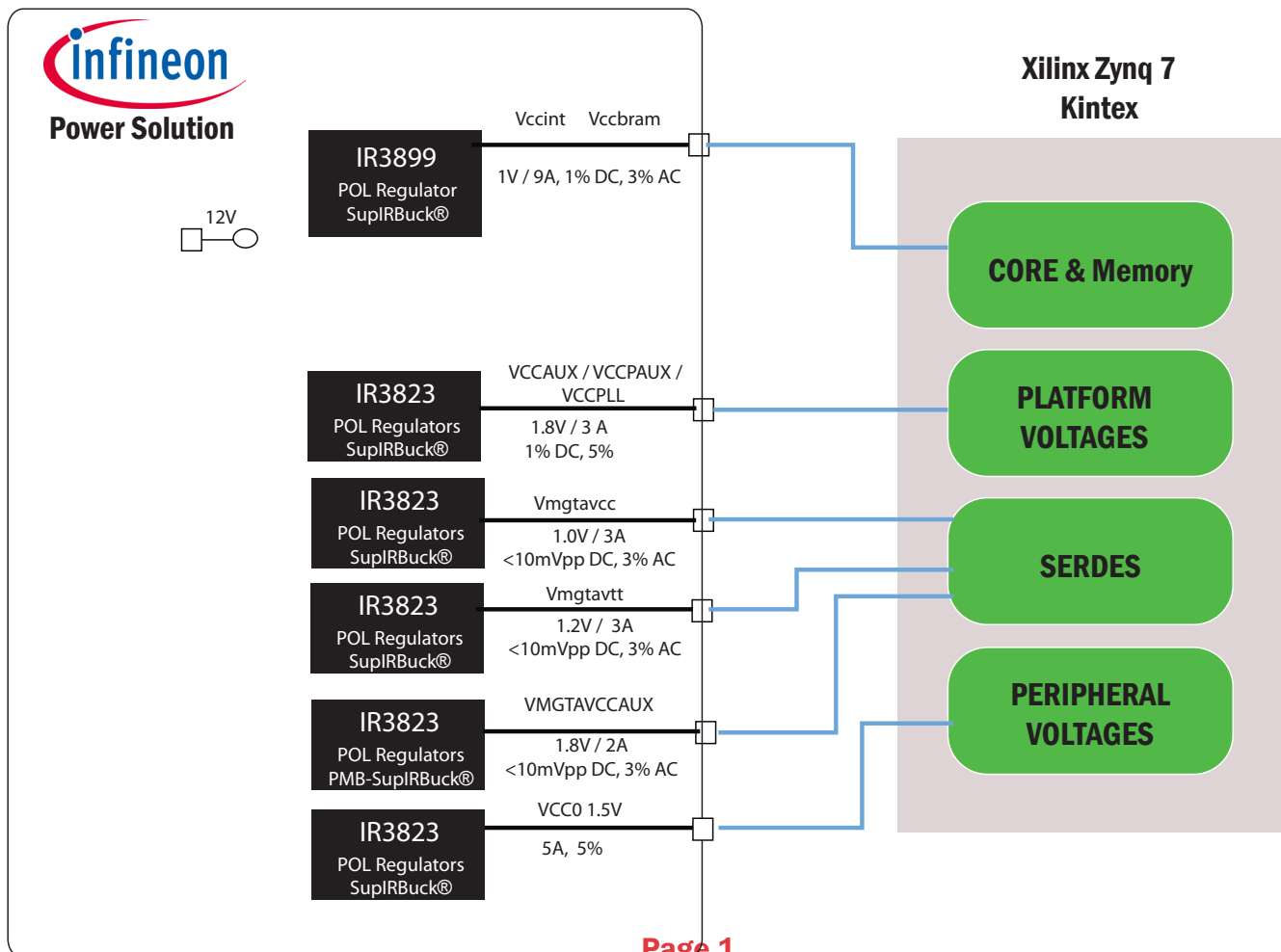
For tighter board space constrained applications, the IR3891 Dual DC/DC Buck Regulators can be used.

For advanced power applications, PMBUS SupIRbucks, IR38060 and IR38062 can be used for integrated voltage setting, margining, telemetry and sequencing.

Zynq 7 Series:
7k70/160/325/410/420/480



Customer example:
Infineon DC/DC Power for Zynq 7 FPGA modules

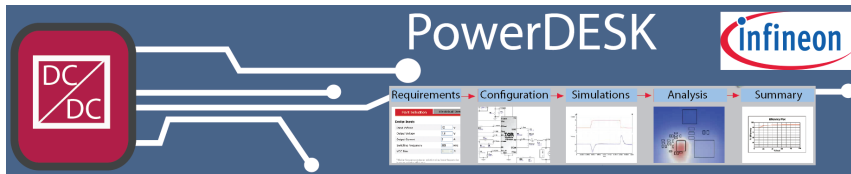


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PowerDESK DESIGN TOOL

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 1V 10A / 6A	Digital: IR38062 – 10A IR38060 – 6A	IR38062 http://go.transim.com/Ck6
Core Voltage	VCCINT / VCCBRAM 1V 9A / 6A	Analog: IR3899 – 9A IR3898 – 6A	IR3899 http://go.transim.com/rdj
Platform Voltage	VCCAUX / VCCPAUX / VCCPLL 1.8V / 2A	Analog: IR3823 – 3A IR3883 – 3A Digital: IR38060	IR3823 http://go.transim.com/iaz
Platform Voltage	VCCO 1.5V / 1A	Analog: IR3823 – 3A IR3883 – 3A	
SERDES Voltage	VMGTAVCCAUX 1.8V / 1A Up to 16 ch / 325 series	Analog: IR3823 – 3A	IR3823 http://go.transim.com/iaz
SERDES Voltage	VMGTAVCC 1.0V / 3A Up to 16 ch / 325 series	Analog: IR3823 – 3A IR3891 – 2x -4A*	IR3823 http://go.transim.com/b1g
SERDES Voltage	VMGTAVCCAVTT 1.2V / 3A Up to 16 ch / 325 series	Analog: IR3823 – 3A IR3891 – 2x -4A*	IR3823 http://go.transim.com/qav

Design Notes:

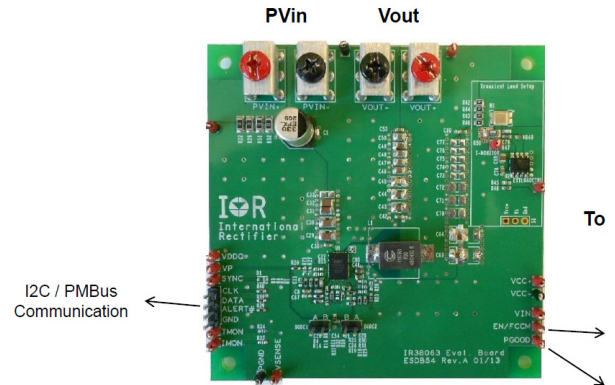
- 1) IR3899, IR3897, IR3898 are simple Analog DC/DC Regulators with Integrated FETs and ideal for the Vcore rail of the Zynq 7 Series, scalable from 4A to 9A. If higher current needed, see IR3894 and IR3895.
- 2) IR38060/38062 are PMBus SupIRBucks if Vout setting, margining, telemetry & fault management required.
- 3) IR38062 rated for 15A so could be good for applications with higher Temperature ambient in application.
- 4) * IR3891 is a Dual Output DC/DC, ideal for space savings. Good for low noise SERDES.
Could combine the VMGTAVCC and VMGTAVCCAVTT in one device to control sequencing off one enable.
Low ripple design.
See Artix Design.

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EVALUATION BOARDS AVAILABLE

Part	Evaluation Board
IR3899	IRDC3899 view
IR3823	IRDC3823 view
IR38060	IRDC38060 view
IR38062	IRDC38062 view
IR3891	IRDC3891 view
IR3883	IRDC3883 coming soon
IR3898	IRDC3898 view

Zynq 7 Series:
7k70/160/325/410/420/480



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