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 Kintex UltraScale, 20nm MPSoC Family.

HIGHLIGHTS

Scalable Design Options for Kintex from KCU040 to KCU115

There are several variants of the Kintex 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.

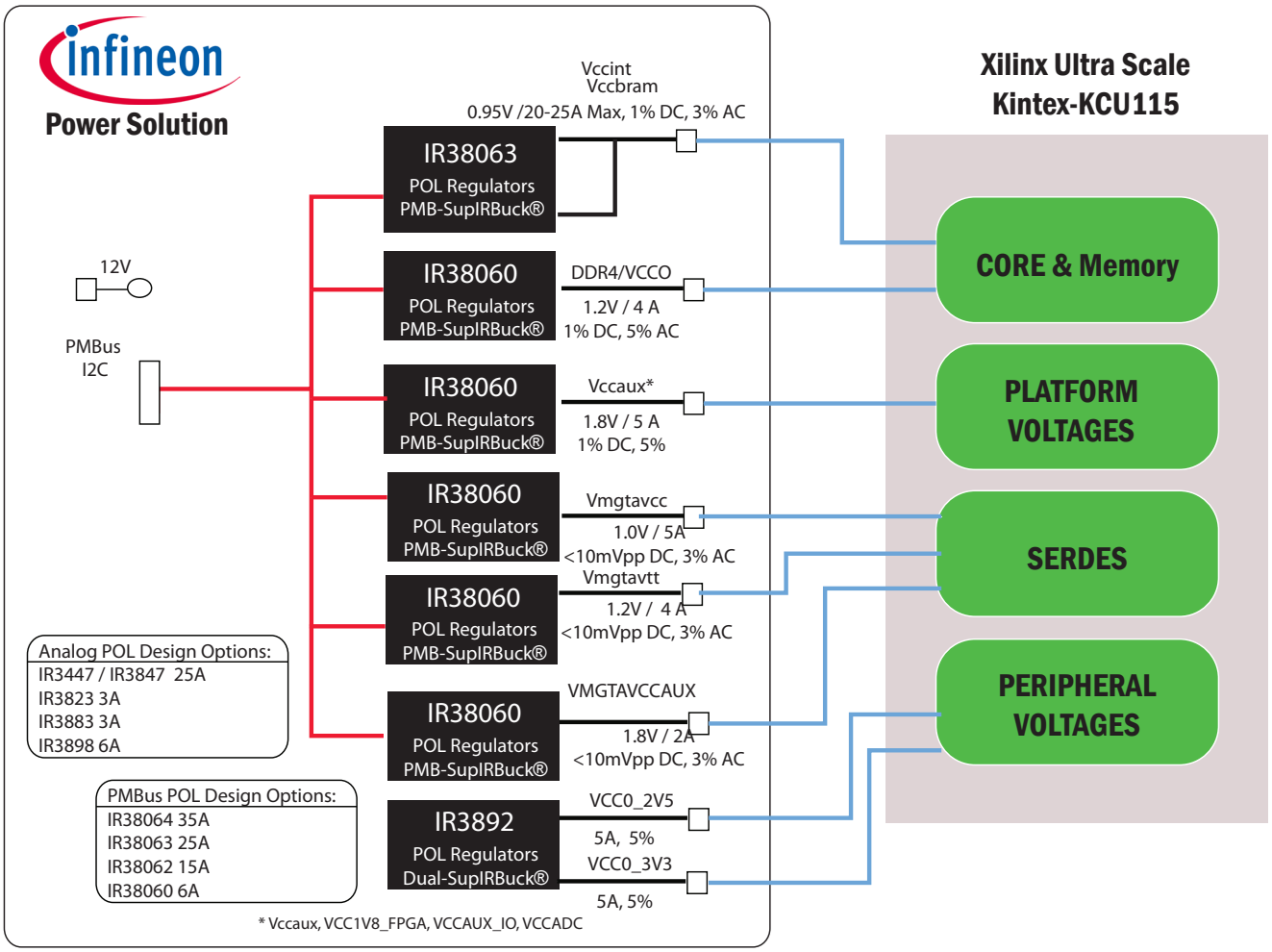
Kintex UltraScale 20nm

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

IR38060 6A Integrated FET PMBus POL
- Delivers excellent efficient at best thermal ratings
- High DC accuracy <1%
- PMBus capability

Higher current Kintex UltraScale Series examples: KCU115



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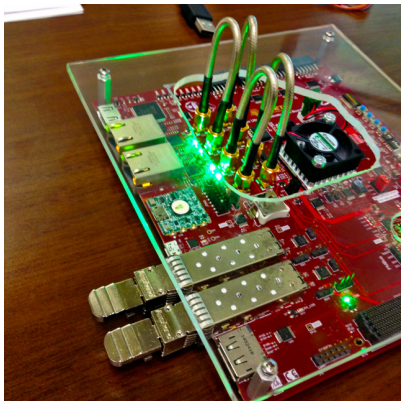
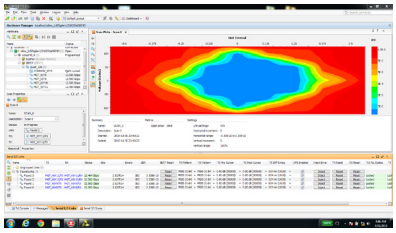
Kintex UltraScale 20nm

Proven power designs -
UltraScale Kintex KCU040

Infineon presents first PMBus POL solution to highlight achievable designs for PMBus 1.2 - margin, telemetry, voltage setting and sequencing across all POL devices. The low noise power design is also proven for SERDES test for PRBS31 yielding zero bit error (BERR).





For more information, links below:

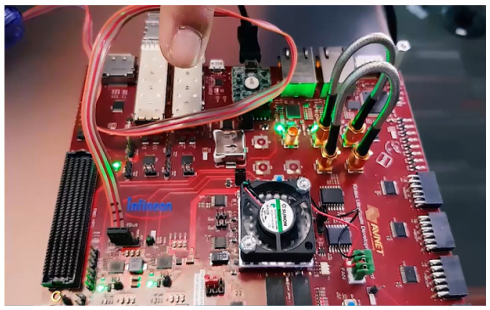
> Avnet EMEA - Board Design Info

> Xilinx Blog

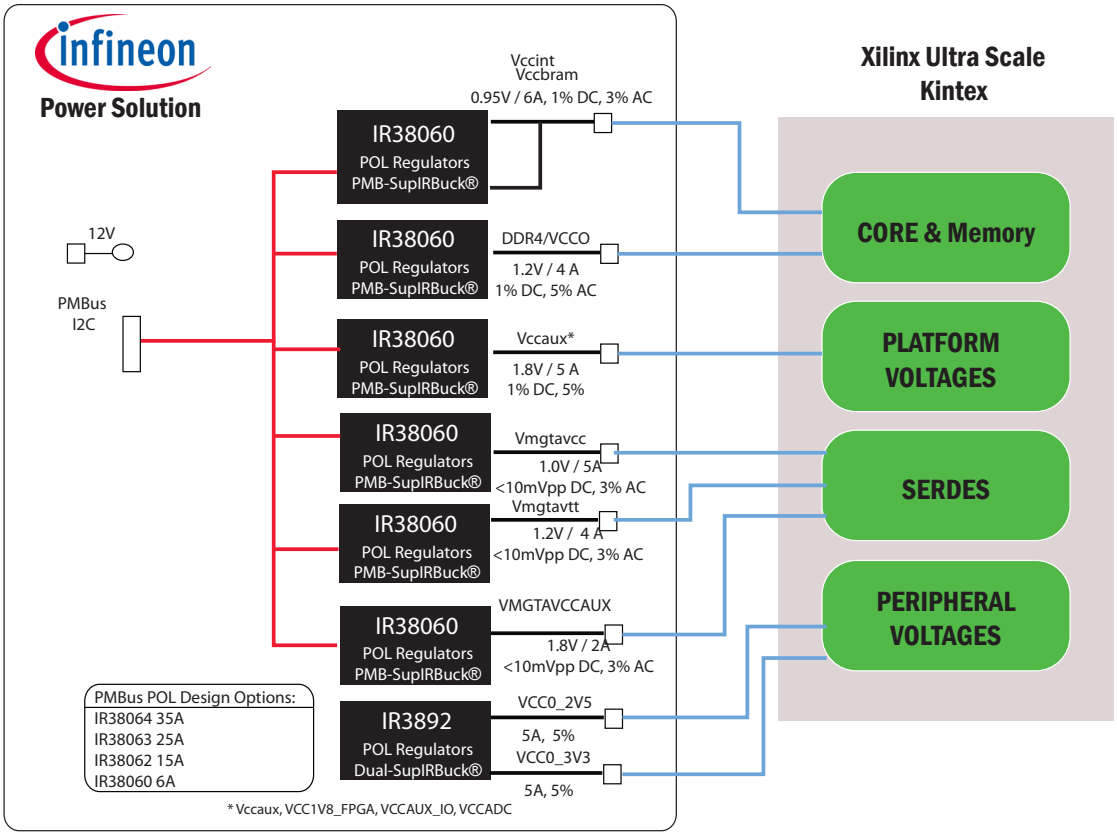
> Xilinx Avnet Reference Design

> Avnet Americas - Board Design Info

CLICK picture
see Video



Xilinx Avnet UltraScale
Reference Design Platform:
AES-KU040-DB-G



DESIGN NOTES

1) Proven power design on Avnet Ultra Scale Kintex design. For schematics and layout files go to
www.infineon.com/xilinx
see Kintex 10W design

2) Digital POL utilizing PMBus 1.2 command sets.

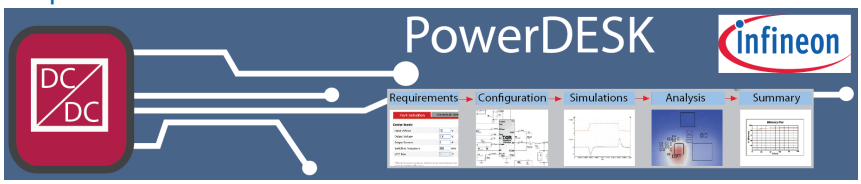
3) The SERDES power solutions are proven designs on actual reference designs delivering low noise, low ripple design up to 12.Gbps per lane with zero bit error.

4) If lower current rails are necessary, the IR38060 can be replaced with IR3823 (3A), IR3883 (3A), IR3897 (4A), IR3898 (6A).

Kintex UltraScale 20nm

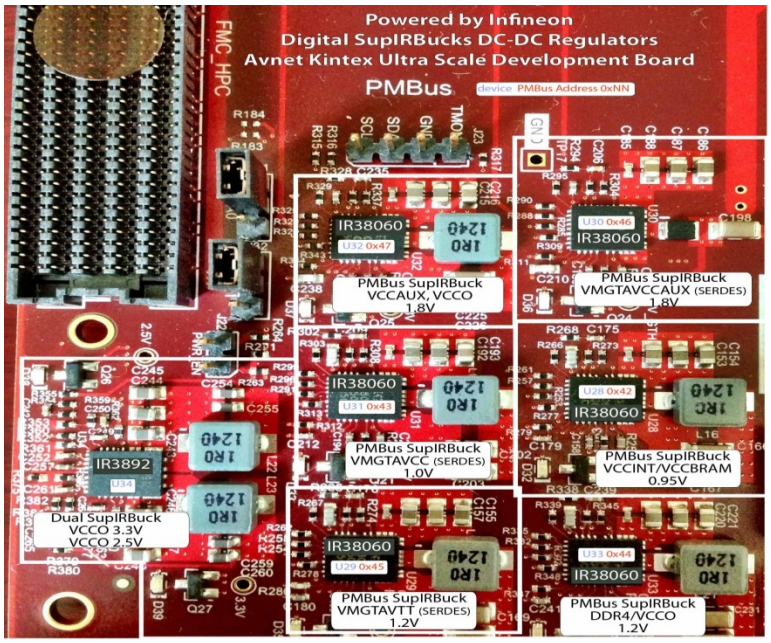
PowerDESK DESIGN TOOL

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	Schematic Symbol	Address Location PMBus/I2C	URL
Core Voltage	VCCINT / VCCBRAM 0.95V	IR38060	U28	0x42 / 0x12	http://go.transim.com/fFl
Platform Voltage	VCCAUX, VCCO 1.8V	IR38060	U32	0x47 / 0x17	http://go.transim.com/t1M
Platform Voltage	DDR4 / VCCO 1.2V	IR38060	U33	0x44 / 0x14	http://go.transim.com/tV6
SERDES Voltage	VMGTAVCC 1.0V	IR38060	U31	0x43 / 0x13	Coming soon
SERDES Voltage	VMGTAVTT 1.2V	IR38060	U29	0x45 / 0x15	Coming soon
SERDES Voltage	VMGTAVCCAUX 1.8V	IR38060	U30	0x46 / 0x16	http://go.transim.com/r3R
Peripheral Voltages	VCCO 3.3V, VCCO 2.5V	IR3892	U34	N/A	http://go.transim.com/xjM



Design Notes:

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Power Solution Ultra Scale Kintex 20nm

Highlights:
- 8 Critical Voltage rails, optimized design
- High Efficiency: >90%
- High Density: Integrated POL+FET+PMBus
- Low Noise: <<10mVpp SERDES rails
- PMBus Sequencing, Fault Mgt, Telemetry

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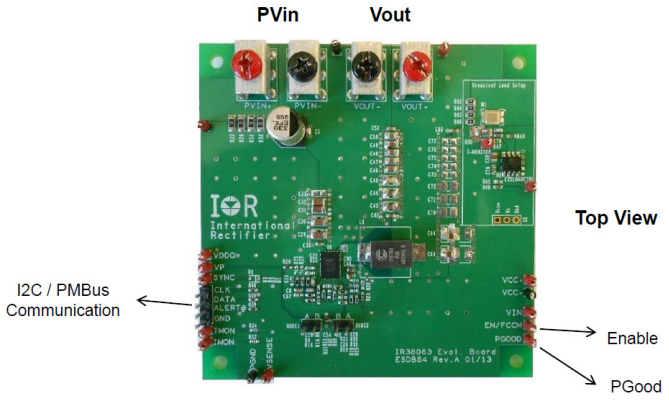
Kintex UltraScale 20nm

EVALUATION BOARDS AVAILABLE

Part	Evaluation Board	
IR38063	IRDC38063	view
IR38060	IRDC38060	view
IR3892	IRDC3892	view



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