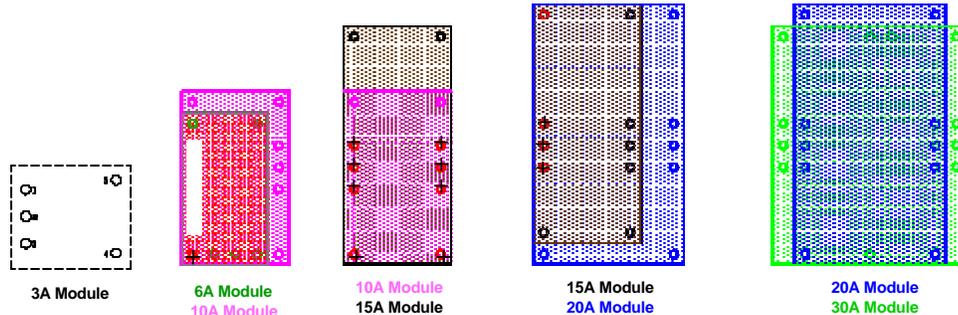


PR452
Virtex™-4 Revised VII Pro Design 1
Module-based (PTH05010 series) Power Management Solution Providing up to 15 A
from $V_{IN}=5V$

FEATURES:

- Similar to power design for ML461 evaluation board available at www.xilinx.com
- Simple, second sourced plug-in modules enable fast time-to-market
- High efficiency minimizes heat
- Interchange modules to support:
 - o 3A to 30A load currents
 - o If current requirements decrease, easy to use dual footprints allow cost reduction without redesign



- o Other input rails such as 3.3V or 12V supplies
- Solution provides simultaneous power rail sequencing through TI's Auto-track™ technology

IMPORTANT WEB LINKS:

- Link to the TI home page for Xilinx FPGA power management solutions at <http://www.ti.com/xilinuxfpga> for more information and other reference designs.
- Link to datasheets at <http://focus.ti.com/lit/ds/symlink/pth12010w.pdf>, <http://focus.ti.com/lit/ds/symlink/pth05010w.pdf>

IMPLEMENTATION NOTES:

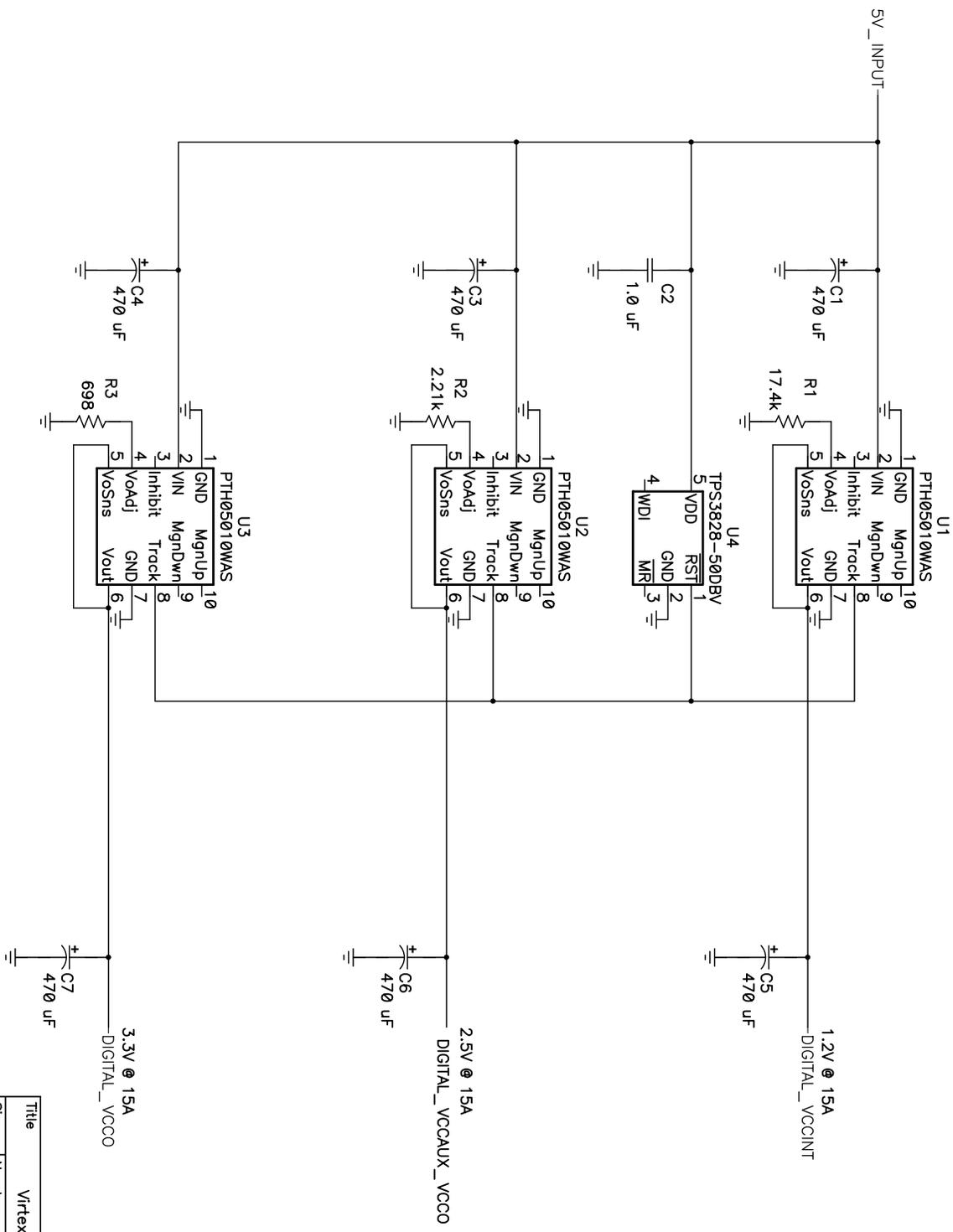
- **Additional Capacitance:**
 - o The PTHxx010 input capacitance requirement may change depending on the application. The datasheet specifies the minimum required input capacitance required and the computation for determining input capacitance as well as recommended capacitors.
 - o The PTHxx010 devices have a limitation to the amount and type of additional capacitance that can be added to its output. Each datasheet

provides specifications for external output capacitance and associated ESR as well as recommended output capacitors.

- **V_{CCAUX}:** V_{CCAUX} powers time-critical resources in the FPGA, including the Digital Clock Managers (DCMs). Therefore, this supply voltage is especially susceptible to power supply noise. V_{CCAUX} can share a power plane with V_{CCO}, but only if V_{CCO} does not have excessive noise. Changes in V_{CCAUX} voltage should take place no faster than 10 mV/ms.
- **Modifications:** For different input current or different load current, simply select a different module. The PTHXXXX input capacitance requirement may change depending on the application. The datasheet specifies the minimum required input capacitance required and the computation for determining input capacitance as well as recommended capacitors. The PTHXXXX devices have a limitation to the amount and type of additional capacitance that can be added to their output. Each datasheet provides specifications for external output capacitance and associated ESR as well as recommended output capacitors.

QUESTIONS?

- Send an email to <mailto:fpgasupport@list.ti.com>



Title		Virtex-4	
Size	Number	PR452	Rev
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Date	2/25/05		Drawn by
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			of

Filename: PR452_bom.xls					
Date: 02/25/2005					
PR452 BOM					
COUNT	RefDes	DESCRIPTION	SIZE	Part Number	MFR
6	C1, C3, C4, C5, C6, C7	Capacitor, Tantalum, 100-uF, 10-V, 120-milliohm, 20%	7343(D)	595D477X0010R2T35	Vishay
1	C2	Capacitor, Ceramic, 1.0-uF, 6.3-V, X5R, 10%	0603	GRM188R60J105KA01	muRata
1	R1	Resistor, Chip, 17.4k-Ohms, 1/16-W, 1%	0603	Std	Std
1	R2	Resistor, Chip, 2.21k-Ohms, 1/16-W, 1%	0603	Std	Std
1	R3	Resistor, Chip, 698-Ohms, 1/16-W, 1%	0603	Std	Std
3	U1, U2, U3	Module, Wide Output Adj, 15A, 0.8V to 3.6V, 5V Input	1.370 X 0.620	PTH05010WAS	TI
1	U4	IC, Processor Supervisory Circuits	Sot23-5	TPS3828-50DBV	TI

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