Xilinx Kintex 7 Low Cost reference design (1V@6A)

(ACTIVE) PMP6776.1

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Description

PMP6776 is a low-cost non-isolated synchronous buck power supply. This design uses TPS56121 and TPS54620 Synchronous Buck Converters and TPS54425 and TPS54225 Step-Down Switchers to generate 7 outputs. Features include input voltage range 10.8V to 13.2V and outputs 1V at 6A, 1.5V at 4A, 1.8V at 6A, 2V at 2A, 2.5V at 8A, 3.3V at 8A, 1.2V at 4A.

Features

- Input voltage range of design = 10.8 to 13.2V. Devices can support 4.5 to 14.5V input
- All 7 DC/DC converters on single-sided PCB in approximately 3.5"x3.5" form factor
- Design meets any power up sequencing requirements
- Uses all ceramic input and output capacitors to save space and cost
- Reference design has been built and tested

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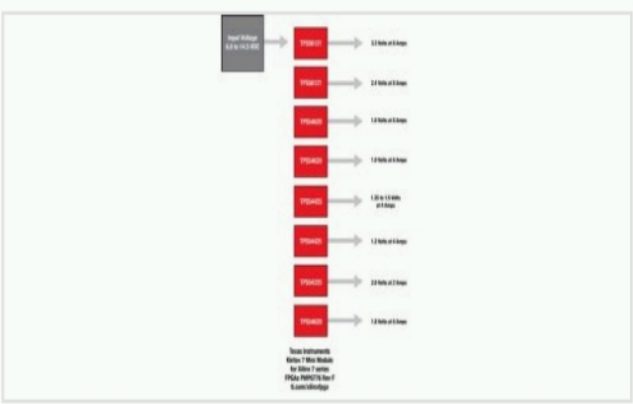

Xilinx | Kintex 7 Block Diagram

Fully assembled board (shown above) developed for testing and performance validation only, not available for sale.

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP6776.1
Vin (Max) (V)	13.2
Vin (Min) (V)	10.8
Vout (Nom) (V)	1
Iout (Max) (A)	6
Output Power	6
Isolated/Non-Isolated	Non-Isolated
Input Type	DC
Topology	Buck- Synchronous

TI Devices (4)

Order samples, get tools and find more information on the TI products in this reference design.

Part Number	Name	Product Family	Sample & Buy	Design Kits & Evaluation Modules
TPS54225	4.5V to 18V Input, 2A Synchronous Step-Down SWIFT™ Converter	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules
TPS54425	4.5V to 18V Input, 4A Synchronous Step-Down SWIFT™ Converter	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules
TPS54620	4.5V to 17V Input, 6A Synchronous Step-Down SWIFT™ Converter	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules

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CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
TPS54225	HTSSOP (PWP) | 14	Download	Download
TPS54425	HTSSOP (PWP) | 14	Download	Download
TPS54620	VQFN (RGY) | 14	Download	-
	VQFN (RHL) | 14	Download	-
TPS56121	LSON-CLIP (DQP) | 22	Download	-

Texas Instruments and Accelerated Designs Inc. have collaborated together to provide TI customers with schematic symbols and PCB layout footprints for TI products.

Step 1: Download and install the Ultra Librarian software ZIP: 62MB

Step 2: Download the Symbol and Footprint .bxl file.

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Technical Documents

User Guides (1)

Title	Abstract	Type	Size (KB)	Date	Views
PMP6776 Test Results		PDF	5464	19 Aug 2013	130

Design Files (3)

Title	Abstract	Type	Size (KB)	Date	Views
PMP6776 Gerber		ZIP	252	19 Aug 2013	89
PMP6776 BOM		PDF	72	19 Aug 2013	110
PMP6776 Schematic		PDF	202	19 Aug 2013	296

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