Universal AC 40W Set Top Box Power Supply (1.8V @ 3A)

(ACTIVE) PMP5411.5

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Description

This reference design provides a power solution for set top box applications. The AC/DC portion of this design converts a universal AC input to an isolated 12VDC output with a 40W maximum power rating. The UCC28610 quasi-resonant flyback controller allows the AC/DC converter to achieve a full load efficiency over 85%. This design also includes five TPS54325 synchronous buck converters that generate 5V, 3.3V, 2.5V, 1.8V, and 1.2V outputs from the 12V flyback output.

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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

	PMP5411.5
Vin (Max) (V)	14
Vin (Min) (V)	10
Vout (Nom) (V)	1.8
Iout (Max) (A)	3
Output Power	5.4
Isolated/Non-Isolated	Isolated
Input Type	DC
Topology	Buck- Synchronous

TI Devices (2)

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Part Number	Name	Product Family	Sample & Buy	Design Kits & Evaluation Modules
TPS54325	4.5V to 18V Input, 3A Synchronous Step-Down SWIFT™ Converter	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules
UCC28610	12-65W Green-mode Flyback Power Supply Controller	AC/DC and Isolated DC/DC Power Supply	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
TPS54325	HTSSOP (PWP) | 14	Download	Download
UCC28610	SOIC (D) | 8	Download	Download
	PDIP (P) | 8	Download	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

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Technical Documents

User Guides (1)

Title	Abstract	Type	Size (KB)	Date	Views
PMP5411 Test Results		PDF	2976	16 Sep 2013	111

Design Files (3)

Title	Abstract	Type	Size (KB)	Date	Views
PMP5411 Gerber		ZIP	151	18 Sep 2013	130
PMP5411 BOM		PDF	115	16 Sep 2013	125
PMP5411 Schematic		PDF	127	16 Sep 2013	260

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