# Universal AC 40W Set Top Box Power Supply (3.3V @ 3A)

(ACTIVE) PMP5411.3

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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

| | PMP5411.3 |
|---|---|
| Vin (Max) (V) | 14 |
| Vin (Min) (V) | 10 |
| Vout (Nom) (V) | 3.3 |
| Iout (Max) (A) | 3 |
| Output Power | 9.9 |
| Isolated/Non-Isolated | Isolated |
| Input Type | DC |
| Topology | Buck- Synchronous |

## TI Devices (2)

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 |
|---|---|---|---|---|
| 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

**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 |
|---|---|---|---|---|---|
| PMP5411 Test Results | | PDF | 2976 | 16 Sep 2013 | 110 |

### 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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