WEBENCH® Power Designer Basics and advanced

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15 DEC 2015

Objectives

- ✓ WEBENCH® Overview
- ✓ Electrical/Thermal Simulation
  - Basic operating
  - Advance options,
  - Re-Comp(compensation circuit control), Editing
  - Export and Sharing
- ✓ Summary

WEBENCH® Tools

Power Designer	Power supply and system power architecture
LED Designer	LED driver design and LED architecture
Sensor Designer	Sensor analog front end design
Active Filter Designer	Filter design and simulation
Clock Architect	Clock tree builder and simulation
LDC Designer	Inductive sensing applications

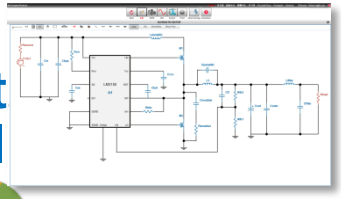
WEBENCH® Power Tools

Power Designer	Create power supply designs including schematic, BOM and operating values
Visualizer	Visualize tradeoffs across dozens of solutions for power supply requirement
Optimizer	Optimize designs for small footprint, low cost and high efficiency
Simulation	Do electrical and thermal simulation to characterize dynamic circuit behavior
Architects	Create and optimize system level supplies for FPGAs, processors and custom loads
Edit	Edit the schematic and run Spice simulations
Export/BuildIt	Export your design to popular CAD tools and get prototype kits

14 Years of Modeling and Verification

Faster & More Effective

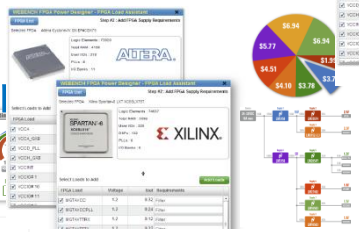
2014 Edit



2012 Export To CAD Tool

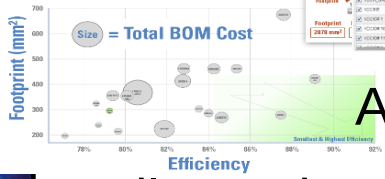
Total Customization

2010 FPGA Power Architec



Immediate Integration

2009 Visualize



Agile Systems

1999 Online

Agile Designs

Offline Pas

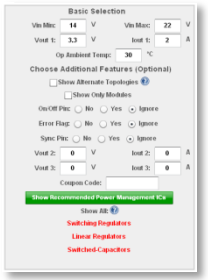
WEBENCH® Design Tools

Trial and Error

New Capabilities

WEBENCH® tools: Start to finish design and prototype

1. Choose a part



Enter specifications

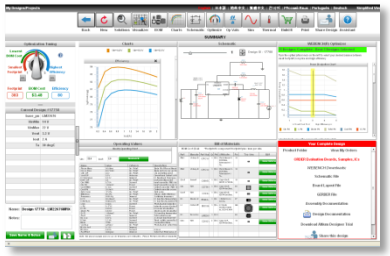
Select solution

WEBENCH Visualizer

WEBENCH Optimizer

Optimize for footprint, price and efficiency; use graphs to see design

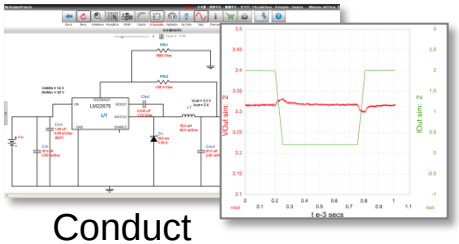
2. Create a design



WEBENCH Create

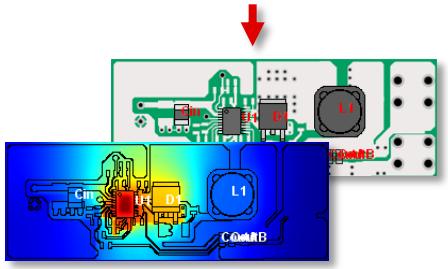
View schematic, change BOM and view key operating values

3. Analyze a design



Conduct electrical analysis

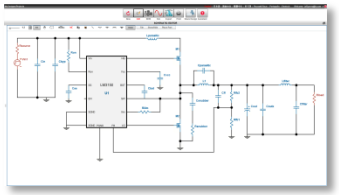
WEBENCH Esim



Generate layout/ thermal analysis

WebTHERM

4. Edit



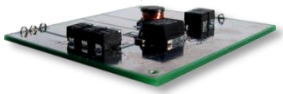
Change schematic/ electrical analysis

WEBENCH Editor

5. BuildIt!

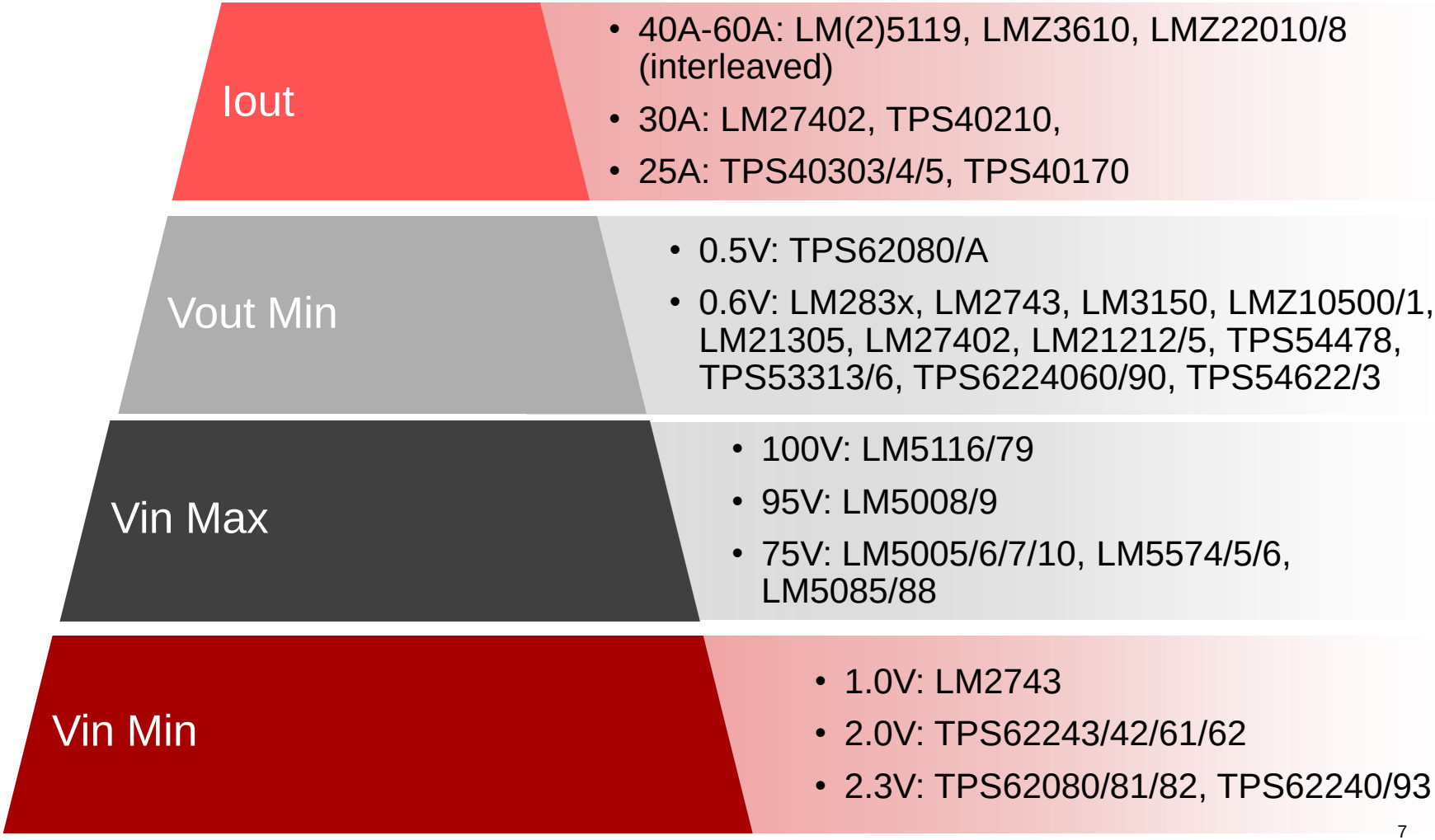
WEBENCH Export

Mentor Graphics Altium cadence DESIGNSPARK



Design prototype

Coverage of WEBENCH® enabled parts (Buck DC to DC Switchers)



WEBENCH® Supports Broad Portfolio
14 Years of Modeling and Verification

Circuit Calc & Sim model

- LM10500
- LM2012x/3x/4x/54
- LM20242
- LM20323/33/43
- LM21212/5
- LM21305
- LM(2)5005/07/10/11
- LM(2)5085/88
- LM(2)5085/88
- LM(2)5116
- LM(2)5117
- LM26001/3
- LM2696
- LM2734/35/36
- LM27341/2
- LM27341/2
- LM2734/5/6
- LM27402
- LM2743
- LM2830/31/32
- LM2841/42
- LM2852/53/54
- LM3100/02/03
- LM3478/88/81
- LM34910/17/19/23/30
- LM3670/71/73/74
- LM5001/02/6/8/9
- LM5022
- LMR10510/15/20
- LMR12010
- LMR14203/6
- LMR24210/20
- LMR62421
- LMZ22008/10
- TPS2420
- TPS40170
- TPS54020/40/60(A)
- TPS54140/60
- TPS54240/60
- TPS54340/60
- TPS54418
- TPS62160/1/2/3/70/1/2/3

Circuit Calc but no Sim model

- LM(2)5118/9
- LM2622
- LM3224
- LM2700
- LM2698
- LM2731
- LM3668
- LMR62010/4
- TPS40210
- TPS40303/4/5
- TPS51225
- TPS51315
- TPS53313/6
- TPS5401
- TPS54060/61/62
- TPS5410/20/30/50
- TPS54218
- TPS54231/2/3
- TPS54310-8
- TPS54320/5/6
- TPS54331/2
- TPS54478
- TPS54610-8
- TPS61170/5
- TPS62080/1/2
- TPS62125
- TPS62130/1/2/3
- TPS62140/1/2/3
- TPS62150/1/2/3
- TPS62200-8
- TPS62240/2/3
- TPS622601/2/3
- TPS62290/1/3
- TPS842/4/610

WebTHERM /Build It

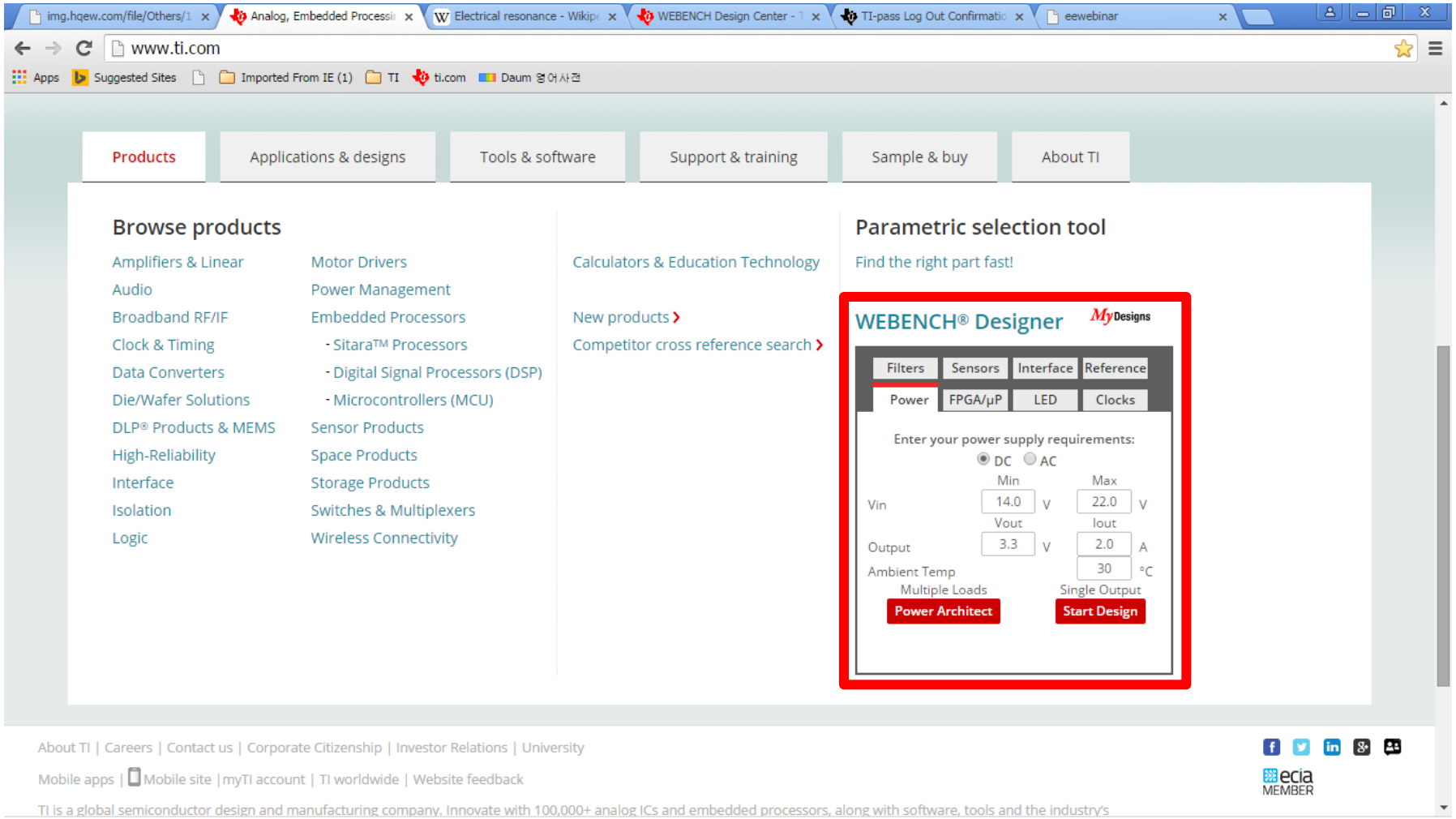
- LM22671-9, LM22680
- LM(2)5574/5/6
- LM2585/6/7/8
- LM2595/6/8/9
- LM2670-9
- LM3150/1/2/3
- LM3402/4(HV)
- LMZ10503/4/5
- LMZ12001/2/3/8/10
- LMZ13608/10
- LMZ14201/2/3
- LMZ22003/5/8/10
- LMZ23603/5

Switchers/Controllers/LED Drivers:
822 part numbers
LDOs: 239 part numbers

Supported Topologies: Buck (over 60% of total designs), Boost, Flyback, SEPIC, Inverting Buck/Boost, LDO, HotSwap, Modules, Flybuck

Visit and Start a WEBENCH

Just visit to TI.com : http://www.ti.com



WEBENCH® Power Designer

End-to-end design solutions
Online selection, simulation and prototyping
Dynamic design optimization based on size, cost and efficiency
Edit and simulate schematic, export to CAD tools

WEBENCH Visualizer
- View dozens of designs at a time to get the best solution for a single power supply
- Each design optimized for efficiency, cost and size

WEBENCH Power Architect
- System level designs for complex multiple load applications
- Provides different rail architectures
- Each system optimized for efficiency, cost and size

WEBENCH Design Tools save you time

Thank You!

Try WEBENCH® Tools yourself:
http://ti.com/webench-kr

WEBENCH® Tool Industry Awards

- **2014 Best in Test & Design Award DesignCon 2015**
  - **WEBENCH PCB Export**
- *2013 Design News Golden Mousetrap Award*
  - *WEBENCH Schematic Export*
- 2012 Design News Golden Mousetrap Award
  - WEBENCH System Power Architect
- 2011 EDN “Innovation of the Year”
  - WEBENCH FPGA Power Architect
- 2010 Electronic Design “Year’s Best - Power”
  - WEBENCH LED Architect
- 2010 EDN “Innovation of the Year”
  - WEBENCH Visualizer
- 2009 EDN “Innovation of the Year”
  - WEBENCH Power/LED Designer
- 2008 Electronic Products “Product of the Year”
  - WEBENCH Sensor Designer
- 2006 IEC “DesignVision” Award
  - WEBENCH Designer
- 2005 EDN “Innovation of the Year”
  - WEBENCH Active Filter Designer
- 2001 EDN “Innovation of the Year”
  - WEBENCH 3.0
- 2000 Electronic Products “Product of the Year”
  - WEBENCH 1.0