

# Power System Designer User Guide



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Power Supply Think Engineers Excellent Tool  
 Straight Forward Modules Solutions  
 Parameters Simple Selecting Great Tool  
 Impressive Useful Tool Output Design  
 Intuitive Good Tool Average Product  
 Complete Nice Idea Interface Resource  
 User Friendly Understand Application

## Introduction

Vicor has developed a proven approach for timely, low-resource, low-risk and high-performance power system design tool unlike any other tool available today. This approach is called the Power Component Design Methodology (PCDM). This methodology provides the means to stitch together Vicor power components to meet the exacting demands for a power system design.

The difference with this methodology is that it covers all of the components needed to build a high-performance power system from the Power Source (AC and high-power DC) to the point-of-load. This methodology uses proven power components that are engineered to interface with each other, thus reducing the complexities of power system design.

The Power System Designer is a web-based tool for generating power systems fast – up to 75% faster than traditional methods. The Power System Designer is the embodiment of the power component design methodology.

## Power System Designer Tool

The design engineer enters their design specifications into the tool and the tool provides recommended designs based on key figures of merit:

- System efficiency
- Power footprint
- Cost
- Component count
- Recommended best fit

This is much more than a product selection tool. The PSD provides a design environment that enables the designer to evaluate the complete power system designed (source to Pol), then modify it.

This tool saves time by taking the place of sifting through data sheets, performing hundreds of calculations on the overall system performance and pulls together thousands of data points that draws a block diagram of the recommended power system in a matter of seconds (optimized around 5 critical figures of merit). In addition, it provides a drawn-to-scale representation of the system along with a bill of materials.

## How to use the Power System Designer

Your approach to using the tool is the same as it would be to use any other web-based tool. You answer a few questions and the tool provides recommended solutions.

To get started, you need to know:



1. for use only in the following browsers:
2. your power source (AC or DC),
3. the voltage levels of your input (either a nominal value or a min and max),
4. number of outputs and
5. for each output you will need to know:
  - a. current / power,
  - b. regulation requirements and
  - c. isolation requirements.

Once determined, you enter them on the website:

<http://sapps.vicorpower.com/SolutionSelector/web/psdInit.do>

The system will then recommend up to five designs based on:

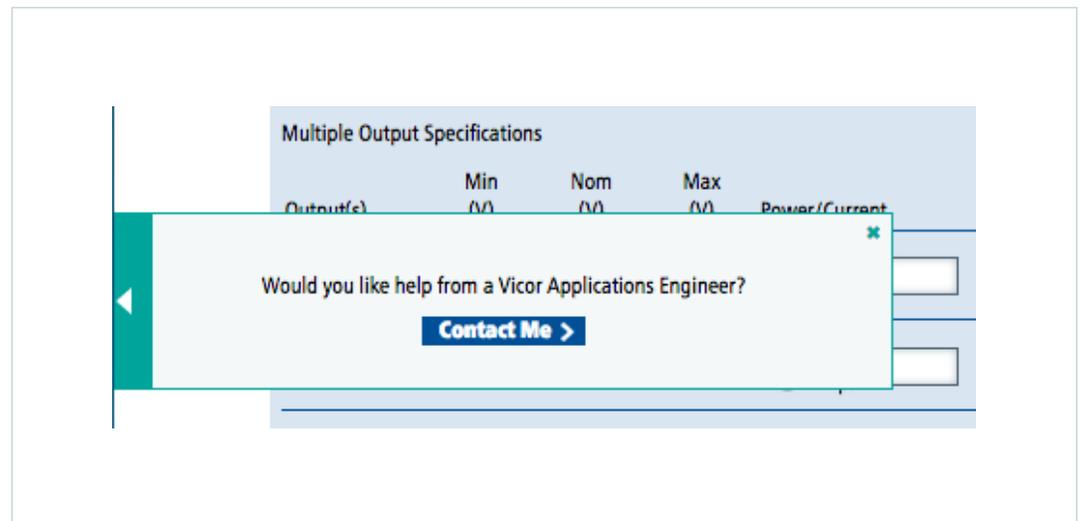
1. component count,
2. price,
3. smallest footprint,
4. highest efficiency and
5. recommended best fit.

See Figure 4 on Page 7.

## Help Tool

If you need any assistance while using the Power System Designer, please click on the help tool located on the left side of the screen.

**Figure 1**  
Help Tool



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## The Results

The results, otherwise known as the Hub, is where the user views the design parameters of their power design. The Hub delivers:

1. up to five solutions based on figures of merit,
2. a view of the design,
3. analysis for each output of the power chain and
4. a bill of materials.

The user may explore each design to better understand the best fit for their design along with evaluating each element of the power chain. After analyzing each power chain, the user may select a solution and open a "White Board" for further evaluation and design. A final step is the creation of a bill of materials for easy ordering of the design.

### About the Whiteboard Tool

The whiteboard tool provides a workspace to architect and analyze the power efficiency of your design requirements. The Vicor whiteboard is a web based design tool that allows users to architect and analyze power system designs which are built using Vicor high-density, high-efficiency power components. Users can set the operating conditions for each component of the power design to match the intended application and perform efficiency and loss analysis of individual components, as well as the full power system.

### Supported Components

The following component families are supporting using the Power System Designer:

1. PFM: Isolated AC-DC Converter with PFC
2. AIM: AC Input Front-end
3. ZVS Isolated DC-DC Converter
4. DCM: DC-DC Converter Module
5. BCM: Bus Converter Module
6. IBC: Intermediate Bus Converter
7. VTM: Current Multiplier
8. PRM: Buck-Boost Regulator
9. ZVS Buck Step-Down Regulator
10. ZVS Buck-Boost Regulator
11. NBM: Non-Isolated, Fixed-Ratio Converter Module

Details about each of these products can either be found on the whiteboard or on the website.

## Customer References

"I like the system overall. It is a handy tool to use in system design."

*Dragon Products*

"It's a good tool for your product. A great way to get the ball rolling."

*Northrop Grumman*

"Makes life easier, especially for a systems engineer who does not have time to delve into details."

*Honeybee Robotics*

"The power system designer tool allowed me, a chemical engineer, to configure a mil-spec DC-DC converter in less than five minutes. Amazing!"

*Solid State Cooling Systems*

"Very nice interface. Easy to use. Overall, a good tool to use for quick design."

*General Atomics Aeronautical*

## Example Implementation

**Note:** Recommended browsers for the Vicor PSD & whiteboard applications are Chrome and Internet Explorer (version 9 and up).

Follow these step by step instructions:

We are going to design a power system that takes 120 Volts AC and delivers four outputs of 12V / 9A, 5V / 10W, 3.3V / 4.0A and 1V / 15W.

Go to [www.vicorpower.com](http://www.vicorpower.com)

1. Enter the following parameters onto the PowerBench widget on the website:
  - a. Supply: AC
  - b. Nom : 120VAC
  - c. Regulated Checked
  - d. Nom : 12V
  - e. Amps Checked
  - f. 9
  - g. Output Return –OUT1
  - h. Click Add Output
  - i. Regulated Checked
  - j. Nom: 5
  - k. Amps Checked
  - l. 10

**Figure 2**  
PSD Tool  
(1a – 1l)

**An easy solution for generating complete power systems**

Learn about the Power System Designer

**Explore**  
Power Opportunities at 48 V

**48V**

Efficient, dense, cost effective and reliable power distribution.

Explore 48 V Power >

**View**  
Latest Video

Gyokou Supercomputer leveraging 48V Factorized Power

Watch Now >

**Explore**  
Webinars

REBROADCASTS

**Defense Power Systems**  
Meeting DC-DC Power System Requirements in Defense Applications >

**Battery Applications**  
Power Components for Battery Applications >

**EMI Issues**  
Simple Ideas to Make EMI Issues a Thing of the Past >

**Start**  
Your Power System Design ⓘ

**Input Specifications**

Supply  
 AC  
 DC

Min: 120 Vac, Nom: 120 Vac, Max: 120 Vac

**Multiple Output Specifications**

**Output 1**  
 Regulated  
 Fixed Ratio

Watts: 0, Amps: 9, Isolation Required:

Output Return: -OUT1, Add Output

**Output 2**  
 Regulated  
 Fixed Ratio

Watts: 10, Amps: 10, Isolation Required:

Output Return: -OUT1, Add Output

PowerBench™ Reset Design >

**Find**  
Data Sheets

Enter part number

Download >

**Explore**  
New Products

**Cool-Power\* ZVS Regulators**  
Regulate over wide input voltages with very low loss & 98% peak efficiency >

**ChiP DCMs with ±1% Regulation**  
A Better Brick – Directly driving loads that require tightly regulated output voltages >

**MIL-COTS DCM™ DC-DC Converter Modules in a VIA package**  
A Better Brick – Up to 93% Efficient >

**PFM™**  
Isolated AC-DC Converters with PFC >

- m. Select "Add Output" (this takes you to a new page)

**Figure 3**  
PSD Tool  
(1m – 2)

**Power System Designer™** *VICOR PowerBench™* Vicor Website | All PowerBench Tools | Provide Feedback

*Vicor's Power System Designer provides system designers unprecedented flexibility to architect and optimize end-to-end power subsystems. Choose to find a solution for a single output or multiple outputs. Vicor's Power System Designer can do both.*

Search for a single output solution

Search for a multiple output solution

**Enter**

**Power Requirements** ⓘ

Input Specifications

| Supply                              | Min (Vac) | Nom (Vac) | Max (Vac) |
|-------------------------------------|-----------|-----------|-----------|
| <input checked="" type="radio"/> AC | 120       | 120       | 120       |
| <input type="radio"/> DC            |           |           |           |

Multiple Output Specifications

| Output(s) | Min (V) | Nom (V) | Max (V) | Power/Current   | Regulation  | Isolation From Source                        | Output Return ⓘ | Output Name |
|-----------|---------|---------|---------|---|---|--|-----------------|-------------|
| Output 1  |         | 12      |         | <input type="radio"/> Watts<br><input checked="" type="radio"/> Amps 9  | <input checked="" type="radio"/> Regulated<br><input type="radio"/> Fixed Ratio | <input checked="" type="checkbox"/> Required | -OUT1           | Delete      |
| Output 2  |         | 5       |         | <input type="radio"/> Watts<br><input checked="" type="radio"/> Amps 10 | <input checked="" type="radio"/> Regulated<br><input type="radio"/> Fixed Ratio | <input checked="" type="checkbox"/> Required | -OUT1           | Delete      |
| Output 3  |         | 3.3     |         | <input type="radio"/> Watts<br><input checked="" type="radio"/> Amps 4  | <input checked="" type="radio"/> Regulated<br><input type="radio"/> Fixed Ratio | <input checked="" type="checkbox"/> Required | -OUT1           | Delete      |
| Output 4  |         | 1       |         | <input checked="" type="radio"/> Watts<br><input type="radio"/> Amps 15 | <input checked="" type="radio"/> Regulated<br><input type="radio"/> Fixed Ratio | <input checked="" type="checkbox"/> Required | -OUT1           | Delete      |

Share Add Output Reset Search for a System >

- n. Enter the last two output values:
  - i. Nom(V): 3.3
  - ii. Amps Checked
  - iii. 4
  - iv. Regulated Checked
  - v. Output Return –OUT1
  - vi. Select "Add Output"
  - vii. Nom(V): 1
  - ix. Watts Checked
  - x. 15
  - xi. Regulated Checked
  - xii. Output Return –OUT1
- 2. Click "Search for a System" in the lower right corner.

- You will be presented with 3 options:

**Figure 4**  
PSD Tool  
(3 – 4)

**Power System Designer™** *VICOR PowerBench™* Vicor Website | All PowerBench Tools | Provide Feedback

*Vicor's Power System Designer provides system designers unprecedented flexibility to architect and optimize end-to-end power subsystems. Choose to find a solution for a single output or multiple outputs. Vicor's Power System Designer can do both.*

Search for a single output solution  
 Search for a multiple output solution

**Enter**  
**Power Requirements** ⓘ

Input Specifications

| Supply                              | Min (Vac) | Nom (Vac) | Max (Vac) |
|-------------------------------------|-----------|-----------|-----------|
| <input checked="" type="radio"/> AC | 120       | 120       | 120       |
| <input type="radio"/> DC            |           |           |           |

Multiple Output Specifications

| Output(s) | Min (V) | Nom (V) | Max (V) | Power/Current   | Regulation  | Isolation From Source                        | Output Return ⓘ | Output Name                        |
|-----------|---------|---------|---------|---|---|--|-----------------|------------------------------------|
| Output 1  |         | 12      |         | <input type="radio"/> Watts<br><input checked="" type="radio"/> Amps 0  | <input checked="" type="radio"/> Regulated<br><input type="radio"/> Fixed Ratio | <input checked="" type="checkbox"/> Required | -OUT1           | <input type="text"/> <b>Delete</b> |
| Output 2  |         | 5       |         | <input type="radio"/> Watts<br><input checked="" type="radio"/> Amps 10 | <input checked="" type="radio"/> Regulated<br><input type="radio"/> Fixed Ratio | <input checked="" type="checkbox"/> Required | -OUT1           | <input type="text"/> <b>Delete</b> |
| Output 3  |         | 3.3     |         | <input type="radio"/> Watts<br><input checked="" type="radio"/> Amps 4  | <input checked="" type="radio"/> Regulated<br><input type="radio"/> Fixed Ratio | <input checked="" type="checkbox"/> Required | -OUT1           | <input type="text"/> <b>Delete</b> |
| Output 4  |         | 1       |         | <input type="radio"/> Watts<br><input checked="" type="radio"/> Amps 15 | <input checked="" type="radio"/> Regulated<br><input type="radio"/> Fixed Ratio | <input checked="" type="checkbox"/> Required | -OUT1           | <input type="text"/> <b>Delete</b> |

**Share** **Add Output** **Reset** **Search for a System >**

**View**  
**Available Solutions**

| Solution                   | Total Footprint (cm <sup>2</sup> ) | Front End Footprint (cm <sup>2</sup> ) | PdI Footprint (cm <sup>2</sup> ) | Total Efficiency (%) | Front End Efficiency (%) | PdI Efficiency (%) | Solution Price 1 Unit | Solution Price 500 Units | Solution Component Count | Figure of Merit  |
|----------------------------|------------------------------------|--|----------------------------------|----------------------|--------------------------|--------------------|-----------------------|--------------------------|--------------------------|--|
| <a href="#">Solution 1</a> | 51                                 | 44                                     | 7                                | 83.7                 | 90.1                     | 94.4               | \$455.80              | \$331.80                 | 7                        | Lowest Price<br>Recommended Best Fit<br>Smallest Footprint |
| <a href="#">Solution 2</a> | 57                                 | 44                                     | 13                               | 80.5                 | 90.2                     | 90.6               | \$814.80              | \$581.80                 | 6                        | Lowest Component Count                                     |
| <a href="#">Solution 3</a> | 53                                 | 44                                     | 8                                | 83.8                 | 90.0                     | 94.5               | \$465.00              | \$341.00                 | 8                        | Highest Efficiency   |

- Select "Solution 1"

5. Review your options and trade offs:

Figure 5  
PSD Tool  
(5 – 6)

Power System Designer™

[Vicor Website](#) | [All PowerBench Tools](#) | [Provide Feedback](#)

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**Reference**  
**Your Entered Power Requirements**

| Input Supply | Min (Vac) | Nom (Vac) | Max (Vac) |
|--------------|-----------|-----------|-----------|
| AC           | 120.0     | 120.0     | 120.0     |

| Output(s) | Min (V) | Nom (V) | Max (V) | Power/Current | Regulation | Isolation From Source | Output Return |
|-----------|---------|---------|---------|---------------|------------|-----------------------|---------------|
| Output 1  | 12.0    | 12.0    | 12.0    | 9.0 A         | Regulated  | Y                     | -OUT1         |
| Output 2  | 5.0     | 5.0     | 5.0     | 10.0 A        | Regulated  | Y                     | -OUT1         |
| Output 3  | 3.3     | 3.3     | 3.3     | 4.0 A         | Regulated  | Y                     | -OUT1         |
| Output 4  | 1.0     | 1.0     | 1.0     | 15.0 W        | Regulated  | Y                     | -OUT1         |

| Solution                                    | Total Footprint (cm <sup>2</sup> ) | Front End Footprint (cm <sup>2</sup> ) | POL Footprint (cm <sup>2</sup> ) | Total Efficiency (%) | Front End Efficiency (%) | POL Efficiency (%) | Solution Price 1 Unit | Solution Price 500 Units | Solution Component Count | Figure of Merit  |
|---|------------------------------------|--|----------------------------------|----------------------|--------------------------|--------------------|-----------------------|--------------------------|--------------------------|--|
| <input checked="" type="radio"/> Solution 1 | 51                                 | 44                                     | 7                                | 83.7                 | 90.1                     | 94.4               | \$455.80              | \$331.80                 | 7                        | Lowest Price<br>Recommended Best Fit<br>Smallest Footprint |
| <input type="radio"/> Solution 2            | 57                                 | 44                                     | 13                               | 80.5                 | 90.2                     | 90.6               | \$814.80              | \$581.80                 | 6                        | Lowest Component Count                                     |
| <input type="radio"/> Solution 3            | 53                                 | 44                                     | 8                                | 83.8                 | 90.0                     | 94.5               | \$465.00              | \$341.00                 | 8                        | Highest Efficiency   |

Figure of Merit

**View**  
**Solution 1 : Total System**  
*Click image to enlarge*

Analyze >

**Display Outputs**

- Output 1 (L1)
- Output 2 (L2)
- Output 3 (L3)
- Output 4 (L4)

**Analyze**  
**Output 1 (L1)**

| Part Number        | Quantity | Online Simulation |
|--------------------|----------|-------------------|
| PFM49148B6M24D0CA8 | 1        | ...               |
| PI3305-00-LGIZ     | 2        | ...               |

**Front End Power Utilization**

100.0% (112.0W) Used  
1.0% (0.0W) Available

**Point of Load Power Utilization**

45.0% (108.0W) Used  
55.0% (132.0W) Available

**View**  
**Solution 1 : Bill of Material**

Export to Excel
Purchase Selected Parts

| Reference Designator                   | Part Number        | Product Description         | Input Voltage (V) | Output Voltage (V) | Output Power (W) | Output Current (A) | Volume              | Price Each           | Quantity | Price Total          |
|--|--------------------|-----------------------------|-------------------|--------------------|------------------|--------------------|---------------------|----------------------|----------|----------------------|
| <input type="checkbox"/> † BR1         | 30660              | NONE                        | 0                 | 0                  | 0                | 0                  | 1 Unit<br>500 Units | \$0.00<br>\$0.00     | 1        | \$0.00<br>\$0.00     |
| <input checked="" type="checkbox"/> U1 | PFM49148B6M24D0CA8 | PFM™ AC-DC Converter Module | 115               | 24                 | 400              | 17                 | 1 Unit<br>500 Units | \$396.00<br>\$272.00 | 1        | \$396.00<br>\$272.00 |
| <input checked="" type="checkbox"/> U2 | PI3305-00-LGIZ     | Buck Regulator              | 24                | 15                 | 120              | 8                  | 1 Unit<br>500 Units | \$11.50<br>\$11.50   | 2        | \$23.00<br>\$23.00   |
| <input checked="" type="checkbox"/> U3 | PI3302-00-LGIZ     | Buck Regulator              | 24                | 5                  | 50               | 10                 | 1 Unit<br>500 Units | \$11.50<br>\$11.50   | 1        | \$11.50<br>\$11.50   |
| <input checked="" type="checkbox"/> U4 | PI3302-00-LGIZ     | Buck Regulator              | 24                | 5                  | 50               | 10                 | 1 Unit<br>500 Units | \$11.50<br>\$11.50   | 1        | \$11.50<br>\$11.50   |
| <input checked="" type="checkbox"/> U5 | PI3311-01-LGIZ     | Buck Regulator              | 24                | 1                  | 15               | 15                 | 1 Unit<br>500 Units | \$13.80<br>\$13.80   | 1        | \$13.80<br>\$13.80   |

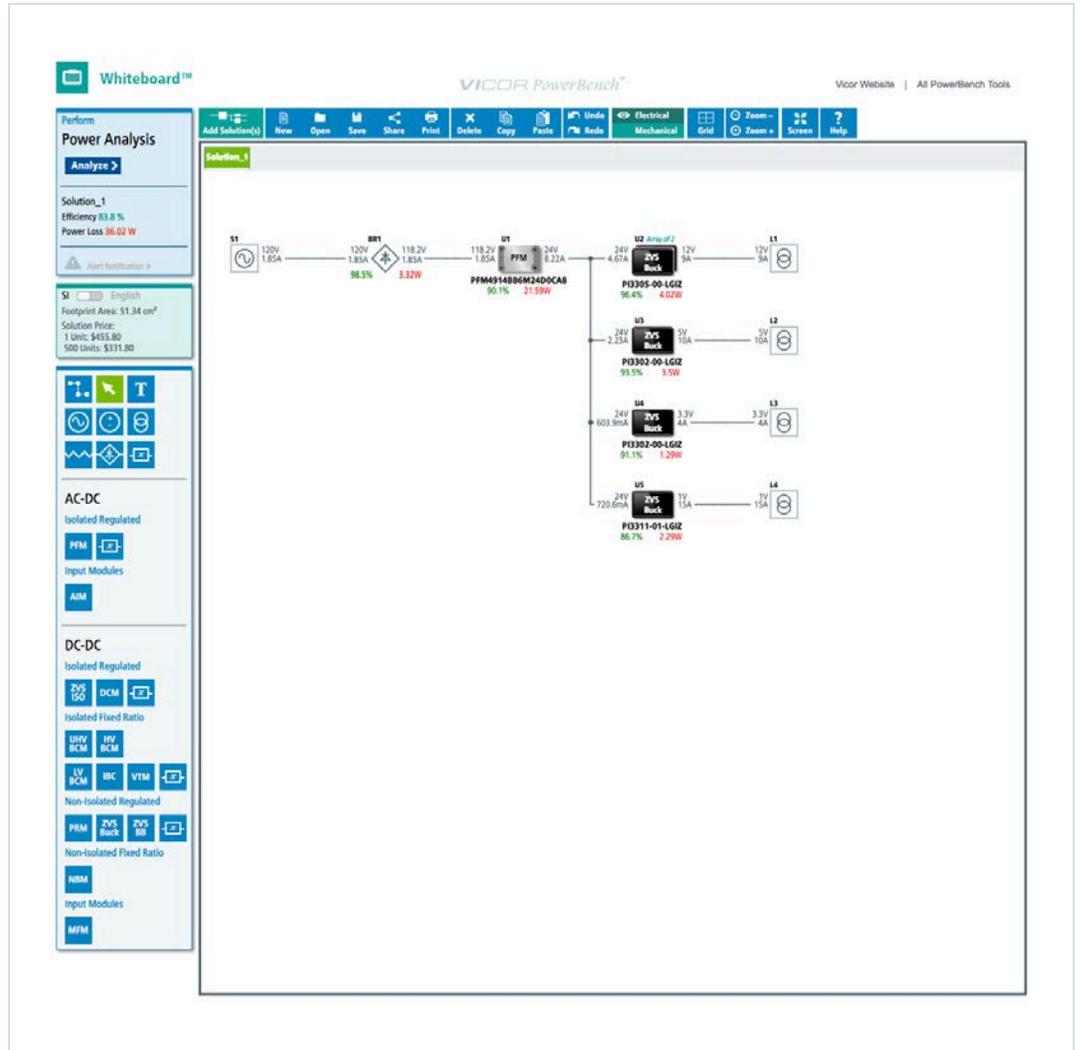
Solution Price as Low As:  
1 Unit: \$455.80  
500 Units: \$331.80

†: This product cannot be purchased online.

6. Select "Analyze" to view the Vicor whiteboard.  
(A new page will open with the whiteboard. If you have pop-up blocker on, please turn it off for [www.vicorpower.com](http://www.vicorpower.com)).

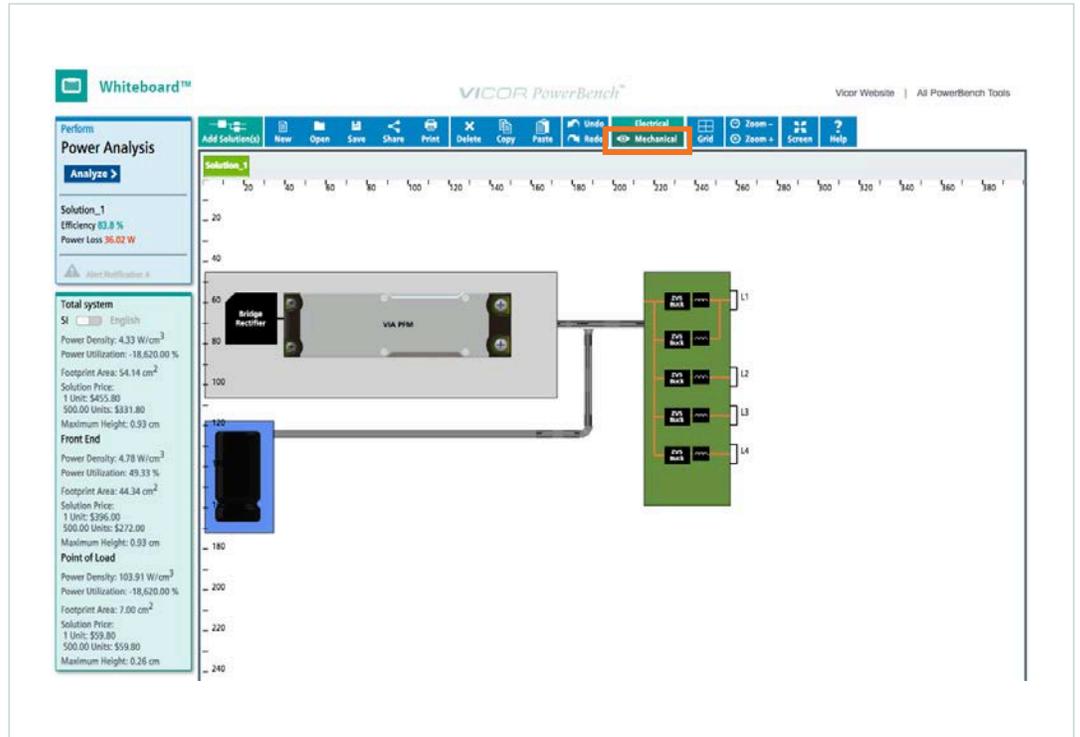
7. Review the recommended power design:

**Figure 6**  
PSD Tool  
(7)



8. Select "Mechanical" view to look at the layout:

Figure 7  
PSD Tool  
(8)



- Go back to the Hub page:  
(select the window on your browser that contains the Hub page)

**Figure 8**  
PSD Tool  
(9 – 10)

Power System Designer™

VICOR PowerBench™

[Vicor Website](#) | [All PowerBench Tools](#) | [Provide Feedback](#)

---

**Reference**

**Your Entered Power Requirements**

| Input Supply | Min (Vac) | Nom (Vac) | Max (Vac) |
|--------------|-----------|-----------|-----------|
| AC           | 120.0     | 120.0     | 120.0     |

| Output(s) | Min (V) | Nom (V) | Max (V) | Power/Current | Regulation | Isolation From Source | Output Return |
|-----------|---------|---------|---------|---------------|------------|-----------------------|---------------|
| Output 1  | 12.0    | 12.0    | 12.0    | 9.0 A         | Regulated  | Y                     | -OUT1         |
| Output 2  | 5.0     | 5.0     | 5.0     | 10.0 A        | Regulated  | Y                     | -OUT1         |
| Output 3  | 3.3     | 3.3     | 3.3     | 4.0 A         | Regulated  | Y                     | -OUT1         |
| Output 4  | 1.0     | 1.0     | 1.0     | 15.0 W        | Regulated  | Y                     | -OUT1         |

| Solution                                    | Total Footprint (cm <sup>2</sup> ) | Front End Footprint (cm <sup>2</sup> ) | POL Footprint (cm <sup>2</sup> ) | Total Efficiency (%) | Front End Efficiency (%) | POL Efficiency (%) | Solution Price 1 Unit | Solution Price 500 Units | Solution Component Count | Figure of Merit  |
|---|------------------------------------|--|----------------------------------|----------------------|--------------------------|--------------------|-----------------------|--------------------------|--------------------------|--|
| <input checked="" type="radio"/> Solution 1 | 51                                 | 44                                     | 7                                | 83.7                 | 90.1                     | 94.4               | \$455.80              | \$331.80                 | 7                        | Lowest Price<br>Recommended Best Fit<br>Smallest Footprint |
| <input type="radio"/> Solution 2            | 57                                 | 44                                     | 13                               | 80.5                 | 90.2                     | 90.6               | \$814.80              | \$581.80                 | 6                        | Lowest Component Count                                     |
| <input type="radio"/> Solution 3            | 53                                 | 44                                     | 8                                | 83.8                 | 90.0                     | 94.5               | \$465.00              | \$341.00                 | 8                        | Highest Efficiency   |

**View**

**Solution 1 : Total System**

Click image to enlarge

**Display Outputs**

- Output 1 (L1)
- Output 2 (L2)
- Output 3 (L3)
- Output 4 (L4)

**Analyze**

**Output 1 (L1)**

| Part Number        | Quantity | Online Simulation |
|--------------------|----------|-------------------|
| PFM4914BB6M24D0CA8 | 1        | --                |
| PI3305-00-LGIZ     | 2        | --                |

**Front End Power Utilization**

100.0% (112.0W) Used  
-1.0% (0.0W) Available

**Point of Load Power Utilization**

45.0% (108.0W) Used  
55.0% (132.0W) Available

**View**

**Solution 1 : Bill of Material**

[Export to Excel](#) | [Purchase Selected Parts](#)

| Reference Designator                   | Part Number        | Product Description         | Input Voltage (V) | Output Voltage (V) | Output Power (W) | Output Current (A) | Volume              | Price Each           | Quantity | Price Total          |
|--|--------------------|-----------------------------|-------------------|--------------------|------------------|--------------------|---------------------|----------------------|----------|----------------------|
| <input type="checkbox"/> † BR1         | 30660              | NONE                        | 0                 | 0                  | 0                | 0                  | 1 Unit<br>500 Units | \$0.00<br>\$0.00     | 1        | \$0.00<br>\$0.00     |
| <input checked="" type="checkbox"/> U1 | PFM4914BB6M24D0CA8 | PFM™ AC-DC Converter Module | 115               | 24                 | 400              | 17                 | 1 Unit<br>500 Units | \$396.00<br>\$272.00 | 1        | \$396.00<br>\$272.00 |
| <input checked="" type="checkbox"/> U2 | PI3305-00-LGIZ     | Buck Regulator              | 24                | 15                 | 120              | 8                  | 1 Unit<br>500 Units | \$11.50<br>\$11.50   | 2        | \$23.00<br>\$23.00   |
| <input checked="" type="checkbox"/> U3 | PI3302-00-LGIZ     | Buck Regulator              | 24                | 5                  | 50               | 10                 | 1 Unit<br>500 Units | \$11.50<br>\$11.50   | 1        | \$11.50<br>\$11.50   |
| <input checked="" type="checkbox"/> U4 | PI3302-00-LGIZ     | Buck Regulator              | 24                | 5                  | 50               | 10                 | 1 Unit<br>500 Units | \$11.50<br>\$11.50   | 1        | \$11.50<br>\$11.50   |
| <input checked="" type="checkbox"/> U5 | PI3311-01-LGIZ     | Buck Regulator              | 24                | 1                  | 15               | 15                 | 1 Unit<br>500 Units | \$13.80<br>\$13.80   | 1        | \$13.80<br>\$13.80   |

**Solution Price as Low As:**

1 Unit: \$455.80

500 Units: \$331.80

†: This product cannot be purchased online.

- Looking further on this page, review the bill of materials for either design. Note that Solution 2 shows one less component, but a higher BOM than Solution 1. Also note that this page includes documentation, specifications and sample / volume pricing. Please verify because results can change as you modify inputs and/or preferences.

- From there, a user can select their part(s) by clicking “Purchase Selected Parts” and then purchase the design through the Vicor E-Commerce System.

**Figure 9**  
PSD Tool  
(11 – 13)

The screenshot displays the 'Inventory & Purchase' section of the Vicor website. At the top, there is a navigation bar with the Vicor logo and the tagline 'Modular Solutions for Your Power System'. Below the navigation bar, there are tabs for 'Search', 'Browse', 'Use', and 'Get', with sub-tabs for 'Products', 'Industries', 'Tools', and 'Support'. A search bar is located in the top right corner.

The main content area is titled 'Inventory & Purchase' and contains a table with the following columns: Quantity, Part Number, Product Description, Production Lead Time, Prototype Lead Time, In Stock, Buy from Vicor, Buy from Digi-Key, Buy from Mouser, and Buy from Future Electronics. The table lists four rows of products:

| Quantity | Part Number                                      | Product Description          | Production Lead Time | Prototype Lead Time | In Stock | Buy from Vicor | Buy from Digi-Key | Buy from Mouser | Buy from Future Electronics |
|----------|--|------------------------------|----------------------|---------------------|----------|----------------|-------------------|-----------------|-----------------------------|
| 1        | PFM4914BB6M2400CAB VPPM 4914 175V 24V/100W C LNL |                              | 12 Week(s)           | 12 Week(s)          | 0        | Add to Cart >  | 0 Buy >           | 0 Buy >         | 0 Buy >                     |
| 2        | PI3305-00-LGIZ                                   | CookPower ZVS Buck Regulator | 6 Week(s)            | 6 Week(s)           | 0        | Add to Cart >  | 172 Buy >         | 83 Buy >        | 0 Buy >                     |
| 2        | PI3302-00-LGIZ                                   | CookPower ZVS Buck Regulator | 6 Week(s)            | 6 Week(s)           | 0        | Add to Cart >  | 4,501 Buy >       | 589 Buy >       | 0 Buy >                     |
| 1        | PI3311-01-LGIZ                                   | CookPower ZVS Buck Regulator | 6 Week(s)            | 6 Week(s)           | 0        | Add to Cart >  | 126 Buy >         | 83 Buy >        | 0 Buy >                     |

At the bottom of the page, there is a footer with the text 'Modular Solutions for Your Power System' and a list of links: Sitemap, Privacy Policy, Provide Web Feedback, Contact Us, Investor Relations, and Made in the USA © 2017.

- At this point you are good to add this design to the cart or export the design to an excel file that can be mailed to your purchasing department to order.
- Congratulations, you’ve finished your power system design.

## Conclusion

The PSD embodies the Power Component Design Methodology and the innovative approach to power that Vicor is known for.

The Power System Designer expedites and optimizes the creation of high-performance power designs, dramatically reducing time to market for customers. If you have any questions using the tool or this guide, please email technical support: [apps@vicorpower.com](mailto:apps@vicorpower.com).

## Addendum

### Single Product Search Using the "Solution Selector Tool"

"Search for Solutions" delivers a single product search results and is the first radial button to the tool. The Vicor version provides a coupling of products that meet your custom needs. Here, the user may filter by "Form Factor", "Mounting Style" and "Temperature". It enables an engineer to see all the options for those who like seeing every possible option for a power system design.

Figure A.1  
Solution Selector Tool

**Search for Solutions** Find a product using parametric search.

**Input Specifications**

Supply: Min (VDC), Nom (VDC), Max (VDC)

AC DC 48 48 48

**Single Output Specifications**

Output(s): Min (V), Nom (V), Max (V), Power Current, Regulation, Conversion Factor, Isolation

Output 1: 12, 300, Regulated, Fixed Ratio, Required

**Refine**

**Form Factor**

- Brick
- Chip

**Mounting Style**

- Surface Mount
- Through Hole

**Package Style**

- 3623 CHIP
- Full Brick
- Full Chip
- Half Brick
- Quarter Brick

**Temperature Range**

- 20 to 100
- 25 to 85
- 40 to 125
- 55 to 125
- 55 to 85

**Regulation Type**

- Adaptive Loop

**View**

Available Solutions  
Solutions Found: 111  
Solutions Displayed: 10

| Component                | Solution Type | Solution Part Number(s) | Part QTY | TFCB | Operating Efficiency (%) @ 25 °C | Solution QTY | Solution Price \$/Unit | Solution Price \$/99 Units | Vmax (V) | Vout (V) | Iout Max (A) | Mounting Style | Temp (°C)  | Isolation In-to-Out (Vdc) | Control Interface | Regulation Type | ML-COTS | Power Density (W/cm <sup>2</sup> ) |
|--------------------------|---------------|-------------------------|----------|------|----------------------------------|--------------|------------------------|----------------------------|----------|----------|--------------|----------------|------------|---------------------------|-------------------|-----------------|---------|------------------------------------|
| <input type="checkbox"/> | PRIMA-VTM     | PRMA80F480T1000A00      | 1        | 2145 | 93.9                             | 3            | \$282                  | \$126                      | 48       | 12.0     | 39.8         | Surface Mount  | -40 to 125 | 2250                      | Analog            | Adaptive Loop   | No      | 27.7                               |
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| <input type="checkbox"/> | PRIMA-VTM     | PRMA80F48               |          |      |                                  |              |                        |                            |          |          |              |                |            |                           |                   |                 |         |                                    |

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