VICOR

More power within the same space

Customer's challenge

Machine vision systems have dramatically increased the throughput and improved the quality of products built on automated production lines by reducing inspection time and improving accuracy. This manufacturer was looking to improve throughput further by upgrading the computing power of the image processing system. However, there was no additional space for expansion as the equipment form factor was already fixed. The key goals were:

- Faster, more powerful image processing required increased power
- Space for larger power supply not available
- Future upgrades will require even more power

The Vicor solution

The three output rails were converted down individually directly from the 24V input supply. The requirements of the two low-voltage, low-power (50W) rails were met by Vicor ZVS Buck regulators. The higher power 12V rail (170W) was provided by two ZVS Buck regulators in parallel. Key benefits were:

- Extremely small sized solution (10 x 14mm per regulator, with few external components)
- Low waste heat reduced space required for managing heat (95.5% efficiency)
- Regulators easily paralleled for increased power

Vicor ZVS Buck Regulators maximized power available within a tight space

Power Delivery Network: ZVS Buck regulators directly converted the 24V input to each individual output, increasing system efficiency, reducing waste heat and improving reliability. To analyze this power chain go to the **Vicor Whiteboard** online tool.
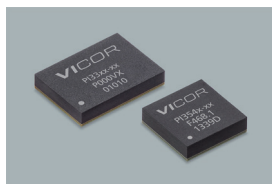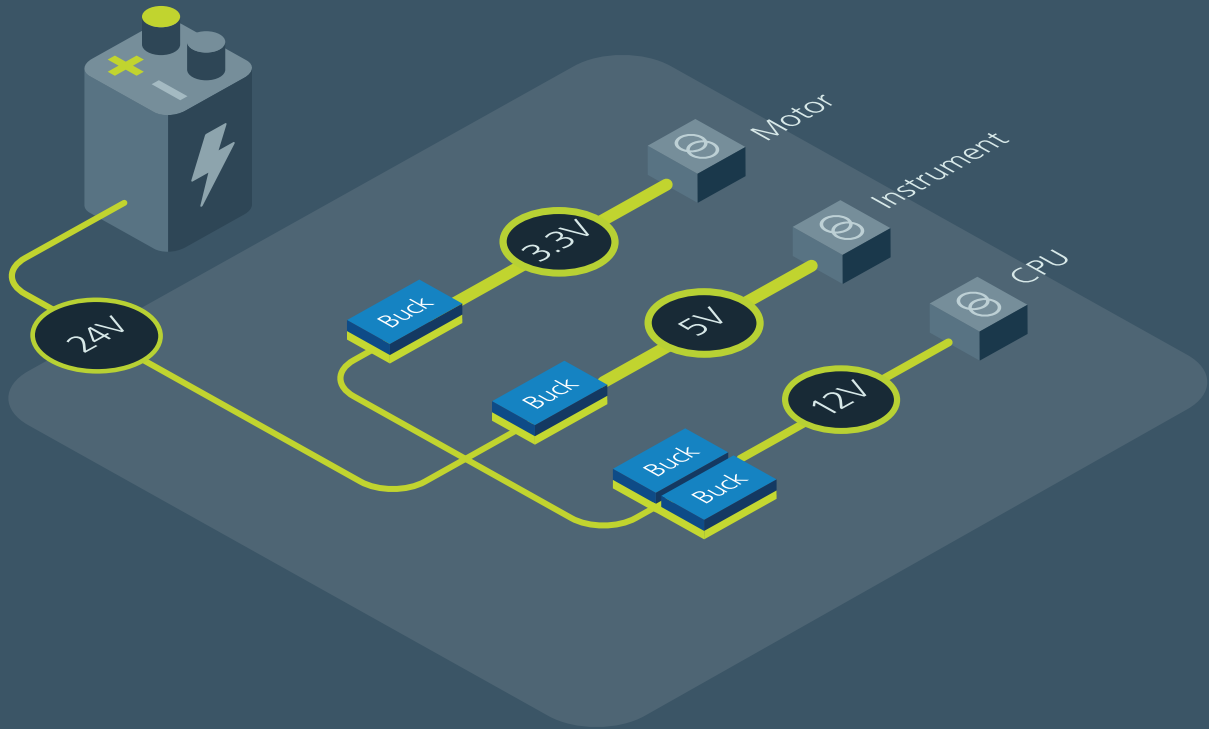
ZVS buck regulators

Non-isolated regulated

Input:12V (8 – 18V),
24V (8 – 42V), 48V (30 – 60V)

Output: 2.2 – 16V

Current: Up to 22A

Peak efficiency: 98%

As small as
10.0 x 10.0 x 2.56mm

vicorpower.com/buck